

**The Development of Reading Strategies:
A Longitudinal Study on Chinese International
Master's Students**

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Abstract

This longitudinal study explores how a Western university setting affects Chinese international students' academic reading in terms of their strategy use during their master's study. In order to explore the multifaceted nature of academic reading, reading strategies in this study are categorised into three types: textbase strategies (TBS); situation model construction strategies (SMS); and comprehension monitoring strategies (CMS). Furthermore, the study applies the concepts of trait and state to distinguish two types of strategy status: Chinese students' general perception of what they normally do in their coursework reading (trait strategy use), and what they actually do in their on-line reading (state strategy use). Mixed methods were employed in data collection, which was carried out twice among the same participants in one academic year. The results of the questionnaires indicate that significant changes occurred in trait strategy use over time, in particular, in trait situation model construction strategies. Think-aloud was used to examine their cognitive processing in a task-provoked situation. Protocol analysis shows that there were no significant changes in their state strategy use between Time1 and Time2. Case studies and syntactic parsing analysis show that their TBS-oriented processing was mainly triggered by their low competence in English language decoding. In addition, data analysis of focus groups and interviews suggests that their choice of TBS was closely related to the socialisation they had in China. Socio-cultural factors seemed to have a strong impact on what strategies they used, and also on the frequency with which they used them. The unbalanced development between trait and state strategy use suggests that Chinese international students' academic reading is dynamic and multidimensional. Findings in this study offer us insightful information about the transition in Chinese international students' reading from 'learning to read' to 'reading to learn', and also about the scaffolding that this population needs in master's study in the UK.

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Chapter One: Introduction

Understanding the complexities of the interactions of Chinese learners with their learning environments is of growing concern in the current UK higher education context (Gu and Schweisfurth, 2006:88).

The internationalisation of UK higher education (HE) (Robinson, 2006) began in the 1990s, with expanding recruitment taking place worldwide at both undergraduate and postgraduate levels. According to the UK Council for International Student Affairs (UKCISA), the total number of international students in the UK in 2008-2009 was 305,885, among whom Chinese students (from mainland China only, excluding those from Hong Kong and Macao) amount to 47,035, constituting the largest group in this population (http://www.ukcisa.org.uk/about/statistics_he.php). At Cardiff University alone, there were about 600 Chinese students in 2007-2008 (when this study started), with over half of them studying in the Business School.

For these international students for whom English is not their first language, the shift in their learning context means multifaceted changes both in their life and study. It entails change from an EFL (English as a foreign language) environment to an ESL (English as a second language) environment, but it also entails having to meet myriad new challenges as a result of geographical relocation, socio-cultural disorientation, and linguistic inadequacy (Murphy-Lejeune, 2003:105). Murphy-Lejeune (2003) posits that these student sojourners are in a situation where adaptation and transformations are critical if they want to maximise learning in their new environment. Studying abroad implies a loss of what they used to take for granted. To some extent, it also represents an extensive interaction between the individual student and the new environment, in which the student is constantly positioned to face unsparing challenges (p.101-5).

Because of these challenges, especially the different academic requirements in the new learning environment, these international students have to make adjustments in order to succeed academically. The focus in this study is on Chinese international students' academic reading during their master's study in the UK, in particular, changes in their cognitive processing over time as a result of environmental impact and their efforts to appropriate such influence. The purpose of this one-year longitudinal study is to investigate how the Western HE context affects these students' use of reading strategies in their coursework reading. My two main research questions are as follows.

1. How does Chinese international students' academic reading develop in terms of their deployment of reading strategies during their one-year master's study?
 - a. How does their perception of what they normally do during reading develop in the course of one-year master's study?
 - b. How does their deployment of reading strategies in on-line reading develop in the course of one-year master's study?
2. What socio-cultural factors are involved in their strategy use? How are these factors related to their strategy deployment?

Having been educated in China, these international students are very likely to bring their Chinese values with them to the UK. This indicates that their accommodation to the new learning community will constantly face the challenge of whether they choose to stay in their comfort zone or to take the risk to meet the new demands. To explain why Chinese international students might be expected to experience a complex process of adaptation in the UK, in the next section, I will briefly introduce the prevalent cultural values into which Chinese international students are socialized both at home and at school in China: the impact of Confucianism.

1.1 The Impact of Confucianism

It is well documented that education in China has been largely influenced historically by Confucianism (Hu, 2002; Zhang and Watkins, 2007), which is based originally on the thoughts of philosopher and educator Confucius (551BC – 479 BC). Although people's understanding of Confucianism might be partial or inaccurate (Shi, 2006:124), the philosophical perspective “considers proper behaviour and human relationships as the basis of society” (Tamai and Lee, 2002:33), and is mainly characterised by two key concepts: hierarchy and obedience (Hu, 2004:634). According to Confucianism, a harmonious society is built on a hierarchical structure, in which certain orders should be strictly maintained, and this structure should apply to everybody in society. In principle, younger people should show respect to their elders, while older people should in return protect and look after the younger ones. “In each of the relationships, the superior member (parents, husband, etc.) has the duty of benevolence and care for the subordinate member (children, wife, etc.). The subordinate member has the duty of obedience” (Zhou, 2006:128). Clearly such relationships are unequal, but they do entail reciprocal obligations and duties.

“The concepts of hierarchy and obedience are in harmony with cultural values that de-emphasize the importance of the individual” (Hu, 2004:634). This is central to understanding the educational context in which Chinese students studying abroad have been brought up. According to Hu (2004), usually before they go to school, children have already been taught at home about the hierarchical structures, and have been trained to be obedient to their elders. This concept is further strengthened at school. Both the family and school are coherent with cultural values and share the same Confucian tradition. In practice, this is manifested by the predominantly teacher-centred instruction, in which respect for teachers is ingrained. This discourages both individuality and diversity in children's learning, as one of the important roles of the school is to foster uniformity and conformity (ibid.:635). These values are embodied in everyday classroom

teaching as described by Cortazzi and Jin (1996:178) (see below), where great emphasis is attached to collectivism. Within such priorities, education in China has mainly focused on teaching students the importance of harmony in society rather than individualism:

[E]ach person must be part of a group or community; learning interdependency, co-operation and social awareness; becoming oneself in relation to significant others; expressing that which is socially shared rather than individually felt; creating on the basis of mastery rather than discovery.

Apart from his philosophical ideas on proper human behaviour and a harmonious society, which underpin the concepts of hierarchical structure and obedience, Confucius has also been a highly influential figure in Chinese education, and is known as the “First Teacher” of China. He was the first to advocate the importance of thinking in learning. One of his famous sayings -- “to learn and never think – that’s delusion. But to think and never learn that is perilous indeed” (Hinton, 1998:14) -- has had a great impact on education in China. Later on, Zhu Xi (1130-1200), an educator and philosopher in the Song Dynasty, constructed a learning model by elaborating on Confucius’ classic work *The Doctrine of the Mean* (Confucius’ thoughts edited by his students): “Study [knowledge] extensively, question its meaning precisely, ponder it with full vigilance, scrutinize its distinctions with clarity of vision, practise it in all earnestness” (Plaks, 2003:42). Clearly, Zhu Xi’s model further enriches Confucius’ notion of thinking and learning, and highlights the interplay between extensive learning, critical evaluation, and practical application, rather than accepting blindly what is learning.

However, many believe that this learning model failed to cultivate Chinese learners’ critical thinking, and that this was mainly due to the impact of the Chinese imperial examination system. This system was used to select local and government officials largely based on candidates’ encyclopaedic knowledge of Confucian values (Yang, 2011:38). This testing system, which started in the Sui Dynasty (581-618 A.D.) and lasted until the end of Qing Dynasty (1644-1911) some thirteen centuries later, inspired

thousands of people to study hard, but generated a powerful negative washback effect as well. Since the test required the candidates to compose essays by following highly stylised and rigid forms, those who were eager to excel would spend at least six years to prepare for this exam by memorising Confucian canonical texts from *The Four Books* and *The Five Classics*, which between them contain over 400,000 characters (Miyazaki, 1976). The practice of rote memory gradually developed into a national belief that good memory is “the single most important attribute for intelligence” (Hu, 2004:637). Consequently, the model of reflective thinking gave way to rote memory learning. Even Zhu Xi himself (quoted in Gardner, 1990:31) claimed: “The sages and worthies did not wish [students] to engage in memorising texts ... Students today obviously act contrary [to what the sages and worthies intended]”.

In modern China, despite the political upheavals in the mid-20th century, Confucian values are still powerful in affecting people’s attitudes toward learning and communication practices (Watkins and Biggs, 1996; Gao and Ting-Toomey, 1998). There is great admiration and respect for education and learning (Scovel, 1983), and education still serves as the selective mechanism in which everybody is able to reach a better life by passing highly competitive exams (Biggs, 1998:729). This does not mean that the education system is immune from the ‘surface’ learning dilemma. In the past decade, China has been through radical education reform at all levels (Ryan, 2011:3). One of the main reform agendas is developing students’ critical thinking, problem solving and creativity (Ryan et al. 2009:429), an attempt to shift to deep learning and to move beyond rote memory.

But in reality, these concepts are constantly challenged by the choice between “teaching the book” or “teaching the person”, because high marks in the exams are always associated with more practical purposes, such as employment (Jin and Cortazzi, 2006:14). Yang (2011:41) argues that although education reform in China is following the

Western model, the reform in higher education has mostly remained at the material level, and is yet to reach the core of the Western university model: intellectual freedom and institutional autonomy. The research project on China's curriculum reform by Ryan et al. (2009) also suggests a changing but complex education context. Among the schools that are involved in this project, there are signs of change with regard to teachers' teaching methods and students' learning approaches. This shows that Chinese teachers are capable of changing their dominant roles in class, for instance, by organising small group activities in which the students are in charge of their learning, and by setting up more student-engaged learning tasks and assessment methods. Nevertheless, Ryan et al. (2009) also point out that some deep-rooted socio-cultural factors have greatly slowed down the reform. These include the impact of Confucianism on Chinese teachers (which makes it extremely difficult for them to adopt student-centred teaching methodologies); large class sizes; insufficient curriculum resources; and the lack of an evaluation system supportive of curriculum reform.

With such a socio-cultural background, Chinese international students, like other international students, face constant challenges in their new learning environment owing to the contrast between their home country and the UK. In the next section, I will move on to consider the impact of different socio-cultural values on academic learning, and thus supply the rationale for this one-year longitudinal study.

1.2 The Rationale for This Study

Zhao and Bourne's ethnographic study (2011) suggests that Chinese international students would normally go through three stages in their one year master's study in the UK, namely, unfamiliarity and frustration at Stage 1; further expectation gaps, intercultural academic identity conflicts and psychological struggles at Stage 2; and adaptation and relaxation at Stage 3 (p.250). These findings indicate that, apart from academic pressure, socio-cultural differences constitute another main obstacle for

Chinese students to overcome in their new learning environment. These discrepancies may encompass many elements, such as:

different social and cultural mores and customs, norms and values from the ones they have known; different modes of teaching and learning; and different expectations and conventions about participation and performance (Ryan and Carrol, 2005:5).

According to Ballard (1996:152-4), an education system is like a continuum, with conserving and extending teaching philosophies polarising at the two extremes. On the conserving extreme, teaching is carried out mainly in a reproductive way, with great emphasis being placed on factual knowledge. This approach dominates primary and secondary school education. In-between is the transition to an analytical approach, which is used to cultivate students' synthesising and analytical ability in undergraduate education. This paves the way for the extending extreme where a speculative approach is used, particularly in research degree study. This approach encourages research students to think for themselves, and it is expected that their work will be original. Ballard (1996) argues that although all cultures produce creative minds, many non-Western societies tend to place stronger emphasis on the conserving attitude and to rely more on reproductive learning.

Given the distinctive emphases in education on factual knowledge and original thinking, the key issue in this research is to examine how the Western education context might influence Chinese students' cognitive processing in academic reading over time. If Chinese students are, as has been suggested above, educated to appreciate factual knowledge, they would be ill-equipped to engage in critical reading in their coursework study upon their arrival in the UK. (This issue will be further explored in Chapter Two.) If this is the case, what sort of strategies are they going to use instead? It will be suggested

in Chapter Four that they tend to use textbase¹ processing strategies, strategies for understanding meaning of a text so that they can remember and accept it. If that is so, it may mean that they are missing out on a vital additional step necessary for success in the Western education system, because while understanding is necessary for critical engagement, it is not sufficient. If their problem really is one of their socio-cultural experiences, then it would follow that after being in the new culture for a while as they become more aware of the new academic requirements in Western universities, their strategy use will develop to fit into the new learning environment.

Apart from socio-cultural impact, there also exists the possibility that their textbase processing may arise from inadequate English language proficiency. Even though they became aware of the new academic requirement: to be critical in their master's study, their incompetent language processing ability could still prevent them from engaging in critical reading. (Case studies and syntactic parsing analyses in Chapter Six will offer an in-depth understanding of their reading difficulties.) If it is so, it may be the case that they will change their strategies automatically as their English proficiency improves. In either case, there is likely to be some interplay between socio-cultural factors and their English language proficiency with regard to their cognitive processing during reading. These are hypotheses that will be tested in Chapters 5, 6 and 7.

There are some key preliminary questions for this study. For instance, how to define reading and reading strategies? This will be discussed in Chapter Three. How can the reading strategies deployed by Chinese students be most effectively measured? What is the relationship between what they actually do in their reading and what they *believe* they are doing during reading? These conceptual issues will be clarified in Chapter Four, and the different status of strategies will be investigated respectively in Chapters 5 and 6.

¹ "Textbased" seems more natural than "textbase" in English; however, since the latter comes from the literature, the term "textbase" will be used throughout this thesis.

Furthermore, what role is being played by socio-cultural factors in their academic reading? Chapter Seven will explore the interrelationship of socio-cultural factors and Chinese students' strategy use deployed in English reading.

These dimensions are important because answers to these questions will provide both theoretical and empirical justification for future strategy research. They not only explore Chinese international students' strategy use in different situations, but also how these students' deployment of reading strategies is related to environmental factors. In this study, Chinese international students' academic reading is scrutinised as a situated learning activity within a specific socio-cultural context. Because their learning experience involves engagement with two different communities: China and the UK, socio-cultural factors are investigated in a developmental way. That is to say, these students' academic reading in the UK is traced back to their English reading situation in China, so that a causal relationship can be established between the past and the present. Knowledge in these dimensions will jointly contribute to a multifaceted appreciation of the dynamics of their academic reading, especially with regard to how their cognitive processing interacts with their unique background. Such research should prove very useful, since few studies have been carried out to explore longitudinally the impact of learning environment on L2 readers' strategy use in an academic context, and there are still fewer studies focusing on L2 readers' strategy use when their L2 English reading changes from 'learning to read' to 'reading to learn'.

The significance of this study is that it offers insights into the development of Chinese international students' academic reading over time, as well as insights into how to provide the right scaffolding to support this large group of international students during their study in the UK. Furthermore, this study encompasses two different paradigms: cognitive and socio-cultural, and explores two neglected areas of strategy research

identified by Gao (2003:42): how the learning environment affects students' choice of strategies; and how the processes of learner strategy develop over time.

This thesis consists of eight chapters.

This chapter, Chapter One, serves mainly to introduce the research purposes, the main research questions, and the rationale for this study. In order to know what Chinese international students would bring with them in their master's study in the UK, the impact of Confucianism on these students is discussed.

Chapter Two establishes the research context by comparing the distinctive socio-cultural values and different practices operating in the education systems of China and the UK. It focuses on Chinese international students' priorities in their academic reading upon their arrival in the UK. Being socialized within a Confucian background, knowledge-centred education in China has trained these students to show respect by accepting the views of experts at face value. This is in sharp contrast with the ideal of student-centred education in Western societies, which addresses the importance of having different ideas and of challenging experts' views. In addition, the test-dominated system in China, with its constructs heavily relying on factual knowledge, has largely contributed to the prevalence of rote learning strategies among students. Previous studies suggest that shifting the learning environment requires adaptations in students' learning, triggering changes in strategy use due to new academic requirements. Since their previous learning experience in China has fostered strategies aiming at the comprehension of textual meaning, it is assumed that academic requirements in the UK will push Chinese students to engage in more critical reading in their master's study.

Chapter Three establishes the processing framework for academic reading based on evidence from previous research, which constitutes the core theoretical basis for this

study. The key issues that are addressed in this chapter are as follows: How to define the concept of reading in my research context? How to integrate socio-cultural impact with academic reading, so that such impact can be taken into account in Chinese international students' academic reading? How to justify strategy research in this study? Answers to these questions will guide the following part of this study, in particular, critical evaluation of previous research, data collection, and data analyses.

Chapter Four constructs a longitudinal research design, in which research questions are asked with regard to Chinese international students' strategy use in an academic context. This chapter explores some issues in relation to examining students' strategy use, for instance: What strategies have been found to be frequently used by Chinese students in their English reading? Do undergraduates in China report that they use similar reading strategies to those who are studying in English speaking countries? How to distinguish two different types of strategic reading: how readers generally perceive the way they normally read (their deployment of trait strategies); and what they actually do in a task-provoked situation (their deployment of state strategies)? What methods have been used in these studies to investigate students' deployment of reading strategies? How valid are they? –Mixed methods are adopted in this study in line with the answers to these questions so that the multidimensionality of Chinese students' academic reading can be fully investigated.

Chapter Five focuses on the first part of the first research question: How do Chinese international students' trait strategies develop in the course of their one-year master's study? Questionnaires are used in data collection, constructed in line with the item pool from Chapter Four and the further critical review of three previous questionnaires on academic reading strategies. Apart from reading strategies, Tseng et al.'s (2006) template on students' trait knowledge of self-regulation is also included in my

questionnaire construct, in an attempt of teasing out whether a traditional measurement on strategy is invalid as Tseng et al. (2006) claim.

Chapter Six explores the second part of the first research question: How do Chinese international students' state strategies develop in the course of one-year master's study? In order to capture the transitory and constant state strategy use in a task-specific situation, think-aloud data are reported. Quantitative analysis shows the overall development of state strategy use, while case studies and syntactic parsing analysis offer us the detailed context of participants' cognitive processing, especially in relation to when, what, and how their state strategies are used.

Chapter Seven investigates the socio-cultural factors involved in this changing process: the second research question. Focus groups and interviews are used together in data collection. Data analysis is carried out in line with socio-cultural perspectives, mainly focusing on students' accounts of how differences between the two education systems in China and the UK have led to changes in their academic reading in their master's study.

Chapter Eight brings the various strands of research together to answer the research questions. The findings in this study suggest that the development of Chinese international students' academic reading is complex and multifaceted, and that their employment of trait and state strategies does not develop in a parallel way. Furthermore, these findings also offer insights into the debate concerning whether self-regulation should replace traditional strategy instrument, and the distinction between learning and strategic learning raised by Dörnyei (2005). Given the growing situation of English internationalisation, the findings of this study offer insightful information about how to provide the right intervention to this sort of international students, especially with regard to the transition in their English reading from 'learning to read' to 'reading to learn'.

Chapter Two: English Reading in Two Distinctive Learning Environments

The development of a suitable course for students who are preparing to study overseas in an Anglo university will require some shifting of the priorities and objectives of the traditional language preparation courses provided for these students. There will be a refocusing of the syllabus away from English language as the central concern and towards English as a tool for acquiring and implementing the learning and study skills appropriate to the expectations which underpin Western tertiary teaching (Ballard, 1996:167).

The issue raised by Ballard here mainly concerns the implicit transition that international students would experience when they are studying abroad. It is the adjustment from studying English as a language to using English as a tool to learn, which entails not only a change from EFL to ESL, but also, and more importantly, a change in the socio-cultural values manifesting in academic requirements. Helping these students adapt to the Western HE environment is, in Ballard's view, essential for their academic success.

To help establish why a change of learning environment might trigger so many challenges, this chapter will briefly introduce the typical previous learning context of Chinese international students: the education system and English teaching and learning in China, in particular, the College English Test (CET) Band 4 (reading test) at tertiary level. This will facilitate a targeted comparison with the western learning culture in which they later find themselves, making it possible to identify the major differences to which they have to adapt.

2.1 Test-dominated Education System in China

Education in China consists of three main parts, as indicated in Figure 2.1: primary school, secondary school, and university. Throughout this whole period, examinations play an essential role (Qi, 2005:145; Hu, 2004:636). They are intensively manipulated as part of teaching practice in all schools. For instance, mid-term and end-term exams are

common practice each semester. In addition, students have to pass three entrance exams if they eventually want to attend university: from primary school to junior middle school; from junior middle school to senior middle school; and a university entrance exam (Zhao, 2005:6). After that, there are also entrance exams for master's degree and PhD study. In most cases, students' tests scores "reflect their ability to memorize, as the tests emphasize the regurgitation of facts" (Hu, 2004:636).

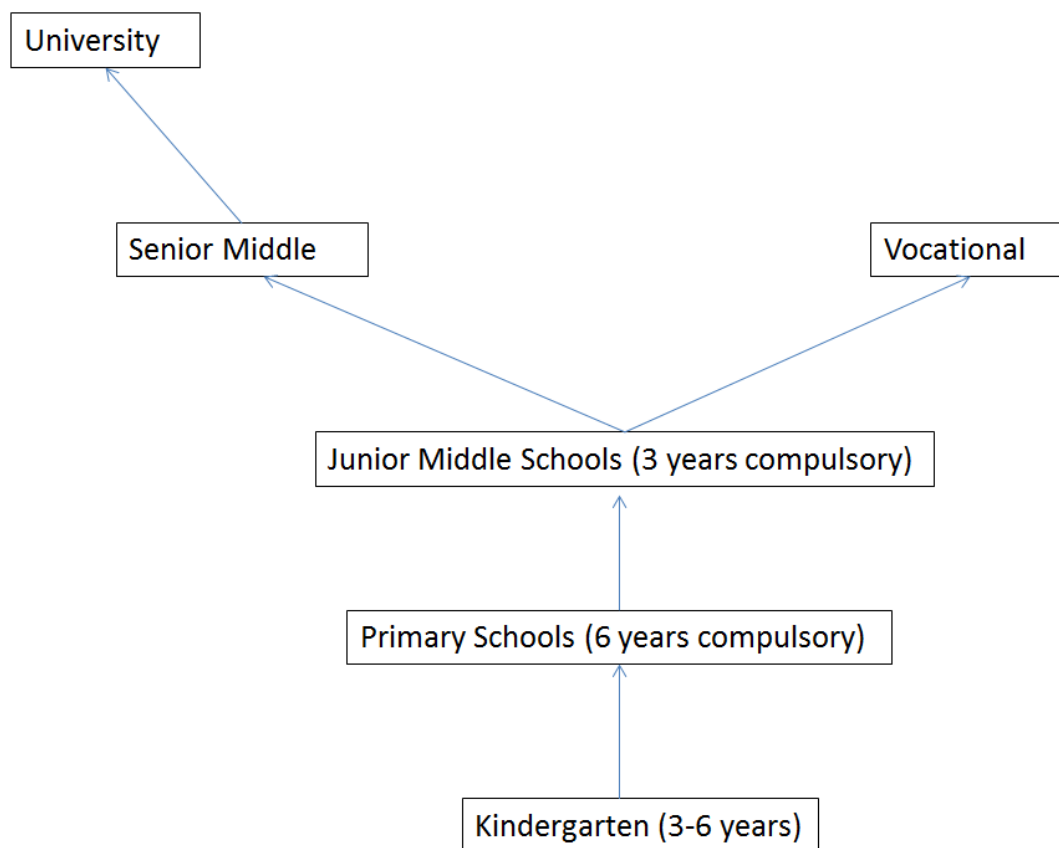


Figure 2.1 A schematic representation of Chinese education (Jin and Cortazzi, 2006:7)

From the perspective of the washback effect, teaching to the test and learning for exams are educational phenomena which are triggered in response to assessment. Usually the higher the stakes in relation to the exams, the more powerful the washback effect will be.

Examinations that focus on factual knowledge are bound to deliver powerful messages to both these test-takers and the teachers, which are pertinent to their concept of learning. Such washback effect greatly promotes the habit of rote-memory learning among the students. For many of them (if not all), learning means remembering what is learnt, which explains the popular practice of intensified memorisation before the exams. The national belief that good memory equals intelligence (Hu, 2004) continues to be strengthened through the exam constructs.

There is no denying that Chinese students' surface memorisation may transfer to deep understanding (Kember, 2004), but the time-consuming effort may have greatly restrained the development of other learning skills. Based on the results of questionnaires and interviews among university teachers and students, Li and Cutting (2011:39) argue that the main reason that rote learning still dominates university English study is that the current testing system rewards accurate memory. Even though there are other academic requirements in their study, like the agendas in education reform mentioned in Chapter One, "most schools are still very exam-orientated and competitive and characterized by high-stakes testing" (Ryan et al., 2009:437). Under such circumstances, encouraging students to read around the subject and developing their analytical ability seem to become secondary, and consequently these skills have to give way to what is tested in the exams.

Apart from the testing system, teaching methods and the impact of individual teachers also play a crucial role in students' learning. You and Jia's (2008) questionnaire results show that a lecturing-receiving (or teacher-centred) teaching mode is still prevalent in university teaching, and this is believed to be connected with the inadequacy in students' creativity, original thinking and exploratory spirit (p.843). Normally, classroom learning is characterised by discipline, concentration, high pace and the intensity of the teacher-centred interaction (Jin and Cortazzi, 1998). The students' expectations of

teachers are characterised by traditional cultural values (Zhang and Watkins, 2007:787).

They regard their teachers as role models in their life:

[T]he teacher is a model of authoritative learning, expert knowledge and skills, and moral behaviour, and should have an answer to learners' questions (Jin and Cortazzi, 2006:10).

With such high expectation on teachers, it is likely that Chinese international students will find it very difficult to accommodate to the differences in the Western universities. A case in point would be that the Western lecturers they encounter are not always willing to put themselves up as the expert. Instead, it is a common practice that Western lecturers would express doubt, or defer to the students' views.

Meanwhile, students are generally seen as passive, reserved, and reticent in China (Hu, 2002; Wen and Clement, 2003; Yu, 2001), trying hard to learn and remember (Jin and Cortazzi, 2006). However, the stereotype is undergoing changes in modern China (Ryan et al., 2009). In a study of Chinese middle school students' attitudes toward learning in Shanghai, Shi (2006) finds that a majority of her participants would not follow blindly when disagreeing with their teachers in class. They would go to talk to their teacher after class. A small group of confident students would raise the questions immediately in class. In addition, there is a sharp increase in students' evaluative attitude towards their teacher as they grow older. About 98% of the participants in Year 10 declare that instead of following their teacher blindly, they would rather follow what is correct, compared with 42% in Year 6. Such growing critical judgement, according to Shi (2006), suggests that "modern Chinese students are showing many characteristics in common with their Western contemporaries" (p.139).

To some extent these contradictory pictures present a fluid and changing picture of Chinese students. Given the uniqueness of China's education system, especially the predominance of big classroom teaching, what has been normally observed is that students are expected to be disciplined and to behave themselves. But the characteristics of their curiosity have usually been overlooked. Although the

generalizability of Shi's findings in China is questionable, because the data were collected in one of the most developed cities of the country, this study does show that Chinese students are capable of expressing different opinions, and interacting with their teachers. Shi (2006:138) concludes that it is a co-existing situation in which, on the one hand, students are still learning in a passive way because they do expect their teachers to give them 'neat' notes and to help them pass exams. But on the other hand, they also prefer their teachers to be their friends and to be more creative in class.

As one of the three key subjects in entrance examinations throughout school education, English teaching and English learning, especially at tertiary level, may provide an insightful picture of China's education system. In the next section, I will first introduce the background of English teaching in China. Then my discussion will centre on the dominant grammar-translation English teaching method, characteristics of the corresponding intensive English textbooks, as well as National College English Tests (CET) at tertiary level, in particular, the reading comprehension test. All these help understand Chinese international students' English learning experience before coming to the UK.

2.2 Teaching and Learning English as a Foreign Language in China

An online drollery betrays the gloomy pedantry to the hilt. A Chinese student drove off a cliff in Colorado. The police came, and then left. Days later, the student died of hunger.

The police yelled downward, "How are you?"

"Fine, thank you," shouted back the Chinese answer, grooved in all textbook.

http://www.chinadaily.com.cn/opinion/2010-03/16/content_9596880.htm

This widely circulating story on the internet mocks the rigidness of English learning in China. Although this student manages a 'perfect' conversation with the police who came to rescue him, his textbook English leads to a fatal consequence. What is implied here is that English learnt in vacuum, although perfect, is of little significance in daily life.

So who is to be blamed for this? Does it suggest the failure of English teaching and learning in school education?

Since the economic reform and open policy in the late 1970s, “English language education has been increasingly given emphasis for its critical role in China’s modernization and individual learners’ access to new socioeconomic opportunities” (Wang and Gao, 2008:386). In 1982, English was considered the main foreign language in high school education (Lam, 2002:247), and in the mid-1990s, English became a compulsory subject in primary schools in China, starting from year 3 (Cheng, 2008:16). Gan et al. (2004) point out that China’s rapid economic development and increasing exchange with Western countries have given rise to a high demand for competent English speakers in a wide range of professions. This situation became more severe once China joined the World Trade Organization and attracted many foreign companies from English speaking countries. In their view, the recent political, economic, and social factors in China are bound to affect English language teaching and learning, or have already affected them (p.232).

Under such circumstances, English teaching and learning manifest great diversity across China. Despite the centralised education system in China – such as teaching Putonghua (Mandarin) nationwide, and the conformity with a certain culture of learning, the emergence of more individualised young people in modern China has resulted in a more complex picture of the English language learning context (Cortazzi and Jin, 1996:174). In addition, geographical locations also bring about variations in English teaching and learning. Compared with the Northern and Western parts of China, more teaching and learning resources are available in the Southern and Eastern parts due to economic development in these areas. That is to say, students from the coastal areas are more likely to be exposed to a better language learning environment than those from inland China. In addition, nearly all urban primary schools start to teach English from

Year 1 now, while in the rural areas, it may begin in Year 3 or junior high school, largely as a result of the shortage of English teachers (Zhao, 2005:6). In spite of the different starting times in English teaching and learning, all students are faced with standardised English tests for their subsequent entrance exams, such as the ones for junior and senior middle schools.

Furthermore, English is the compulsory subject tested in the university entrance exam for all university candidates (Zhao, 2005:6; Cheng, 2008:16-7). Once admitted into university, the first year students are usually placed in different bands based on their English scores in the university entrance exam as their starting point in university English learning (Zhao, 2005:8).

Throughout all these stages, the Intensive Reading Course is taught as compulsory, using uniform syllabuses, textbooks and final exams. The standardised / uniform textbooks used in the Intensive Reading Course, as Cortazzi and Jin (1996:184) claim, are especially designed to focus on teacher explanation: the grammar-translation method. This teaching mode well fits the centuries-old Chinese approach to learning, mainly characterised by rote memory, as described above. The importance of Intensive Reading is, according to Cortazzi and Jin (1996), paramount in that it enables students

1. to read the text aloud (or recite or paraphrase it) with fairly good pronunciation;
2. to learn hundreds, if not thousands, of new vocabulary items with detailed explanations of meanings and to use these new words in exercises through blank filling, paraphrase, word formation and other methods;
3. to learn and to practise certain grammatical points exemplified in the text;
4. to speak on a limited range of subjects related to the texts;
5. to write generally correct sentences, short compositions and do translations based on the content and language of the texts (p.182).

All these features indicate that understanding of linguistic units, especially accuracy in word and sentence comprehension, has been prioritised in these textbooks, which is very likely to give rise to students' text bound processing in their reading. At the end of

senior middle school, English teaching is mainly test-oriented as students are preparing for their university entrance exams (Jin and Cortazzi, 2006:10). At university, English is taught as a compulsory subject for all undergraduates in the first two years, including Intensive Reading, Extensive Reading, Fast Reading, Oral English, and sometimes Basic Writing. Usually one teacher would teach all the above courses if s/he is assigned to teach a particular class, with 4 hours of curriculum time each week for 36 weeks in two semesters each year (Zhang, 2010:328).

English teaching in universities follows the National College English Teaching Syllabus (NCETS). In the latest NCETS (2007) (see Appendix 1) introduced by the State Education Commission, College English teaching consists of three levels for non-English major undergraduates until they graduate: Basic Requirements (BR); Upper Requirements (UR); and Advanced Requirements (AR). As far as the requirements on reading in the NCETS are concerned, students at BR level are required to grasp the general meaning of a text, with a speed of 70 words per minute (wpm), and with a vocabulary size of 4,795 words. In addition, they are also expected to be able to skim and scan when the article is easy to understand, with a reading speed of 100 wpm. At the UR level, students are required to master 6,395 words, and understand the main ideas of English magazines from English-speaking countries, with a reading speed of 70-90 wpm. For fast reading, students are expected to read and understand a literature review in their subject field, with a speed of 120 wpm. At the AR level, students are expected to acquire 7,675 words; to understand English magazines from English speaking countries; and to read English references in their subject field without much difficulty. It can be seen that the range of potentially accomplished levels in the NCETS framework is wide, with regard to undergraduates' reading proficiency. For those who are capable of reaching AR, their competency in reading may help them cope better with their academic study in Western universities. But the great majority of undergraduates, who only manage to

reach the BR or UR level, may have a lot of potential difficulties in terms of their reading speed and their processing ability in academic reading.

Most university English teachers are BA graduates, who studied linguistics, applied linguistics, language, literature, English for Specific Purposes, or English Language Teaching. Only a few have gained their master's degree in the above subjects (Zhao, 2005:8). According to Zhao (2005), due to the shortage of English teachers, these graduates start to teach immediately after graduation. Consequently, their previous learning experiences have a strong impact on their teaching methods in terms of copying their previous teachers' test-oriented grammar-translation methods. In the third and fourth year, subject teachers teach English for Specific Purposes (ESP) in different departments, for 2 hours a week for three semesters. These teachers are chosen either because they are personally interested in English, or because their English proficiency is higher than that of their colleagues. Teaching objectives at this stage mainly focus on understanding the meaning of texts, which accounts for about 80% of the exercises relating to training students in information gathering. The materials for ESP are usually about general science and technology (Zhao, 2005: 8-11). It can be inferred from the above that English learning in China has been mainly characterised by grammar and translation, with little practice devoted to the development of other skills, such as analytical and critical evaluation of what is learnt. It can be also argued that the low requirements of English reading in the NCETS (2007), particularly at the level of BR and UR, may have a negative impact on the development of Chinese university students' English reading proficiency.

In 1987, the first College English Test (CET) was carried out in China by the National College English Testing Committee on behalf of the Higher Education Department of the Ministry of Education. CET consists of a battery of tests, such as the CET Band 4 (CET-4), the CET Band 6 (CET-6), and CET -- Spoken English Test (CET -- SET), with

the aim of assessing undergraduates' English proficiency, and of examining whether they have reached the requirements specified in the National College English Teaching Syllabus (Syllabus for College English Test, 2006:1) (Cheng, 2008:18). The Band 4 test-takers are usually second-year students majoring in any discipline except English, who have completed College English Courses Bands 1 to 4. Those who have passed Band 4 and have completed College English Courses Bands 5 and 6 are allowed to take the Band 6 Test (Zheng and Cheng, 2008).

The reading materials chosen for CET tests, according to Jin and Yang (2006), are mainly argumentative and expository articles, with an average Flesch readability index of 57.7 in CET-4, and 49.1 in CET-6. Reading comprehension in both tests requires test-takers to understand the explicit facts and details, as well as the inferential meaning of the texts, with a reading speed of 70 wpm (p.28). The Flesch Reading Ease rating (from 100 to 0, the higher the index, the easier the text is to read) is an index of the reading difficulty of the text, for instance, *Time* magazine has an index of about 52, which is assumed suitable for an average 6th grade native English student's reading assignment. And the academic journal *Harvard Law Review* has a general readability score in the low 30s (http://en.wikipedia.org/wiki/Flesch%E2%80%93Kincaid_readability_test). As suggested above, if Band 4 is the basic requirement for all undergraduates, with a testing readability index of lower than that of 6th grade students in English speaking countries, this provides an indication of the reading challenges that Chinese international students may have in their master's study. Even the reading level in Band 6 (see above) is much lower than that required for academic reading in Western academia.

As the only nationwide standardised English tests at tertiary level, CET tests have triggered a powerful washback effect in the university setting over the past 20 years (Gu and Liu, 2005). Most universities require a CET-4 certificate as one of the graduation requirements for undergraduates to obtain their bachelor's degree. In addition, teachers'

performance at appraisal, together with their promotion prospects, is standardly linked to their students' performance in CET-4. At the institutional level, the CET-4 passing rate has been regarded as a criterion on which to judge the prestige ranking of universities. In the job-hunting market, the CET certificate holders are always at an advantage compared with those who do not have the certificate (Cheng, 2008:19). With such high stakes attached to CET tests, Weir et al. (2000:2) point out that CET preparation has constituted "the basic grounding stage of the College English Course", in particular, "whatever is examined is practised most in the classroom" (Zhao, 2005:10).

In the light of all these considerations, what are the preoccupations, priorities and assumptions that a typical Chinese student might arrive with in the UK? Firstly, the prevailing practice of using a multiple choice format to test reading comprehension "severely hinders the development of critical and creative thinking in readers, destroying learners' interest in reading in the long run" (Pang, 2008:13). Pang (2008) claims that the impact of such test item design could be so harmful, both on reading instruction and on test-takers, because it reinforces conformity rather than variability in understanding a text (p.13). With the poor English learning environment in China -- limited exposure to English, inadequate English reading materials, and few opportunities of speaking English in daily life (Gan et al., 2004; Zhang, 2008) -- the monotonous multiple choice testing format would build up a shared misconception of English reading among students that reading comprehension is largely related to understanding text meaning.

Secondly, since CET tests mainly focus on examining students' atomistic knowledge about English (Stanley, 2011:194), such testing constructs have trained students to find the only 'correct' answers to any language problems they encounter (Zhao, 2005:10). They are so indulged in all kinds of simulation tests and training classes that they are interested only in those skills which enable them to get high marks, rather than those which improve their linguistic competence (Guo, 2006:15). One popular misconception

on reading comprehension among university teachers and students is that there is no need to read carefully or even understand the passage to find the correct answers (Cheng, 2008:22). This is supported by empirical findings (Cheng and Gao, 2002) that the practice of random guessing without fully understanding the text is very common among CET-4 test-takers. Such testing strategies might help them achieve reasonable scores in the exams, but to what extent do these scores actually reflect their English proficiency?

The above discussion suggests that Chinese international students' unique testing experience in China may distinguish them from other international students upon their arrival, mainly regarding Chinese students' inadequate training on critical thinking in their English reading. Since their English learning in China has been characterised by English tests one after another, it is likely that most of them will tend to focus on factual information in a text and take it at face value, rather than evaluate it critically. Apart from this, these students may experience English language problems as well in their academic study, not only because their exposure to English materials in China is limited, but also because what is available in China is usually too difficult for them to read (Pang, 2008:13). Weir et al. (2000:2) argue that the current education system in China is not equipping students with the necessary skills and abilities to access foreign academic and technical literature through the medium of English, and little attention has been paid to the students' development of language skills and strategies.

Having discussed the deep-rooted socio-cultural impact on the education system in China, as well as the potential difficulties that Chinese international students may encounter upon their arrival in the UK owing to their education experiences in China, I will focus, in the next section, on the UK education system and its learning culture. This will help build up a comparison between the two education systems, and help explore

why Chinese international students find it challenging to accommodate to the UK HE context.

2.3 Education in the UK

In Western education, originality and critical thinking have been highly prized historically. Such influence is believed to be rooted in the Ancient Greek philosophers Socrates and Aristotle (Durkin, 2011:274), whose emphasis on inductive and deductive reasoning and on the role of logic in learning have had a profound impact on Western educational principles (Heath, 1991). Learning to think and valuing the process of thinking have as a result been highlighted in education, and these aspects have been especially embedded in courses on reading and on writing. In the primary curriculum in the UK, it is required that:

pupils should be taught strategies to help them read with understanding, to locate and use information, to follow a process or argument and summarise, and to synthesise and adapt what they learn from their reading. Pupils should be taught the technical and specialist vocabulary of subjects and how to use and spell these words. They should also be taught to use the patterns of language vital to understanding and expression in different subjects. These include the construction of sentences, paragraphs and texts that are often used in a subject [for example, language to express causality, chronology, logic, exploration, hypothesis, comparison, and how to ask questions and develop arguments] (<http://webarchive.nationalarchives.gov.uk/20100823130703/http://curriculum.qcda.gov.uk/key-stages-1-and-2/general-teaching-requirements/index.aspx>). [Last accessed 12th April 2012]

The education system in the UK generally consists of three parts: primary school, secondary school, and university education. School education is basically carried out in the light of a school curriculum guided by the National Curriculum (The National Curriculum, 1999), and separate national curricula operate in the four constituent countries of the UK.

The National Curriculum sets the agenda for teaching and learning in schools regarding the core subjects to be taught and the targets that students are expected to achieve in each subject at four separated Key Stages. In addition, the National Curriculum also

provides seven cross-curriculum dimensions which teachers are encouraged to integrate into their everyday teaching. These dimensions are considered as the key abilities that students need to develop, so that they may be able to cope with challenges in life; these dimensions cover community participation, creativity and critical thinking, enterprise, the global dimension and sustainable development, healthy lifestyles, identity and cultural diversity, technology and the media (<http://www.nationalcurriculum.co.uk/>).

(Last accessed 12th April, 2012)

According to Francis et al. (1983), education in primary and secondary school largely emphasises the learning process of investigation, analysis, and discussion, which values doing and understanding, as well as knowing and remembering. Students are encouraged to identify problems, to find and to evaluate solutions, and to make a decision themselves. Teachers are training students' ability in group learning, together with individual learning skills (p.51). Such learning and thinking skills are specifically required in the secondary curriculum, so that students should be helped "to be able to use high-quality personal, learning and thinking skills and become independent learners, ... and be challenged and stretched to achieve their potential" (<http://webarchive.nationalarchives.gov.uk/20100823130703/http://curriculum.qcda.gov.uk/key-stages-3-and-4/About-the-secondary-curriculum>). [Last accessed 7th June 2011]

Compared with the standardised examinations in the Chinese education system, the biggest difference in the UK testing system lies in the combination of standardised exams and teacher assessment (TA). School assessments throughout the period of compulsory education in the UK are associated with four key stages, which normally involve TA based on day-to-day classroom observation of students' performance on various tasks, like discussion and questioning, as well as their written work (Fowler, 1988:86). Key stage 1 takes place in the second year of compulsory schooling (Y2). It is a combination of TA of English, mathematics and science, and a test on literacy and

numeracy. At key stage 2 (Y6) and key stage 3 (Y9), the assessments are a similar combination of TA and national tests for English, mathematics and science. The assessment at key stage 4 in Y11 is characterised by GCSE (General Certificate of Secondary Education) exams. Teacher assessment at this stage is replaced by a coursework component for each examination, which accounts for between 20% and 40% in each subject (Sweetman, 1995:39).

Even though both education systems (China and the UK) place high stakes on the exams, the practice of integrating TA and a coursework component with standardised testing can be assumed to trigger a different washback effect in the UK. Such a testing mechanism makes it possible for both the teachers and the students to pay attention to the learning process, rather than being dominated by teaching and learning for the tests, as is the situation in China.

During the last two years of secondary school study, from AS to A level (not in Scotland), more emphasis is put on independent learning in classroom teaching. The key strategy at this level is a transfer from teacher-led to student-centred learning (Butcher, 2005:50). The learning skills practised at this stage, such as carrying out a logical discussion, expressing opinions, and effective learning, are not only essential for their study, but also prepare them for their forthcoming university study.

We must provide them with the tools to sustain a logical discussion, explain a point of view – in short, express opinions ...to help them become effective and independent learners and to provide them with the tools to achieve this (Shaw and Anciaux, 1996:9)

When students enter university, teaching at undergraduate level displays a progressive shift from an analytical approach to more critical thinking, along Ballard's (1996) education continuum. University teaching aims at developing students' independent thinking and their ability to handle theory and abstraction. Knowledge is open to question

and criticism. It is the teacher's job to open up any uncertainties or paradoxes in the academic domain. Teachers, instead of being the only authoritative source of knowledge, help students build up their own ideas and judgements (Ballard, 1996:152). In contrast to the textbook-focused and teacher-focused tradition in China, Western education encourages students to engage in independent exploration in their learning (Gu and Maley, 2008:230). This indicates the potential confusion that Chinese international students might experience when they notice the different roles that teachers assume in these two education systems.

At master's level in the UK, critical thinking is one of the core learning skills required of all students (<http://www.qaa.ac.uk/academicinfrastructure/benchmark/masters/MBAintro.asp>)

[Last accessed 10th February 2011], which is interpreted as:

the capacity to evaluate what you read and the capacity to relate what you read to other information. Applying these skills to any academic text involves looking out for its potential strengths and weaknesses (Wallace and Wray, 2011:9).

The focus of education at master's level has switched further from the reproduction of knowledge to originality of academic study, along the education continuum. Students are expected to engage in critical thinking, in line with integrating different information sources. This may constitute another challenge for Chinese international students, in that their previous learning experience may not have equipped them with such learning skills. Jin and Cortazzi (2006:9) argue that Chinese students have been socialized into a culture of learning, in which people are not expected to contribute something new to the field unless they have fully mastered it. As far as the concept of being 'critical' is concerned, these students are most likely to interpret this as not showing proper respect in accordance with their home culture (ibid.:19). In addition, inadequate practice of reading in China may also cause difficulties in students' critical reading. Since school education in China is always centred on the textbooks (Gu and Maley, 2008:230), with

much attention being placed on understanding them (see Section 2.2), such a teaching and learning approach restricts students' academic exploration through reading around the subject. This situation becomes worse when it comes to English academic reading owing to the few English resources available in China. Having limited background knowledge built up for retrieval during reading, these students are unlikely to be in a position to compare what is being read with other information sources, especially with regard to their subject knowledge.

Although memorisation is also required in UK education (Francis et al. 1983), promoting pupils' enquiring minds and their capacity to think rationally constitutes one of the main aims in the primary curriculum². As students move on to higher levels of study, applying other learning skills to their study -- such as logic reasoning, and critical evaluation of previous work -- becomes increasingly important. This student-centred learning helps build up individuals' confidence in expressing their personal opinions, and encourages personal contributions to existing knowledge (Wallace and Wray, 2011:8). Wallace and Wray (2011) argue that Western-educated students are at an advantage in mastering critical reading in their academic study because of their previous schooling experience, while for the non-Western-educated students, it may sound too intimidating to ask what they think (p.8), simply because this has not been required in their previous learning environment.

Because of the differences in education system and academic requirements, I have argued in this section that studying in the UK is by no means a continuation of students' educational experiences in China. As Ballard (1996) points out at the beginning of this chapter, it requires far more than competent English language proficiency to succeed in

² <http://curriculum.qcda.gov.uk/key-stages-1-and-2/aims-values-and-purposes/aims/index.aspx> [Last accessed 12th April 2012]

their academic study. In the next section, I will focus on the accommodation that Chinese international students will be expected to make during their study in the UK.

2.4 Accommodating to the UK HE Context

As social practices, all literacies take place in cultural contexts, and different cultures define and value different social practices (Hu, 2004:632).

The above discussion demonstrates the discrepancies and similarities between the two education systems, as well as the different cultural values which are embedded in them. Although often referred to as “binary opposites” (Ryan and Louie, 2007), the origins of Western culture and Confucianism – in Socrates and Confucius -- bear a lot of similarities, especially with regard to reflective learning and critical thinking.

Nevertheless, unlike Western education, which has integrated Socrates’ ideas into its education system, Confucius’ ideas on thinking in learning are largely overshadowed by his philosophical principles. There are many reasons for this, one of which is probably the inconsistency in his philosophical and educational perspectives. Philosophically, Confucius posits that a harmonious society is built on hierarchical structure, in which everybody should know his place, and hence behave accordingly. To maintain both hierarchical social order and harmonious relationships, people are socialized to strictly follow the unwritten rules of society. One principle, for instance, is that words should be carefully chosen, and dissenting ideas always avoided, even between peers. Within such a social ideology, even though Confucius advocates the importance of reflective thinking in learning, his emphasis on hierarchy and obedience militates against people engaging in critical thinking. Consequently, the Chinese become more likely to prioritise harmony rather than question and challenge. Any disagreement would be regarded as showing disrespect to a senior, which is not the social norm.

In addition, ambivalence towards freedom of thought is also related to the impact of centuries of political history in China, especially the political upheavals in modern China during which free thought and free speech were often severely suppressed. In the education system, the political impact of all this would be reflected in testing constructs. Instead of focusing on personal interpretation and critical thinking, the less controversial factual knowledge would often become what is assessed. As a result, reflective thinking is gradually diminished in the learning process, owing to the washback effect triggered by the tests, with rote learning being further reinforced. All these elements interplay together, and have had a deep impact on Chinese education.

The contrast in education systems between East and West is becoming more and more distinctive, which is illustrated explicitly in Table 2.1 by Ryan (2010).

'Western'	'Confucian'
Critical thinking	Follow the Master
Independent learning	Dependence on the teacher
Student-centred learning	Respect for the teacher
Adversarial stance	Harmony
Argumentative learners	Passive learners
Achievement of the individual	Achievement of the group
Constructing new knowledge	Respect for historical texts
'Deep' learners seeking meaning	'Surface' or rote learners

Table 2.1 A comparison between the 'Western' and the 'Confucian' ways of learning (Ryan, 2010:43)

In this table, Western education is characterised by critical thinking and student-centred learning, within which different opinions and stances are welcome and encouraged. On the other hand, 'Confucian education' highlights the value of harmony. This knowledge-centred learning stresses the face-value of existing knowledge (Wallace and Wray, 2011:8) by following and respecting it, which gives little chance for individuals to express their opinions and different voices. In contrast, Western education is more open

to controversial arguments, and these are even considered essential for academic development. As for the students from 'Confucian societies' (including other Asian countries which have been influenced by Confucianism, like South Korea, Japan, Singapore, Taiwan, and Vietnam), their "learning styles and preferences are largely conditioned by values of collectivism, conformity and respect" (Benson et al. 2003:23), and they are often regarded as passive and dependent learners.

However, this does not necessarily mean that Chinese international students do not have their own strengths, compared with their Western counterparts. According to Wallace and Wray (2011:8), Western-educated students might be quick to pick up critical thinking skills, but they also tend to underestimate the effort of fully understanding the work of others, and tend to overplay these critical skills. On the other hand, Chinese students (or non-Western-educated students) may pay attention to understanding knowledge, but tend to take too much face value without engaging in critical evaluation. Because of their past socialisation in a different socio-cultural context and education system, we need to determine precisely what they bring with them to their academic study in the UK.

Jin and Cortazzi (2006) posit that Chinese international students are very likely to frame their learning within a Chinese culture of learning at the beginning of their academic study in the UK, showing a respect for the teacher and text that often outweighs asking questions and being critical. However, the gap between their past and current education experiences will not only bring about confusion among them, but may also give rise to changing ways of study (p.8-9). In their study on Chinese international students' adaptation to UK universities, Gu and Schweisfurth (2006) reveal the learning shock that these students had when they were first exposed to a student-centred learning environment. Such a shock, Gu and Schweisfurth (2006) argue, mainly arises as a result of three elements: inadequate English language proficiency, unfamiliar teaching

methods, and different learning approaches. Moreover, their shock is accentuated by the contrasts between duck-stuffed learning (sic) in China and free expression in the UK, together with teachers being seen as a model role in China and as facilitators in the UK. Nevertheless, Gu and Schweisfurth's (2006) findings point to successes in Chinese students' endeavour to conquer such learning shock over time, and to develop their independent learning abilities (p.84). This is empirically supported by Spencer-Oatey and Xiong (2006), whose longitudinal study on Chinese students' adjustments to UK university life suggests that the vast majority of Chinese students (about 81%) get used to the teaching methods in the UK over time, and most of them do attach considerable importance to socio-cultural adjustment during their study in the UK. All this suggests that, although Chinese students' dispositions toward certain learning approaches are culturally determined, they can be flexible and changeable (Gieve and Clark, 2005:261).

Adaptations to the new learning environment to meet new academic requirements will inevitably be reflected in students' learning approaches. Empirical studies suggest that a change in learning environment would give rise to students changing in their error correction, developmental sequences, meaning negotiation (Tarone, 2000:193), and also in strategy use due to the new contextual needs (Carson and Longhini, 2002; He, 2002; Gao, 2003). He's (2002) autobiographical account of her English learning experiences indicates that her deployment of learning strategies was subject to change, mainly relating to the demands generated by different socio-cultural contexts. Gao's (2006) study suggests that learning environments not only affect what vocabulary strategies Chinese international students use, but also the frequency with which they use these strategies. If Gao's (2006) study shows the causal relationships between learning environments and Chinese students' strategy use in vocabulary learning, this implies that such causality may be observed in their academic reading as well.

In this chapter, I have explored the differences in the two education systems, and established the necessity for Chinese international students to accommodate to the new learning environment. In order to examine the changes in their academic reading during their study in the UK -- in particular, their changing deployment of reading strategies as a result of their accommodation within the new learning environment -- in the following chapter, I will focus on the mechanisms of academic reading, and the intertwined relationship between readers' cognitive processes and socio-cultural factors.

Chapter Three: A Processing Framework for Academic Reading in L2 English Language

I have argued in Chapter Two that Chinese international students face myriad challenges in UK university study due to the different education systems in China and the UK. In this chapter, I aim to construct an academic reading processing framework that unites cognitive and socio-cultural paradigms in such a way that the impact of socio-cultural factors on L2 readers' cognitive processing is considered to be an integral part of their reading development. At the core of this framework is how to define the key concept of "reading". This chapter begins with a critical review of relevant literature in order to produce a **definition** that is appropriate to the aims, methods and theoretical precepts of the present study. This review will discuss the issue of whether socio-cultural perspectives should be integrated into the study of second language acquisition (SLA). In order to illustrate cognitive processes in academic reading, three reading models are evaluated critically -- the compensatory-interactive model (Stanovich, 1980), the modified interactive model (Grabe and Stoller, 2002), and a reading model (Khalifa and Weir, 2009) -- which help shape the processing mechanism in my framework. Then, the rationale for strategy research is justified in line with Macaro's (2006) cognitive framework for learning strategy in that examining changes in Chinese students' strategy deployment constitutes the key part of this study. In the second part of this chapter, I focus mainly on levels of processing (textbase processing, and situation model construction), and stages of reading development (the interplay between language proficiency, strategy use, and reading tasks). The reason for including this section is that knowledge of variations in reading offers a rationale for the taxonomies to be applied in the forthcoming framework, and for exploring the multifaceted nature of academic reading. Based on the discussion in this chapter, a processing framework for academic reading is constructed, which will be the core theoretical basis in this study to inform data collection and data analyses.

3.1 What is Reading?

If we reflect on the reading process as objective observers, reading appears to be at least as magic as pulling rabbits from hats, conjuring pigeons from coat sleeves, or producing dimes from behind someone's ear (Hudson, 2007:7).

Hudson's (2007) 'magic' metaphor captures the implicitness and complexity of our cognitive processing during reading. Likewise, Grabe (2009:4) contends that the more we explore the nature of reading, the more complex it seems to be. Over the past couple of decades, our understanding of reading has progressed as a result of achievements made in the fields of psychology, cognitive science, and psycholinguistics. Reading theories have been proffered which seek to address various dimensions of reading, such as the interactive processes between linguistic units and reading comprehension; the relationship between reading ability and language proficiency; sequences of reading development; allocations of cognition in comprehension; variations in processing; reading speed, as well as reading strategies. These efforts, as indicated above, have focused on the multifaceted aspects of human cognition, which are closely intertwined during reading processing. Despite these advances, Alderson (2000) posits that an explicit definition of reading is yet to be agreed. "All these aspects of reading are important, but will probably never be brought together into a coherent and comprehensive account of what it is we do when we read" (ibid.: p.1). To examine the nature of reading, I shall, nevertheless, start with some existing definitions:

Reading is seen as a creative and constructive activity having four distinctive and fundamental characteristics – it is purposeful, selective, anticipatory, and based on comprehension, all matters where the reader must clearly exercise control (Smith, 1988:3).

Reading uses both the language of the reader and the writing system that encodes that language. Specifically important are (a) the identification of words and (b) the engagement of language and general cognitive mechanisms that assemble these words into messages (Perfetti et al. 2001:128).

Clearly, the perspectives of Smith (1988) and Perfetti et al. (2001) are mainly based on psycholinguistics, and are largely confined to the reader's cognitive processing, such as making sense of printed language, and piecing together information in a text. What Perfetti et al. (2001) focus on is the reader's language processing: language decoding and information construction, in particular, the interaction between written words and a human's cognition. On the other hand, Smith (1988) highlights the integration of reading purposes and reading processing. This is very similar to Grabe's (2009) "reader purpose' concept", which is about the intertwined relationship between reading purposes and the corresponding cognitive processes. According to Grabe (2009), the "reader purpose" concept contends that cognitive processes during reading are largely determined by differing reading purposes. Each purpose requires a different combination of cognitive processes, which can be grouped collectively as rapid, efficient, comprehending, interactive, strategic, flexible, purposeful, evaluative, learning, and linguistic. These cognitive features characterise the nature of reading (p.13-4).

In contrast, Pearson and Stephens' (1994) and Koda and Zehler's (2008) views on reading, quoted below, have addressed the inter-dependence between cognitive processing and the environmental impact.

'Reading' is ... understood as a complex, orchestrated, constructive process through which individuals make meaning. Reading, so defined, is acknowledged as linguistic, cognitive, social, and political (Pearson and Stephens, 1994:35).

Reading, as a complex cognitive process, involves a number of operations, each of which requires diverse sub-skills for its execution. At the same time, reading development, as a socially constructed pursuit, is shaped and constrained by everyday experiences of members in a particular socio-cultural community (Koda and Zehler, 2008:4).

Although both highlight the cognitive processes of reading, Pearson and Stephens (1994) take on board the readers' contribution to this process, specifically, how readers' social background affects the way they understand written language. In Pearson and Stephens' (1994) view, readers will never end up with identical comprehension because of their intrinsic uniqueness relating to their own background. In a similar vein, Koda and Zehler

(2008) stress the role that environmental mediation plays in reading development. They think that as a social activity, reading is largely affected by readers' personal experience and the community in which they are socialized.

The above four concepts on reading, selective as they are, offer us some insights into different perspectives and theoretical orientations, namely, whether reading should focus only on readers' cognitive processing, or whether reading should be regarded as a situated activity within a specific social context. While it is clear that reading involves cognitive processing in understanding text meaning, the recognition of a socio-cultural role in reading is also overwhelming (River, 1968; Goodman, 1988; Bernhardt, 1993, 2003; Aebersold and Field, 1997). For non-native readers, Rivers (1968:280) claims that reading comprehension reflects the intricate interplay between an understanding of the culture, and of the target language. Since texts reflect the cultural values of a society, variations in reading among people from different socio-cultural backgrounds will be manifested in terms of how and what they read (Goodman, 1988:13; Bernhardt, 1993:10), and whether certain topics are acceptable within a community (Bernhardt, 2003:114).

In L2/FL reading, cultural differences are considered to be the largest category of affecting factors, such as readers' attitudes toward text and purposes for reading; types of reading skills and strategies appropriate in L2/FL; beliefs about the reading process; and background knowledge (Aebersold and Field, 1997:28-32). All these views suggest a link between the social context and variations in reading processing and comprehension. Different socio-cultural backgrounds affect reading, mainly in terms of the knowledge which readers bring to reading, their expectation of reading comprehension, and more importantly, the development of individual readers' cognitive processing as appropriate to meet the specific social demands. Variations in their

cognitive development largely centre around whether reading processing is confined to text meaning understanding, or whether personal interpretation is allowed.

As for ESL students in Western HE contexts, Grabe (2009) argues that their academic reading is influenced by their different education experiences and the different academic requirements. In his view, some students will face disadvantages if they are from a learning environment where there are only limited print resources available, and where texts are regarded as authority, and are only interpreted in certain preferred ways. These students will find it difficult to move to a L2 context, in which they can access abundant information sources, and they are expected to integrate and to evaluate the conflicting information. Grabe claims that these contextual factors will affect these students' L2 reading development (p.170). The issue raised here is very similar to the reading situation of the Chinese international students in this study. Because of their previous learning experience in China (see Chapter Two), their cognitive effort to accommodate the contextual changes in the UK, according to Grabe (2009), will lead to different reading development in their master's study.

If Pearson and Stephens (1994) have emphasised readers' participation in the reading process, Koda and Zehler (2008) address further the interplay between the development of readers' cognitive processing and the social milieu in which reading takes place. This socio-cultural view on reading, to a great extent, reflects an overall developing trend in SLA, which argues that "the study of additional language learning is not only shaped by the social context in which it happens; it is bound inextricably to such context" (Ortega, 2009:217).

To explore why it is essential to integrate the socio-cultural factors in reading, the next section will move on to the new socio-cultural perspectives in SLA, and tease out in what

aspects these new perspectives can add an extra dimension to the construct of reading in this study.

3.1.1 New Socio-cultural Perspectives in SLA

Block (2003) reinterprets the concepts of SLA in a broader socio-cultural context, and points out that SLA, instead of representing second language acquisition, should mean second language Activity. In his opinion, the notion of activity can reflect more appropriately the situatedness of language learning, in particular, the interaction between language learning and the specific environmental impact on learning *per se*. In a similar vein, Ortega (2009) contends that the 'social turn' in SLA is a result of 'the unbearable ineluctability of the social context' (p.217). Social context, in her view, is the key element in understanding language learning, given the inseparability between agents (people involved in learning process) and learning environment. Ortega believes that without the knowledge of a given social context, nothing can be known (ibid.:217-8).

These emphases on social factors in language learning constitute part of the response to the call for reconceptualization in SLA at the end of the last century, which attempts to rectify the "imbalance between cognitive and mentalistic orientations, and social and contextual orientations to language" (Firth and Wagner, 1997:757). This 'wrestling with context' (Tarone, 2000) reflects the confrontation between two paradigms: the traditional and mainstream positivist, and the new and dynamic relativist (Zuenger and Miller, 2006:35). As Atkinson (2002:525) argues, learners in a cognitive paradigm are treated in isolation like the lonely cactus, while the image of a rainforest where all the plants are intricately involved in the ecological system is more like the real picture of language acquisition in social context.

Within the new socio-cultural perspectives, it is argued that cognition is not exclusively confined to the isolated cerebral space. Instead, meaning is constructed interactively

both 'in the head' and 'in the world' (Atkinson, 2002:525-31). For example, reading comprehension can be regarded as a combination of two parts: readers' understanding of the text ('in the head'), and what they are expected to achieve out of the text in that community ('in the world'), or the impact of contextual factors on how text meaning is constructed during reading. It is the interaction between the text meaning and the contextual impact that gives rise to the readers' final interpretation of the text. Such interaction also leads to readers' strategy development in helping them reconcile these two aspects.

As situated cognition in communities of practice (Duff, 2007), learning is considered to be an apprenticeship, where learners start as novices by participating peripherally (Lave and Wenger, 1991). It is by accepting new beliefs, practices, and values that learners gradually develop into competent members of that community (Donato and McCormick, 1994:453; Duff, 2007:310). To understand language learning and language use, therefore, it is essential to gain knowledge of the socially-mediated elements involved in this learning process, such as culture, schooling, learners' performance strategies, situational resources, social negotiations and embodied action-taking (Atkinson, 2002:538; Canagarajah, 2007:923). "If language has a cognitive habitation, such a cognition is shaped, enabled, and realised in social practice" (Canagarajah, 2007:928).

Since language learning and language use arise from dynamic interactions with people and culturally constructed activities (Ellis and Larsen-Freeman, 2006:577), variations in learners' participation in the community activities are closely related to the outcome of second language learning, displaying differences in access, acceptance and accommodation in the new community (Duff, 2007:310). This view addresses two key concepts in language learning: that learners themselves are active agents; and that the learning environment affects learning outcomes. This perspective differs significantly from the cognitive view, which associates learner differences mainly with variations in

learning product in terms of age, gender, language proficiency, personality, motivation and learning style. Language learning, in this regard, seems to depend totally on the learner's own cognitive faculty, with little attention being paid to the learning context. In addition, the psycholinguistic perspective tends to consider learners as ideally generalizable in all circumstances, while the socio-cultural view focuses on real individuals, and approaches them in a more historical and interpretative way (Lantolf and Pavlenko, 2001:143). The ecological system view of language learning (Atkinson, 2002) is clarified by Ellis (2008:242) below:

Language use, social roles, language learning, and conscious experience are all socially situated, negotiated, scaffolded, and guided ... Our expectations, systematized and automatized by prior experience, provide the thesis, our model of language, and we speak accordingly.

What is highlighted above is the importance of contextualisation, in that human mental functions -- memorisation, decision making, concept formation, and strategic orientation toward problem solving – depend on the mediation generated in a specific social and cultural environment (Kozulin, 1990:135).

Nevertheless, there seem to be great discrepancies with regard to what socio-cultural perspectives should encompass (see Figure 3.1). The social perspective proposed by Ortega (2009:216) entails five constructs, which include Vygotskian sociocultural theory, Conversation Analysis, Systemic Functional Linguistics, language socialisation theory, and identity theory. Swain and Deters' (2007) expanded and enriched perspective comprises four influential theories which prioritise the socio-cultural factors: sociocultural theory of mind, situated learning, poststructural theories, and dialogism (p.821). On the other hand, Zuenger and Miller's sociocultural perspectives (2006:38) are constructed in accordance with Vygotskian sociocultural theory, language socialization, situated learning theory, Bakhtinian approaches to language, and critical theory. In spite of these individualised interpretations regarding what underpins socio-cultural perspectives, the

main thrust that these perspectives share in common is about the interdependence between the development of human cognition and environmental artefacts:

all emphasize L2 learning as a highly complex activity in which human cognition and human agency develop and multiple identities are co-constructed through interaction with others, the self, and the cultural artefacts of our environments (Swain and Deters, 2007:831).

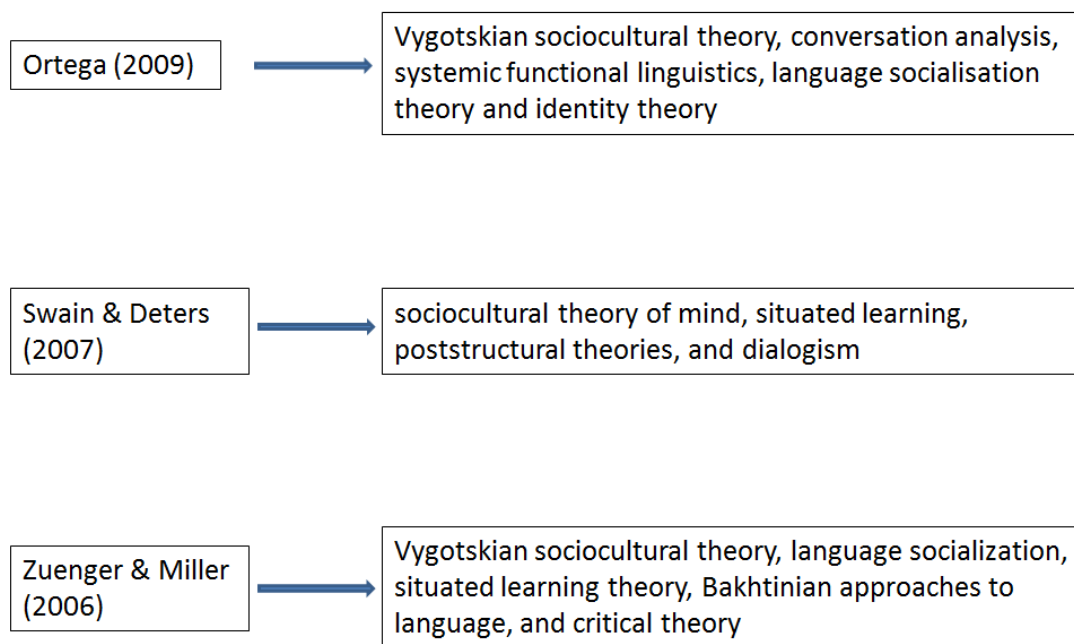


Figure 3.1 Socio-cultural perspectives

Among these theories, it is noted that either Vygotskian sociocultural theory (SCT) or language socialization (LS) is often positioned as the primary framework (Zuenger and Miller, 2006:38) to anchor the socio-cultural or contextual factors in SLA. This is probably because the notions embedded in these two theories constitute the core elements for examining the interactions between cognitive learning and social environment. According to Duff (2007), both SCT and LS emphasise that language learning encompasses various constructs, such as the social, cultural, interactional, and cognitive. In addition, both theories address the important roles that culturally organised activities and interactions play in meaning making and learning. Moreover, both highlight the

scaffolding provided in the community to help novices reach their potential. Therefore, the notion of learning, knowledge-construction, and socialisation in LS is very similar to the concept of the development of mind and socialized individual, which is regarded as mutually engaged processes by members in a community in SCT (p.312).

Given the similarities between these two theories, I will mainly focus, in this study, on Vygotskian social cultural theory (SCT), which will be used as the core theoretical framework to scrutinise how Chinese international students' cognition development in academic reading interacts with their learning environment.

SCT, according to Lantolf (2004), is mainly "a theory of mind" which addresses the dialectic relationship between social milieu and human mental development (Swain and Deters, 2007:821). Vygotsky (1991:40-1) maintains that

All the higher mental functions are interiorised relations of a social order ... Their composition, genetic structure and mode of action, in a word, all of their nature, is social.

Central to Vygotskian SCT are the concepts of mediation, genetic approach, and activity theory, which (explained below) address the complexity of cognitive development both from the social and human perspectives. Within this framework, the social context serves as the source of human mental development (Swain and Deters, 2007:821), while individual learners are agents affected by environmental factors, but also "agents with will" who play a decisive role in the learning process (ibid.: 831).

As far as the concept of mediation is concerned, this refers to establishing the "connections in the brain from outside" (Vygotsky, 1997:55), and it emphasises the role played by human and symbolic intermediaries placed between the individual learner and the material to be learned (Kozulin et al. 2003:1). Vygotsky (1978) argues that the ideas of stimulus-response theory have neglected other aspects of human life, such as the

interrelationships between culture, individual activities, and “higher psychological processes”. It is mediation, he claims, that plays an important part in how activities are constructed in relation to higher psychological processes. Between sociocultural and mental activities, there exists an interdependent and symbolically mediated relationship (Lantolf and Pavlenko, 1995:109), in which sociocultural factors play a central role in constructing the uniquely human ways of thinking (Lantolf and Pavlenko, 2001:143; Lantolf, 2004:31).

According to this concept, cognitive development is regarded as a “transformation of the innate capacities once they intertwine with socioculturally constructed mediational means” (Lantolf and Pavlenko, 1995:109). These mediational means or tools can be either physical or symbolic. Symbolic tools usually refer to symbolic systems, like language, or to people with whom the learners interact, or to objects, such as learning tasks or assessments (Donato and McCormick, 1994:456). For instance, English reading tasks in China are always confined to translation and memorising passages owing to limited resources. As a result, Chinese students’ reading development, in spite of the effort on literal meaning, will be restrained due to inadequate reading practice. The importance of the mediation concept is that it highlights the interplay between contextualised sociocultural processes and human cognitive change (Donato and McCormick, 1994:456).

The second important concept is the ‘genetic approach’, which emphasises the importance of having a historical and developmental view of the inquiry *per se*. This means that, in the case of contextualisation, people are treated as dynamic and changing subjects, rather than static and abstract ones. It assumes that human mental functions depend on the mediation generated in a specific social and cultural context (Kozulin, 1990:135). The only way to understand these functions better is to investigate their genetic origins in a socially and culturally situated activity, and to discover their

dialectical relationship (Lantolf and Thorne, 2006:28). For instance, knowledge about how Chinese international students used to read English in China will be very informative in the context of understanding their academic reading in the UK. Such knowledge helps explain their choice of reading strategies upon their arrival, as well as the developing course in their academic reading during their master's study. This approach views individuals' cognitive development as "constituting and constituted by their social milieu" (Swain and Deters, 2007:823). What really matters is the process rather than the product, in particular, the dynamic elements which are called into play during the developing course of a human's higher mental functions (Lantolf and Thorne, 2006:28-9).

The last important concept in SCT is activity theory, which "conceptualizes human cognition in relationship to human physically and socially motivated activities" (Swain et al., 2011:97). Its main thrust is that the study of human mental functions should focus on human activities, rather than on individuals. As the fundamental unit of analysis, activity constitutes a hierarchical level of human behaviour: activity, action, and operations (Lantolf and Thorne, 2006:216), which is seen in aspects of social practice like the small recurrent dramas playing in everyday life on the stage of home, school, community, and workplace (Tharp and Gallimore, 1988:72). These culturally constructed activities are assumed to result in both positive and negative impact on human cognitive development as argued below by Lantolf and Thorne (2006:213).

In essence, the thought structures of individuals and communities are tied to the social and material conditions of their everyday practice. Situated social interaction connected to concrete practical activity is the source of both individual and cultural development, and in turn, cultural-societal structures provide affordances and constraints that cultivate the development of specific forms of consciousness.

The causality in human action is "a disposition to respond to certain conditions in certain ways" (Harré and Gillet, 1994:120). Therefore, actions are highly motive-oriented (ibid.: 123). On the other hand, operations are the conditions under which actions are taken,

the “real-time in-process means by which an action is carried out” (Lantolf and Thorne, 2006:219). Bødker (1997:150-1) raises three questions to capture the multidimensionality of these entities: “Why does something take place?” “What takes place?” and “How is it carried out?”

In this study, knowledge of Chinese students’ strategy use in these three regards will reveal the multifaceted nature of their academic reading. Their master’s study would require them to read around the subject in order to prepare for assignments (the Why question). This is an activity which involves a series of mini-activities – action chains. These students will have to search for the right materials to read. They will go through the texts, locate the relevant parts and use these ideas to support their own arguments in the writing. Because of the inadequate practice of English reading in China, these students may have different kinds of reading difficulties relating to elements such as too many unknown expressions, unfamiliarity with Western academic writing, slow reading speed, and little subject knowledge (the What question). Under such circumstances (operations), they may have to try various approaches in their reading in order to finish their assignments. Some may use a dictionary during reading so that they can understand what the text is about. Some may read the article carefully from beginning to end, and even translate the key passages into Chinese. Others may read together and figure out the main idea through group discussion (the How question).

The significance of activity theory in language learning strategy research is, as Donato and McCormick (1994) claim, that it provides a framework for analysing strategies in terms of three levels:

object-oriented learning activity (why the learner is using a particular strategy), goal-directed actions (how the learner is going about this task), and the operational

composition of these actions under particular conditions (how the situation shapes, automatizes or de-automatizes strategic actions) (p.455).

Empirical studies (Donato and McCormick, 1994; Gao, 2006; Takeuchi et al. 2007) suggest a link between learners' choice of strategies and the environmental mediation. Both Donato and McCormick (1994), and Takeuchi et al. (2007) contextualise the classroom as a learning community, and explore students' strategy use within such an environment. Donato and McCormick's (1994) findings show that portfolio -- a reflective self-assessment of language learning -- can serve as a catalyst and mediator for developing undergraduates' communicative strategies. Similarly, findings in the study of Takeuchi et al. (2007) indicate that the classroom setting has a great impact on secondary school students' language learning strategy use, mainly in terms of the scaffolding provided by the community (teachers and classmates), and the students' own effort to appropriate the help.

Like Donato and McCormick (1994) and Takeuchi et al. (2007), Gao (2006) focuses on the situatedness of Chinese international students' vocabulary learning, and examines the impact that the learning environment has on these students' choice of strategies. The difference is that, instead of examining these students' strategy use in one environment, Gao (2006) explores their vocabulary strategy use in a developmental way: in China and in the UK. Specifically, Gao (2006) relates three main mediating elements -- discourse, objects (assessment), and agents -- to the changes in Chinese international students' vocabulary strategy use over time. In mainland China, Gao (2006) argues that daily discourse on the importance of English learning is closely associated with the frequency of strategy use among Chinese students. Furthermore, test-dominated English learning and teaching (the objects) largely determine the types of strategies used: test-taking strategies. This situation is reinforced by the help and scaffolding provided by the agents

relating to their English learning, such as teachers, language experts, and parents. Nevertheless, things are completely different when they are studying in the UK. One of the main changes is that standardised tests disappear from their study. Although the same discourse power (they continue to talk about learning English) on the importance of learning English still stands, its impact becomes less influential, and it varies from person to person. For those who are capable of adapting their strategies in English learning, the influential agents become supportive English-speakers on campus. But those who are unable to cope without the help they used to have in China are desperate for similar help in the UK whenever they encounter uncertainties in their study. Gao's (2006) study shows the relationship between the environmental impact and Chinese students' strategy use, and suggests that changes in their learning environment would lead to changes in their strategy use as a result of their effort to meet the new environmental demands.

In brief, socio-cultural perspectives view language learning as a situated social activity. On the one hand, contextual factors largely affect the way in which individual learners learn the language. Such contextual impact can derive from social features such as whether abundant information is available for comparison or whether critical evaluation is expected in reading. On the other hand, individual learners are also regarded as agents involved in the learning process. Their learning outcome is closely related to their willingness to be part of the new learning community, and their enthusiasm to appropriate the scaffolding provided by the community. It is the mutual mediation between the learning context and the learners that brings about the development both in individual's cognition and social artefacts. Nevertheless, this does not mean that the new perspectives ignore learners' cognitive entities. Instead, incorporating socio-cultural perspectives into SLA has enlarged "the ontological and empirical parameters of SLA" (Swain and Deters, 2007:831). The new perspectives posit that language acquisition is multidimensional, which needs to be redefined "as hybrid, fluid, and situated in a more

socially embedded, ecologically sensitive, and interactionally open model” (Canagarajah, 2007:924).

3.1.2 Defining Reading for This Study

The above discussion suggests an unavoidable convergence of cognitive and socio-cultural perspectives in second language acquisition. As a subarea of language learning, understanding of reading also needs to go beyond the cognitive paradigm. The intertwined relationship between the reading environment and reading processing/comprehension becomes ineluctable, simply because socio-cultural values not only affect the way in which individual readers comprehend the text, but also the developing course of their reading ability. Meanwhile, individual readers are active agents who are part of this process as well. The personal experiences they bring into reading comprehension give rise to a corresponding orchestration of processes, and hence to an individualised comprehension outcome. By incorporating these new socio-cultural perspectives, an extra dimension can be added to contextualise the reading activity, which helps us understand why the readers use certain types of strategies, and in what situation they apply these strategies in fulfilling the reading tasks. The impact of personal experiences on individualised strategy use will be explored in Chapter Six.

In this study, both socio-cultural and cognitive factors are considered to be essential in Chinese students’ academic reading due to their particular background: in this regard, we must consider the change in learning environment between China and the UK, the change in English language from EFL to ESL, as well as the change in English reading from ‘learning to read’ to ‘reading to learn’. Given these complex elements involved in their reading context, the definition of academic reading presented below encompasses constructs from both cognitive and socio-cultural paradigms.

From a cognitive perspective, reading is a complex process in which readers need their language knowledge in order to understand and construct the text meaning. Meanwhile, how a text is understood, or the combination of the reader's cognitive processing, is largely determined by specific reading purposes, in particular, whether the reader's processing mainly focuses on literal understanding, or goes beyond the textual information.

From socio-cultural perspectives, reading is regarded as a situated activity in which both the specific social context and readers themselves play important parts. The socio-cultural values embedded in that context will affect the readers' comprehension with regard to what to read in a text and how to read it. On the other hand, the readers' personal experiences may also be involved in the meaning construction process, which leads to an individualised interpretation. It is the mediation of these two kinds of elements – environmental and personal -- that determines how a text is consequently comprehended.

In this section, I have argued that it is essential to incorporate both socio-cultural perspectives and cognitive constructs in defining the concept of reading. The following section will explore in depth the cognitive mechanism of reading processing, in particular, how to account for readers' previous background knowledge. My critical review of the established reading models, especially the interactive models of Stanovich (1980), Grabe and Stoller (2002), and a reading model by Khalifa and Weir (2009), will shed light on my construction of the processing framework for academic reading at the end of this chapter.

3.2 Interpretation of Processing Mechanism: Reading Models

Most reading models are constructed on the assumption that reading comprehension is carried out through a series of components of skills and abilities which are integrated

simultaneously into this comprehending process (Grabe, 2009:84). Among the three reading models to be reviewed below, both Stanovich's (1980) compensatory-interactive model and Grabe and Stoller's (2002) modified interactive model focus only on L1 English reading. The reasons for including L1 reading models and L1 reading theories in the following sections are that, for one thing, our understanding of reading comprehension is primarily from findings in L1 reading (Hudson, 2007:31; Grabe, 2009:1). For another, the basic comprehension processes are generalizable across L1 and L2 contexts in that these basic cognitive processes operate in consistent ways across languages (Grabe, 2009:1). In order to construct a robust academic processing framework for this study, it is essential to gain knowledge of how L1 reading processes operate, especially the theories focusing on different reading proficiencies. Such knowledge will help me predict various possible reading situations among Chinese students in this study.

Stanovich's (1980) compensatory-interactive model mainly addresses the mechanism of reading processes when reading becomes impeded. It is hypothesised that reading entails information processing from all knowledge resources. If processing at any level fails to be incorporated into this comprehension process, this will be compensated for at some other level (Stanovich, 1980:36). Stanovich (1980) believes that poor readers tend to display a wider range of resources in their reading, such as using more context clues or background knowledge to compensate for their deficiencies in linguistic knowledge.

Clearly, this compensatory-interactive model has been constructed on the assumption that the reader will always have the relevant background knowledge. What has been overlooked is the possibility that the reader does not have any knowledge relating to the textual content, or to the rhetorical structure. In addition, Stanovich's (1980) view on compensatory interaction between decoding linguistic units (bottom-up processing) and using background knowledge to facilitate comprehension (top-down processing) is

contradicted by information theory (Ericsson and Simon, 1987). In this theory, all the newly processed information, in sequential order, goes into short-term (working) memory (STM), which has only limited capacity (p.25). That means that if too much capacity is given to word decoding or language understanding, little capacity will be left in STM for other processing (Grabe and Stoller, 2002), such as integrating other information sources, and evaluating the text. Meanwhile, if a reader is incapable of engaging in proper top-down processing (e.g. owing to a lack of relevant background knowledge), it is very unlikely that this will be compensated by his/her bottom-up processing, because the information grasped from the text cannot be converted into background knowledge spontaneously from STM. The information needs time to be transferred to the long term memory where background knowledge is stored and activated (Ericsson and Simon, 1987). Therefore, this model may be more appropriate for describing the reading process when readers are still stumbling with language problems. Even if the deficiencies can be compensated for at any level, they are likely to be executed in a top-down manner, rather than in a bottom-up way. It is the smaller and more specific units that are compensated for by the bigger and more abstract ones. Specifically, readers use their background knowledge to compensate for impediments at the level of word decoding, or sentence understanding, or text meaning construction.

From a theoretical point of view, Stanovich's (1980) compensatory-interactive model helps explain reading processes in L2 academic reading when language processing starts to falter. Because of deficiencies in their English language, L2 readers will turn to contextual clues for help. If compensation cannot be made at the syntactic and rhetorical structure level, then the reader will shift to background knowledge. Stanovich (1980) regards such top-down processing as a facilitative approach when the reader is inhibited by language decoding. This model demonstrates the processing loops and interactions between linguistic units and the reader's background knowledge.

If Stanovich's (1980) compensatory-interactive model explains reading processing when readers are still 'learning to read', Grabe and Stoller's (2002) modified interactive model attempts to plug the gap so far as automatic reading is concerned. They contend that when the readers' language processing becomes smooth and automatic, the freed working memory enables them to engage in other tasks relating to specific reading purposes, for instance, integrating multiple viewpoints, and evaluating the text/writer critically (p.33). This modified model illustrates cognitive processing in an academic context, based on the assumption that readers have achieved automaticity in their language processing. It represents the 'reading purpose' concept: how various reading purposes dominate the combinations of cognitive processes; in particular, the collaboration between top-down processes and the specific reading task. The reading concept delivered by this modified interactive model fits well into this study, in that it addresses readers' flexible and strategic reading in an academic context. Nevertheless, since this model only addresses the possible top-down processing, it has limited itself to the reading situations of the stronger readers, but not those who may still struggle with language processing.

Unlike Stanovich (1980) and Grabe and Stoller (2002) whose models are about L1 English reading, Khalifa and Weir's (2009) reading model attempts to tap L2 reading at an advanced level (see Figure 3.2). This model incorporates reading purposes with cognitive processing and the relevant knowledge base for information processing. To some extent, this model specifies the notion embedded in the modified interactive model (Grabe and Stoller, 2002), and Grabe's (2009) 'reading purpose concept'. As illustrated in Figure 3.2, the goal setter in the left column covers two types of reading: careful and expeditious reading executed either at the local (words or sentence) level, or at the global (paragraph or text) level. Meanwhile, this goal setting process accommodates comprehension monitoring, which decides when actions are needed to repair faulty comprehension. This decision-making then passes on to cognitive processing, and is

immediately coordinated with both bottom-up and top-down processing. Bottom-up processing starts with visual input and involves word recognition, lexical access, syntactic parsing, and propositional meaning establishment. Background knowledge for this stage is mainly concerned with phonology, orthography, lexical form, lexical lemma, and syntactic knowledge. Top-down processing, on the other hand, consists of inferencing, and intertextual representation. The knowledge engaged in the top-down processing involves general knowledge of the world, topic knowledge, and text structure knowledge. The reading process, according to this model, is an interplay between three elements: reading purposes and monitoring, cognitive processing, and knowledge base.

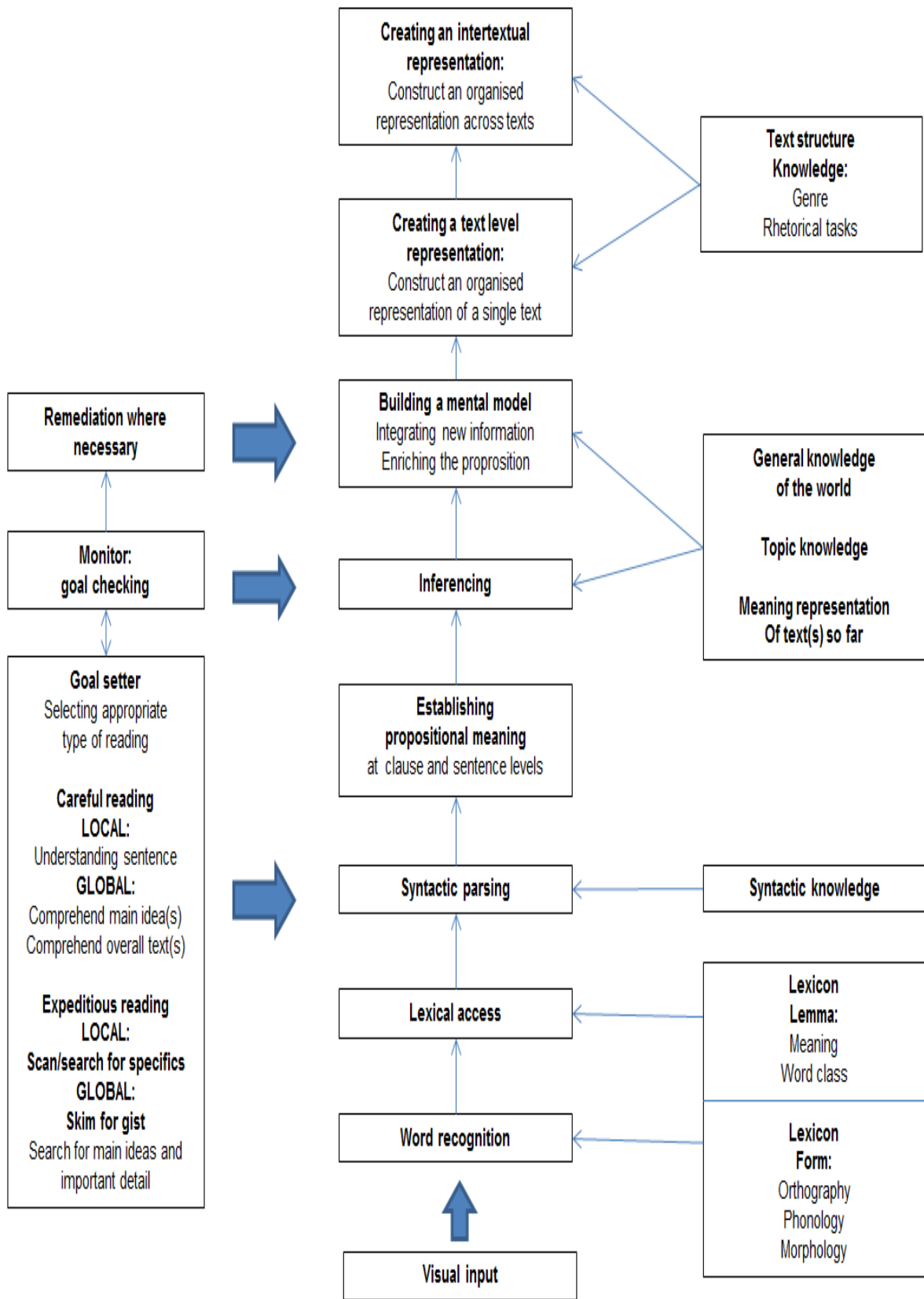


Figure 3.2 A model of reading by Khalifa and Weir (2009:43)

There are several features which characterise this reading model. For one thing, it incorporates different types of reading with reading processes, relating to careful reading and expeditious reading, as well as their sub-entities at local and global levels. Such a distinction examines effectively variations in academic reading, especially the specific goals, such as understanding sentences, comprehending the main idea(s), scanning /searching for specifics, skimming for gist, and searching for the main ideas and important details. For another, it is also the first model which explicitly addresses levels of processing in reading. It provides an exhaustive repertoire of cognitive processing, in particular, bottom-up processing, which is very similar to those in the compensatory-interactive model by Stanovich (1980). What distinguishes this model from the rest is its inclusion of hierarchical meaning construction, for example, proposition building, text representation, and intertextual presentation.

Nevertheless, the cognitive processing presented in this model progresses in one direction, namely, from bottom to top, which starts with the smallest linguistic unit, and leads up to the biggest abstract meaning representation. Such one-way processing seems to have neglected the fact that text meaning is constructed through interactions between levels within bottom-up processing, between bottom-up and top-down, and even between the reader and the author (Stanovich, 1980; Grabe and Stoller, 2002). As suggested by Stanovich's (1980) compensatory-interactive model, poor readers would display more regression in their reading because they need more textual cues to compensate for their linguistic deficiencies in reading. Expert readers, despite their automatic decoding, would also jump back and forth to piece together text information (Wyatt et al., 1993:56), rather than reading from beginning to end in a linear way. In addition, the distinctive functions of background knowledge seem to be oversimplified in cognitive processing. There is no doubt that inferencing and integrating new text information to the mental model requires both general world knowledge and topic

knowledge. But it seems legitimate to assume that these types of knowledge are also needed to compensate for deficiencies at any other level(s).

Even so, this model is of great significance in academic reading. For one thing, it well establishes the concept of levels of processing during reading, in which bottom-up processing is the foundation of top-down processing. For another, it demonstrates explicitly that reading processing is not restricted to the reading text itself. This idea is essential in that accessing and processing large amounts of information from different resources is the precondition for comparing and evaluating critically various points of view (Grabe, 2009:170; Wallace and Wray, 2011:9-10). Furthermore, this model demonstrates the dynamics and fluidity of the reading process, which is closely interwoven with reading purposes, comprehension monitoring, and background knowledge. Unlike the previous reading models which assume that reading is monolithic, the four reading types described in this model manifest versatility in academic reading. Above all, this model provides a solid theoretical framework for this study as it explores the multidimensionality of academic reading.

From what has been discussed above, it seems that all these reading theories and reading models are trying to capture one, or part of, a common feature of reading: the intricate relationship between reading purposes, reading processing and a reader's language proficiency. It is a complex mechanism, in which the orchestration of cognitive processing largely depends on reading purposes. On the other hand, a reader's language processing ability also has a decisive role in determining which level their processing is able to achieve, as well as the combinations of actual cognitive processing.

However, none of these models specifically addresses the reader's conscious effort engaged in the comprehension process, such as searching for compensatory resources and monitoring comprehension. In the next section, I will focus on my justification for

exploring a reader's mindful and deliberate cognition during reading: their conscious deployment of reading strategies. This will provide a rationale for my investigating Chinese students' reading strategies in their academic reading.

3.3 Reading Strategy Research

The study of reading strategy is a sub-area of strategy research in language learning, which began in the 1970s and 1980s (Rubin, 1975; Stern, 1975; Naiman et al., 1978; Tarone, 1980; Wenden and Rubin, 1987). In the past decades, strategy research has gone through shifts in research interest, from what good learners do to learners' reaction to situated tasks, and from counting the frequency of strategy use to establishing the effects of strategy deployment (Grenfell and Macaro, 2007:23). Nevertheless, it is argued that most of the strategy definitions are generated mainly by individual demands to meet a specific research need (Hassan et al., 2005), which are considered to be inconsistent and elusive in concept (Dörnyei and Skehan, 2003). These views are illustrated by the following definitions.

special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information (O'Malley and Chamot, 1990:1).

specific actions, behaviors, steps, or techniques that students use to improve their own progress in developing skills in a second or foreign language. These strategies can facilitate the internalization, storage, retrieval, or use of the new language (Oxford, 1999:518).

Learning strategies include any thoughts, behaviors, beliefs, or emotions that facilitate the acquisition, understanding, or later transfer of new knowledge and skills (Weinstein et al., 2000:727).

The obvious weakness in these definitions, according to Dörnyei and Skehan (2003), is that a strategy cannot be simultaneously neurological, cognitive, and behavioural. If that were the case, the scientific definition of a strategy would need a coherent neurobiological account of behaviour, which, in their view, has yet to be produced (p.457). The reason for a lack of a valid construct of strategy is that a theoretical framework for strategy research is still unavailable (Dörnyei, 2005:170). This suggests that little

progress has been made since Ellis (1994) pointed out that studies in strategy research “tend to be ad hoc and atheoretical” (p.533). The conceptual fuzziness and theoretical problems probably stem from the research focus in the early stages, when great emphasis was placed on what methods good learners use, and how the strategies elicited from good learners could be taught to help poor learners. The weaknesses of such an agenda are that, for one thing, “linguistic behaviour overlaps with ‘learning strategies’” (Grenfell and Macaro, 2007:14). For another, since “different investigators ‘trawl’ in different ways” (Skehan, 1989:98), they introduce non-standardised definitions of strategies (Hassan et al., 2005) and “a research-then-theory perspective” (Skehan, 1989:98). One impact of not having an established framework in strategy research is that it is almost impossible to synthesise the robustness of previous strategy studies, owing to their individualised definitions and distinctive theories.

Another problematic issue existing in strategy research is that traditional strategy instruments, especially the most used inventory (the SILL, Oxford 1990), are flawed in design, because items for tapping specific strategy behaviours are measured on a frequency scale (Dörnyei, 2005). For instance, the 5-point rating scales ranging from ‘never or almost never true of me’ to ‘always or almost always true of me’ in SILL, in Dörnyei’s (2005) view, instead of rating the more specific and corresponding strategy in each item which SILL aims to target, only tap the more general and prominent facets of the learning process. In other words, there is a mismatch between item wording and the rating scales, which consequently gives rise to problematic data calculation. Because behavioural-oriented items are not cumulative, they cannot be assumed to form a linear relationship between individual item scores calculated by frequencies (p.181). All this indicates that two different types of cognition have been mixed up in the construct of strategy: learned strategic behaviour and situated strategic learning. It has been taken for granted that strategy use and strategic learning are assumed to have the same

underlying trait (Tseng et al., 2006:82), which is considered to be “psychometrically not justifiable” (Dörnyei, 2005:182).

Among all these issues -- atheoretical framework, arbitrary definitions of strategies, the fuzzy entities of strategies, and the unjustifiable psychometrical features of traditional instruments -- the most fundamental one is that current strategy research is incapable of answering the question:

What exactly is the difference between engaging in an ordinary learning activity and a strategic learning activity? That is, what is the difference between the processes of *learning* and *learning strategy use*? (Dörnyei, 2005:164).

In order to establish the robustness of strategy research, the next section will first clarify, and then define two key concepts within the context of my study -- strategy and skill – in line with a critical review of the existing taxonomies.

3.3.1 Skills versus. Strategies

It has long been noted that there is hardly any consensus in the literature on the definitions of strategy, in particular, the relationship between learning skills and learning strategies. Some people consider them to be different in nature (Macaro, 2006; Afflerbach et al., 2008; Urquhart and Weir, 1998), while others argue that they are transferable (Alexander and Jetton, 2000; Anderson, 2009; Grabe, 2009; Grabe and Stoller, 2002). For the ‘distinctive’ group, skills and strategies differ fundamentally from each other in various regards. Afflerbach et al. (2008:366) contend that they have different theoretical origins, and that they also demonstrate different practical performances. Theoretically, skills are rooted in behavioural learning theories which describe routine habits and activities, while strategies reside in information processing theories, which are more mindful and conscious. In practice, reading strategies

are deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings of text. Reading skills are automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved (Afflerbach et al., 2008:368).

In a similar vein, Macaro (2006) posits that the differences between skills and strategies lie in their locations in the human brain and in their functions in language learning. In his view, skills are located in long-term memory. These skills comprise learners' abilities to complete language tasks which are summative and measurable. On the other hand, strategies remain in working memory where capacity is limited. They are goal-directed cognitive behaviours that occur in sequence, and they are both transferable across tasks, as well as being situation-specific (p.327-329).

Like Macaro (2006), Urquhart and Weir (1998) contend that reading strategies are a reader's conscious efforts to solve problems during the reading process, such as failing to get the gist of a passage or of a proposition in a paragraph. They are reader-oriented. As for reading skills, these refer to the automatized decoding of text, such as word recognition and syntactic parsing. They are basically text-oriented. The common feature shared by this group is that skills are characterised as readers' language decoding techniques. They are automatic and unconscious when applied to processing text information.

In contrast, the 'transferability' group believe that less difference exists between these two terms than people have argued (Grabe, 2009:221). For them, the difference arises from automaticity relating to "whether the reader consciously evokes the procedure or is simply functioning in a typical, automatic way" (Alexander and Jetton, 2000:296). The automatized information processing techniques are skills which allow the reader to complete a task effectively and effortlessly. Because of their automaticity, skills enable a reader to limit the processing demands on cognitive resources (Alexander et al.,

1998:135). Meanwhile, strategies are cognitive processes which entail the features of being deliberate, purposeful, and regulative (Zhang, 2010:325). This 'transferability' view is explicitly illustrated by Anderson (2009:133):

A skill is a strategy that has become automatic. As learners consciously learn and practice specific reading strategies, the strategies move from conscious to unconscious, from strategy to skill.

In this regard, automaticity is the only criterion that places skills and strategies at each end of the continuum. It is through practice that transferability occurs between them, from the mindful strategy side to the effortless skill end. Grabe (2009:221) posits: "Strategies are cognitive processes that are open to conscious reflection but that may be on their way to becoming skills".

Although discrepancies exist between the 'distinctive' and 'transferability' perspectives, overlapping concepts pertinent to skills and strategies are clear. Both groups hold that reading skills are automatic language decoding and comprehension processes, while strategies are goal-directed, effortful cognitive processes. In addition, strategies are systematic, and are always functioning in groups (Macaro, 2006, Grabe, 2009, Anderson, 2009). That is to say, strategies are used in combinations rather than in isolation when learners approach a task. However, deployment of strategies alone does not necessarily bring about good performance (Afflerbach et al. 2008:369). To be a strategic and successful reader, one requires constant negotiation between the goal, the strategies, and the connection between them in each situation. In addition, one also requires an appropriate balance between the automatic use of reading skills and the conscious employment of reading strategies, as well as an ability to shift smoothly between them as reading tasks change. Afflerbach et al. (2008:368-371) argue that the ability to change control for strategy use signifies an important part of reading development.

3.3.2 Theoretical Framework for Learning strategies by Macaro

As far as the argument about the lack of an established theoretical framework in strategy research is concerned (Ellis, 1994, Dörnyei and Skehan, 2003, Dörnyei, 2005, Tseng et al., 2006), this seems not to be a matter of inadequacy so much as many theories existing in different domains, or in cross-disciplinary combinations (Cohen, 2007). The theories used in previous studies, according to Cohen (2007:30-1), come from educational psychology, cognitive psychology, cross-cultural psychology, information-processing theory, sociocultural theory, and social constructivist theory. Among them, the most detailed and exhaustive illustration of the mechanism of strategy use is Macaro's (2006) Cognitive Framework for Learner Strategies (see Fig 3.3).

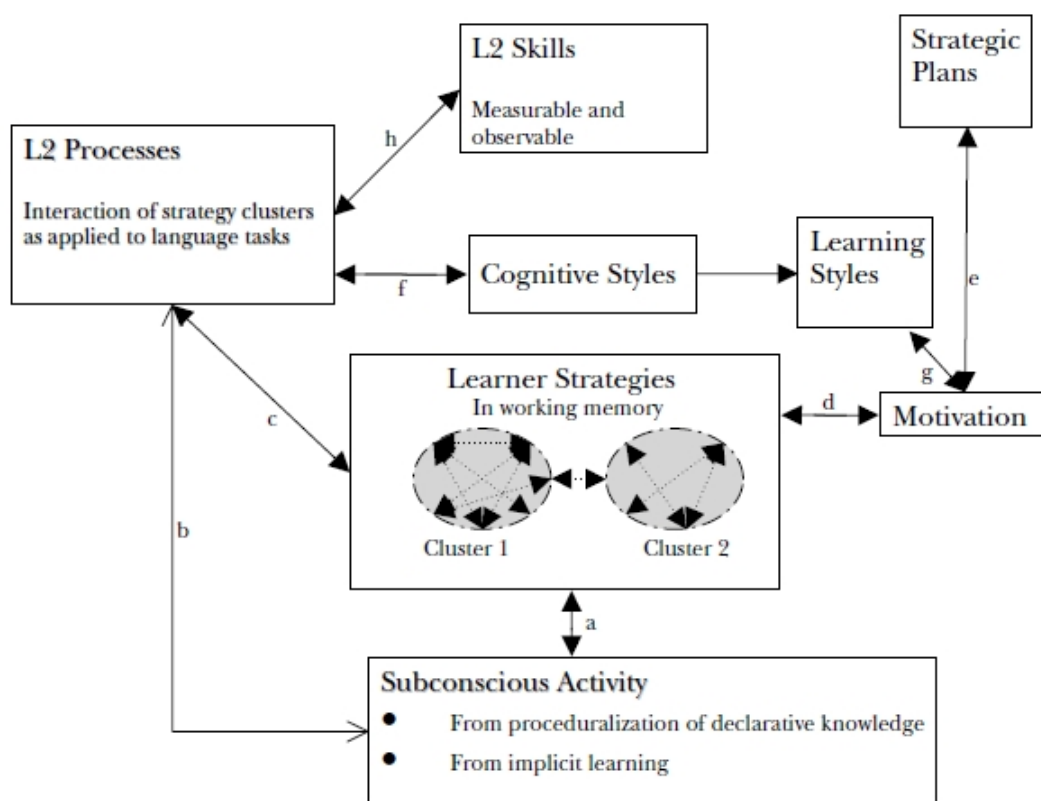


Figure 3.3 A Cognitive Framework for Learner Strategies (Macaro, 2006:326)

Macaro (2006) maintains that the theoretical underpinnings of strategy research encompass both cognitive psychology and information processing. Within this

framework, learning strategies are defined as conscious mental activities located in working memory, which are used together with a goal and a learning situation (ibid.:327). Macaro (2006) also argues that effective strategic learning always demonstrates clusters of strategies. L2 learning occurs through interactions between strategic learning in working memory and knowledge acquisition in the long-term memory. In this regard, learning is considered to be an interactive process between using clusters of strategies and language processes, which in turn contributes to skills automaticity. It is through such interactions that a learner's language knowledge and language performance improve. Since strategies are task-based, they are changeable in nature. Variations in combinations of strategies largely depend on the uniqueness that a task demands. In Macaro's (2006) view, strategies alone are not directly linked to efficient learning. They are the essential raw materials which constitute an integral part of learning process (p.332).

Macaro's (2006) framework clarifies the fuzzy zones which have long existed in strategy research. It is of great significance that this framework defines explicitly the location of learner strategies, as well as their relationship with other variables involved in the learning process. This framework provides a solid theoretical perspective in which the mindful and conscious features of strategies are justified, together with the concept of transferability from strategies to skills. It is also significant that this framework is built on an integration of different theories. As discussed at the beginning of this chapter, the nature of reading is so complex and multidimensional that it is more likely to capture this dynamic and hybrid process from various perspectives. Otherwise, the study of strategy will be confined to one dimension only. In addition, the emphasis on the quality of strategy use, rather than quantity, underpins the issue of what strategies to use, and when and where to use them. It is the effective combinations of strategies for a specific task that lead to satisfactory comprehension. Nevertheless, the reading definition in section 3.1.2 suggests that both the cognitive and socio-cultural elements will be called

into play during reading. That is to say, while the concept of strategy combination enables us to gain holistic information about a reader's cognitive processing, the socio-cultural factors which interplay in this process are missing.

This study will adopt Macaro's (2006) view because it provides the most comprehensive and robust theoretical framework for strategy research. Since measuring the development of Chinese students' strategy use constitutes the core element in this study, the notion that strategies are located in working memory justifies the rationale for scrutinising a reader's strategy use by using think-aloud. According to information processing theory (Ericsson and Simon, 1987), newly processed information directly enters working memory. It may then be that, compared with those who read silently, verbalising mental activities in working memory during reading will not alter normal cognitive processing (p.32). (Detailed discussion will be carried out in Chapter Six.) From a theoretical perspective, Macaro's (2006) framework strengthens the methodological validity of the verbal report, which enables us to offer a plausible explanation of the "Outside-Inside Problem" posed by Stevick (1990) who argues that "no clear relationship exists between external acts and the mental constructs to which they are attributed" (p.144). In addition, the distinction between strategy and skill, in Macaro's framework, largely resembles Anderson's learning theory (1983, 1985), in which learning and using strategies start as rule-bound declarative knowledge. It is through the repeated interaction of strategy use and learning tasks during reading that the automatized process is accelerated. Consequently, conscious and mindful strategic knowledge becomes proceduralised, and reading skills become automatic.

In this study, the definitions of reading skill and reading strategy are presented in the light of the above discussion. Reading skills refer mainly to automatic language processing proficiency at the levels of grapheme-phoneme association, lexical decoding, and syntactic parsing. Reading strategies, on the other hand, reflect the reader's cognitive

processing resources that are available for retrospection. Reading strategies are conscious and effortful cognition focusing on meaning construction. Given the fluid and complex nature of reading, reading strategies are very likely to be deployed in groups, either triggered by linguistic deficiencies, or by the need to make sense of textual meaning, or to interpret text information. Strategies can be applied at any processing levels, thus serving to facilitate comprehension. Meanwhile, reading strategies alone will not bring about satisfactory comprehension. Strategy use is closely intertwined with reading purposes, readers' language proficiency, and their comprehension monitoring. As with levels of cognitive processing, there should be a corresponding orchestration of strategy combinations, and a constant shift in these combinations as reading tasks change. The idea of clusters of strategies enables us to examine the allocation of the reader's cognitive resources during reading, and also enables us to study the general reading patterns among a cohort. (Analysis on clusters of strategies will be conducted in Chapter Six.) In addition, the issue of learning context and learner variables indicates the necessity of contextualising strategy research so that the multidimensionality of reading can be well explored.

In the next section I will continue to investigate levels of processing and comprehension, in particular, the concepts of higher/lower levels of processing, textbase, and situation model construction. These concepts are a useful starting point in academic reading research because they break down general cognitive processing into specific dimensions, and examine whether the reader's understanding is mainly at the level of text meaning, or largely at the level of combining textual information with specific reading purposes: situation model construction.

3.4 Levels of Text Processing And Comprehension

It has been noted that different readers may get different meanings out of the same sign (Smagorinsky, 2001:139). Perfetti (1985; 1986; 1997) argues that such comprehension

variations largely arise from individual differences. According to Perfetti (1986, 1997), individual differences primarily stem from differing abilities with regard to lexical access and working memory. Lexical access constitutes the foundation of building up textual information. For less skilled readers, their problems lie mainly in inadequate word decoding, which consequently gives rise to overloaded information processing in working memory.

Because higher level text integrative processes depended critically on the quality of initially established word representations, failures to establish quality representations would lead to comprehension failure downstream (Perfetti, 1997:342).

Gray (1960) distinguishes three levels of comprehension: reading the 'lines', reading between the 'lines', and reading beyond the 'lines'. Metaphorically, these represent three different hierarchical levels of comprehension: literal understanding, inferred interpretation, and synthesised evaluation. Alderson (2000) argues that these three levels of understanding correlate closely with the way in which information is processed. Literal meaning is decoded in a bottom-up way, and is supposed to be at the lowest level. Making inferences and evaluating critically involve higher-level processing, and evaluating critically is considered to be the most challenging. In addition, it is assumed that the hierarchy of difficulty matches the sequences of reading development: readers first learn to decode the meaning of printed language, and then start to infer the implied meaning. The ultimate goal is to evaluate text critically. Nevertheless, such distinctions of understanding lack empirical support (p.8)

In contrast to Gray's distinction, the concepts of textbase and situation model construction are able to reflect more precisely the levels of processing, and consequently, these concepts have become more prevalent in reading research (van Dijk and Kintsch, 1983; Kintsch, 1988; 1998; Perfetti et al., 2001; Kintsch and Rawson, 2007; Verhoeven and Perfetti, 2008; Grabe, 2009). According to Goldman et al. (2007:32), "The textbase

captures the referential and intra- and inter-sentential relations among the words in the text". It is a mental representation of text propositions, which are built up progressively by successive sentence meanings, and supplemented by inferences where necessary, in order to make the understanding of the text coherent (Perfetti et al., 2001:134; Verhoeven and Perfetti, 2008:296). Because textbase processing is characterised by the linguistic level of representation and the literal meaning of the text, comprehension at textbase level is "shallow", and "not for deeper understanding" (Kintsch and Rawson, 2007:211). The situation model, on the other hand, refers to a new construction of meaning based on the integration of text-derived information with some larger structure, such as reading purposes, and a reader's prior knowledge (Kintsch and Rawson, 2007; Goldman et al., 2007; Verhoeven and Perfetti, 2008). The situation model requires a reader to "engage internal cognitive processes and knowledge resources that distil main ideas from the text on the basis of reader goals and task assignments" (Grabe, 2009:198).

The concepts of textbase and a situation model, to some extent, are similar to Gray's levels of comprehension. Textbase understanding corresponds to 'reading the lines', in that building up textbase involves repeated procedures of processing each proposition unit in the sentence, and then connecting them together in a coherent and logical way. A situation model construction requires elements other than textbase meaning, for instance: making inferences based on personal experience; knowledge of the world; and accommodating reading processing with reading purposes. In academic reading, situation model construction is task-oriented, equivalent to the concepts of 'reading between the lines' and 'reading beyond the lines'. These two concepts clarify the difference between understanding the text and interpreting the text. They are, therefore, more approachable and measurable in practice.

Other binary terms to describe different levels of processing are lower-level processing and higher-level processing, which are pertinent to language decoding and information construction. Like bottom-up processing, lower-level processing mainly concerns language understanding from the bits and chunks to meaning construction. This includes decoding orthographic and phonological features, lexical access, syntactic parsing, semantic proposition formation and working memory activation. As for higher-level processing, this encompasses textbase comprehension; a situation model construction; background knowledge use and inferencing; and executive control processes (Grabe and Stoller, 2002:20). Although these two levels of processing require different cognitive effort, both lower-level and higher-level processes are of equal importance in comprehension (Grabe, 2009). Higher-level processing is carried out in accordance with the input information of lower-level processing, without which there would be a risk of random concept-driven comprehension. On the other hand, if reading is mainly dominated by lower-level processing, final comprehension tends to be superficial and one dimensional.

The concept of levels of processing and comprehension breaks down reading into different parts, and it enables us to examine reading in great depth at a micro-level. For lower level processing, it contributes to textbase understanding. On the other hand, higher level processing mainly focuses on constructing a situation model which is more individual and task related. Variations in comprehension may occur at any of these levels due to processing deficiencies, which can be manifested as incoherent sentential propositional construction, incomplete textbase understanding, or a distorted situation model.

Having discussed levels of processing in reading, I will move on to examine readers' cognitive processing at different levels of reading proficiency in the next section. This part includes Chall's (1983) Stages of Reading Development, LaBerge and Samuels'

(1974, 1994) Theory of Automatic Information Processing, and Carver's (1984, 1992, 1997) Rauding Theory. The reason for examining variations in cognitive processing (as explored below) is that knowledge of reading development with regard to readers' cognition allocation and strategic reading helps examine Chinese international students' reading development over time, as well as locate the possible reading difficulties that are related to this developing process.

3.5 Levels of Reading Proficiency and Variations in Cognitive Processing

The previous section examined the different levels to which readers' cognition may be allocated during reading: textbase or situation model construction. It is argued that the processing variations are closely related to readers' language processing ability. Since this study attempts to examine the development of Chinese international students' academic reading, theories discussed in this section will provide a theoretical basis for this study regarding the interrelationship between readers' employment of reading strategies, reading tasks, and their corresponding reading development. The first to be reviewed below is Chall's (1983) stages of reading development.

3.5.1 Stages of Reading Development by Chall (1983)

Chall's (1983) five stages of reading development capture the distinctive phases that pave the way to the advanced level of reading. These five stages are considered by Birch (2007:10) to be the best model to describe the general developmental steps of 'learning to read' English. In the present study, this theory helps us understand the sequence of reading development in Chinese international students' academic reading, rather than addressing the need to help these students relearn how to read in English, because of the transition they experience from an EFL environment to an ESL context. These stages are initial/decoding reading; confirmation and fluency reading; reading to learn knowledge; multiple viewpoints; construction and reconstruction.

According to Chall (1983), Stage 1-2 is the period when readers begin to learn written words. Their learning consists of phonological knowledge, the abstract association of sound with word meaning, recognising high frequency words and basic language patterns. It is at stage 2 that readers start to differ from each other. Good readers are capable of decoding written language more fluently and automatically. Those who lack sufficient practice often become demotivated, and, consequently, give up practising reading. Failure at this stage directly influences the transition to higher levels of reading in later stages, where fluent and automatic word recognition is the premise for critical reading. Reading skills at this stage focus on language decoding.

The interactive reading process takes place at stage 3. Readers face a turning point in their reading development, when they start 'reading to learn': deriving ideas and new information out of the printed language. They learn skimming and scanning in order to locate required information in an efficient way. They are reading for facts, simple points of view, and instructions. Also, for the first time, they need to bring their background knowledge into play to facilitate their understanding. Nevertheless, learning through reading at this stage remains limited, owing to limited vocabulary size, limited cognitive ability, and limited personal experience. It is assumed that a great amount of reading practice is needed in order to enlarge vocabulary and enrich background knowledge.

At stage 4 readers start to read longer texts in which different facts and opinions are expressed implicitly. Language decoding becomes fluent and automatic, which enables the reader to read in a top-down way. They need to integrate segmented information and synthesise critically what they have read.

Stage 5 usually occurs at university, when readers start to read in a constructive way. They feel confident in choosing what they need to read, and are capable of assimilating new information to their own knowledge network. The reading process is now essentially

top-down. The most frequently used reading strategies at this stage include evaluating critically, making inferences, and integrating segmented information from multiple sources.

Chall's (1983) framework explains in depth the complexity and the sequences of reading development in terms of the interconnection between bottom-up strategies and top-down ones. It stresses that solid bottom-up processing is the key element to fulfil the transition from 'learning to read' to 'reading to learn'. That is to say, readers could be hampered by bottom-up processing even at an advanced level of study if they fail to achieve automaticity in their language processing. Most likely, their reading would display a paucity of top-down processing strategies, simply because their reading development still remains at an earlier stage. In addition, this framework provides a detailed account of what strategies are supposed to be mastered at each stage, and the relating reading purposes that these strategies are deployed for.

Although Chall's (1983) theory focuses on L1 English reading, it has been usefully applied to illustrate the development of L2 reading (Grabe, 1988, 2009; Birch, 2007). In Birch's (2007:11-12) view, L2 English readers' progression, compared with the five stages described by Chall (1983), might be more complicated and might deviate from L1 reading development. This is because, for one thing, L2 readers may not have adequate knowledge of English: linguistic, cultural, and relevant world knowledge, which is essential to facilitate understanding in reading. For another, most L2 readers may not have developed lower-level language processing strategies as solid as those of L1 English readers, which may severely hinder L2 readers from reading efficiently. All these indicate that not being exposed to the practice of bottom-up strategies may lead to impediments in comprehension, even at the later stages of these L2 readers.

This is most likely to be the case in this study. Even though Chinese international students are studying at an advanced level, their inadequate practice of English reading in China indicates that their language processing ability may still be at an early stage of reading development. That is to say, when these students are expected to read constructively and critically in their academic reading in the UK, as illustrated in Grabe and Stoller's (2002) model, they may have to allocate a great cognitive load to language decoding, and their reading situation may largely resemble what is described in Stanovich's (1980) compensatory-interactive model. Incorporating Chall's (1983) theory into this study offers a rationale for examining Chinese students' reading development by examining changes in their employment of bottom-up (or textbase processing) and top-down (or situation model construction) strategies at two points in their study with six months between them, which I shall refer to as Time1 and Time2. In addition, Chinese students' choice of reading strategies may provide us with information about where their cognitive efforts are concentrated, namely, the level of processing. Knowledge of the cognitive demand on them during reading will help us understand the link between their deployment of certain strategies and the reading difficulties they encounter in academic reading.

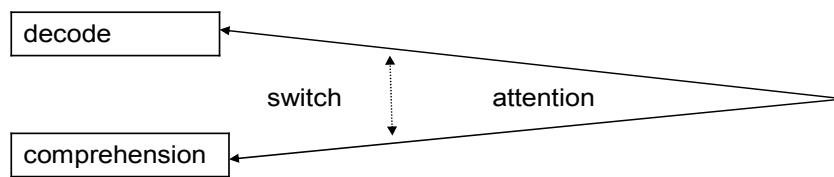
I have argued here that Chall's (1983) theory of reading development helps examine Chinese international students' reading development. In a similar vein, the concept of automatic information processing, discussed in the next section, also suggests that higher level processing will not occur unless the reader has acquired both competent language proficiency and knowledge of strategic reading.

3.5.2 Theory of Automatic Information Processing in Reading

Because learning strategies are located in human working memory (Macaro, 2006), this indicates the potential competition between readers' language processing and their deployment of reading strategies owing to the limited capacity of working memory. In

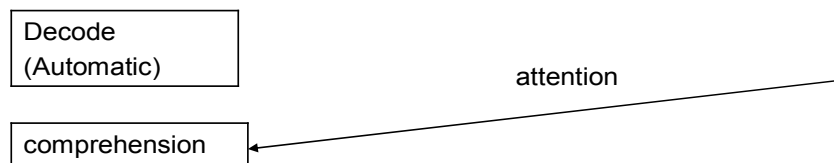
order to incorporate such cognitive constraints into my processing framework, this section will focus on the theory of automatic information processing in reading by LaBerge and Samuels (1974) and Samuels (1994). According to this theory, the core component in an information-processing system is attention, which “may be thought of as the effort or energy used to process information” (Samuels, 1994:819). It is further maintained that there are two types of attention: external and internal. External attention is mainly concerned with the use of one’s sensory organs (such as the eyes and ears) to maximize information input. Unlike the ‘orienting behavior’ of external attention, internal attention serves a more crucial role in information processing, with three distinctive features: alertness, selectiveness, and limited capacity. Alertness and selectiveness mainly refer to a situation when we are faced with multiple sources of information input. Normally, our attention will become simultaneously alert to all the information sources. Instead of paying attention to all these sources, our attention chooses to respond selectively. This is because of the limited capacity of the human mind, where only a discrete amount of attention is available for information processing. Within this framework, automaticity refers to “the ability to perform a task with little attention” (Samuels, 1994:819). In reading, there are two elements which compete for attention: decoding and comprehension. The degree of automaticity is vividly illustrated below in Figure (3.4):

A. Beginning Reading



In beginning reading, attention is switched alternatively from decoding to comprehension.

B. Fluent Reading



In fluent reading, decoding is done automatically and attention remains on comprehension. Both tasks get done at the same time.

Figure 3.4 Attention and Reading (Samuels, 1994:821).

Figure 3.4 represents two stages of reading development. For beginning readers, it is not a case of their being incapable of switching their attention between decoding and comprehension; rather, their limited attention span, which should be devoted to comprehension, has to be directed to decoding language. As a result, comprehension is impeded. This explains the laborious and frustrating reading process at the early stage of reading development, which is mainly inhibited by language decoding. At the fluent reading stage, automaticity interplays closely with accuracy in comprehension, in particular, a reading process is carried out fluidly and beyond retrospection (Grabe, 2009:27) with regard to “accurate and fast retrieval of the phonological code for written word forms” (Verhoeven and Perfetti, 2008:294). Such automatic processing is characterised by rapidness, effortlessness, and its unconscious and ballistic nature (Segalowitz and Hulstijn, 2005:371). Only when linguistic input is processed effortlessly can attention be allocated to a comprehension task.

The automatic theory demonstrates again, from another dimension, how linguistic decoding and reading comprehension are closely related. The less effort taken up in language processing, the more cognitive attention can be directed to comprehension: hence, it is more likely that better comprehension will be achieved. The two reading situations presented in automatic theory – beginning reading and fluent reading -- largely mirror the reading theories discussed previously. For instance, the beginning reading at stage A resembles, to some extent, reading proficiency at the early stages in Chall's developmental stages, when readers are still struggling with bottom-up processing strategies. This is also similar to the reading situation described in compensatory interactive reading (Stanovich, 1980), when the reader is impeded by incompetent linguistic knowledge, and tries to rely on other resources for compensation. The fluent reading at stage B is very much like the advanced stages in Chall's theory, and like the reading models focusing on skilful reading, in which automatic decoding occurs (Grabe and Stoller, 2002; Khalifa and Weir, 2009). At this stage, since there is no interference from language processing, most of the cognitive capacity is available for comprehension. This is when comprehension can go beyond text meaning construction, and combine with various reading purposes or other information sources to form a personal interpretation of the text.

This automatic information processing theory helps predict two types of reading situations among participants in this study: the weaker readers' and the stronger readers'. It is assumed that the weaker Chinese readers will show similar cognitive processing impediment to those described for the level of beginning reading due to the attention demand from language processing. Because their attention is still required for language decoding, this means that there is little capacity left for comprehension and interpretation, and their deployment of reading strategies will be mainly textbase-oriented. On the other hand, the stronger readers in this study may resemble the reading situations at the level

of fluent reading. Once they are less inhibited by language processing during reading, they are likely to direct more attention to comprehension, so that they are able to engage in higher level processing. Such allocation of attention will be reflected in their strategy use for situation model construction (which I shall later term as situation model construction strategies, abbreviated to SMS).

Nevertheless, automatic processing theory only offers a general framework of cognition allocation. It lacks an in-depth illustration of how cognition coordinates with various subtasks during reading. It also lacks a comprehensive account of how comprehension works after decoding becomes automatic. To address these issues, I will turn to Carver's (1984, 1992, 1997) reading gears theory in the next section, especially with regard to the detailed coordination between cognitive processing and reading tasks.

3.5.3 Rauding—The Reading Gears Theory

Rauding theory (Carver, 1984, 1992, 1997) is based on numerous empirical studies on the relationship between reading speed and comprehension. Carver (1992:84) created the word *rauding* to be a combination of reading and auditing (comprehending by listening), which are assumed to have similar comprehension processes. Rauding entails understanding most of the thoughts conveyed in textual material, either by means of visual or auditory input. Rauding theory conceptualises reading as a shifting process over five different levels (gears), and explicitly highlights the interactions among reading rate, reading comprehension, and reading purposes. The five gears -- scanning, skimming, rauding, reading to learn, and reading to memorise -- differ from each other in terms of reading purposes, reading speed, and cognitive demands. According to Carver, reading speed is decided by reading purpose, operating with corresponding cognitive resources. The more cognitively demanding the tasks are, the slower the speed required to process text information. Specifically, scanning (the fifth gear) is the least cognitively challenging, and involves simple visual word recognition; it has the fastest rate, about

600 words per minute (wpm). Skimming, the fourth gear, takes place at about 450 wpm, and requires lexical accessing and semantic decoding to get a rough idea of the text. Rauding, the third and the most basic reading process, goes beyond lexical accessing and semantic decoding. It requires sentential integration for general understanding, and takes place at about 300 wpm for fluent readers. The second gear is reading to learn, which takes place at about 200 wpm. It is usually used in a learning context in which students are learning new information. It requires more cognitive resources to carry out the learning tasks. The last gear is reading to memorise, which is about 130 wpm. During this process, all the textual information is rehearsed repeatedly in order to memorise it. This gear results in the most cognitive load.

Rauding theory is insightful in reading research, especially in an academic context, because it fully acknowledges variations in reading, distinctive cognitive processing for different reading purposes, and the interchangeability between them as these purposes shift during reading. Clearly, the idea that cognitive processing is closely intertwined with reading purposes largely overlaps with the 'reader purpose concept' (Grabe, 2009), and the notions embedded in Khalifa and Weir's reading model (2009). The common feature among them is that they all address the intricacies which occur between reading purposes and cognitive processing, even though these focuses differ. Grabe (2009) contends that reading activity should not be treated in a uniform way since different reading purposes would require different cognitive processing in order to complete the tasks. If Grabe's (2009) 'reader purpose concept' is more theoretically general, Khalifa and Weir's (2009) reading model and Carver's (1984, 1992, 1997) rauding theory are more specific about the cognitive facets of reading. For Khalifa and Weir (2009), their main concern is about the interplay between reading purposes (or four types of reading) and cognitive processing (together with background knowledge). While Carver (1984, 1992, 1997) primarily focuses on how reading purposes (five gears), reading speed and cognitive processing are simultaneously coordinated during reading.

Although Carver (1992) claims that rauding is the most frequently used gear, in academic reading, skimming and scanning are of equal importance, simply because searching and locating what to read precedes careful reading. In addition, reading to learn (the second gear) also plays a major part in academic reading, especially in master's study. The least used gear might be reading to memorise, in that rote memory learning is not usually recommended in the UK universities. What matters is evaluative comments and personal interpretation. Overall, this theory provides another solid framework to account for the constant changes which occur even during one reading task, as well as the fluidity of shifting and combining different strategies to match various subtasks during reading. Although it targets L1 reading, this theory helps establish what skilful L2 reading should be like as well.

Judging from what I have discussed in this chapter, it seems that the reading models and theories share some striking similarities in terms of the cognitive mechanism of the reading process. They all maintain that reading is an interactive cognitive process between bottom-up and top-down processing. Because of the different focuses that these theories and models have, they enable us to gain some insightful knowledge about the complexity of reading processing at various levels.

Since Stanovich (1980) mainly focuses on the compensatory system in cognitive resources for linguistic deficiencies, his model well illustrates the loops and regressions which occur in lower level processing. Within this model, background knowledge functions as a facilitative resource for language problems, rather than connecting the new information processed in the text with the existing knowledge network.

The modified interactive model (Grabe and Stoller, 2002), on the other hand, focuses on the interaction between textual information and the specific reading purposes, which

reflects the reading development at stage 5 in Chall's (1983) theory, and Samuels' (1994) fluent reading stage. Nevertheless, Grabe and Stoller (2002) fail to distinguish levels of processing, especially the difference between situation model construction and textbase processing. What they emphasise are the individual cognitive processes at the higher level, like critiquing the author, evaluating the text, and integrating with other information sources.

Unlike Carver's reading theory, which strictly matches each gear with its corresponding cognitive processing, the processing combination in Khalifa and Weir's (2009) model is more blurred for each reading purpose. Instead, Khalifa and Weir's (2009) model highlights the interplay between levels of processing and the three key elements involved in the reading process: reading purposes, reading monitoring, as well as background knowledge (linguistic knowledge, text content knowledge, and rhetorical structure knowledge). If reading is hampered by language processing, it is very likely that all the processing resources and monitoring effort will be preoccupied at the level of textbase understanding. Even if the processing shifts up to intertextual text representation, comprehension will not be satisfactory, owing to broken and distorted textual information. This requires all the competent processing along the hierarchical structure to create a proper intertextual representation.

Nevertheless, intertextual representation and situation models do not share the same construct, in that an intertextual model is created among texts with similar rhetorical structures (as required in the knowledge base in this model), while a situation model is constructed based on the situation described in one or more texts (Perfetti, 1997, p.346). Even though Khalifa and Weir's (2009) model has gone beyond textbase meaning processing, it is still more about relating to multiple texts in accordance with the textual structures, rather than relating to textual information. What matters in academic reading is relevant information, rather than texts with similar rhetorical structures.

In the next section, a processing framework for academic reading will be constructed, which attempts to bring together what has been discussed in this chapter. This framework will integrate additionally socio-cultural impact with the cognitive mechanisms of reading by drawing in issues from Chapter Two. In doing so, the multidimensionality of Chinese international students' academic reading can be fully investigated.

3.6 Conclusion: A Processing Framework for Academic Reading in L2 English Language

The above discussion suggests that reading is a complex and multidimensional cognitive process. Reading starts with language decoding, but ends up with different levels of comprehension. Such variations in processing and comprehension are closely related to readers' cognitive faculties as well as to the environmental context, since socio-cultural factors are inextricably bound to the reading process.

To establish how Chinese international students accommodate their reading in the UK University context, a processing framework for academic reading is constructed below (see Figure 3.5). This framework encompasses the two key elements mentioned above, namely, a reader's underlying cognitive faculties, and socio-cultural factors. In addition, the readers' mindful and effortful cognition is also considered to be an essential part of the reading process. These features will be addressed below, with particular emphasis on how they interplay during reading, and give rise to processing variations.

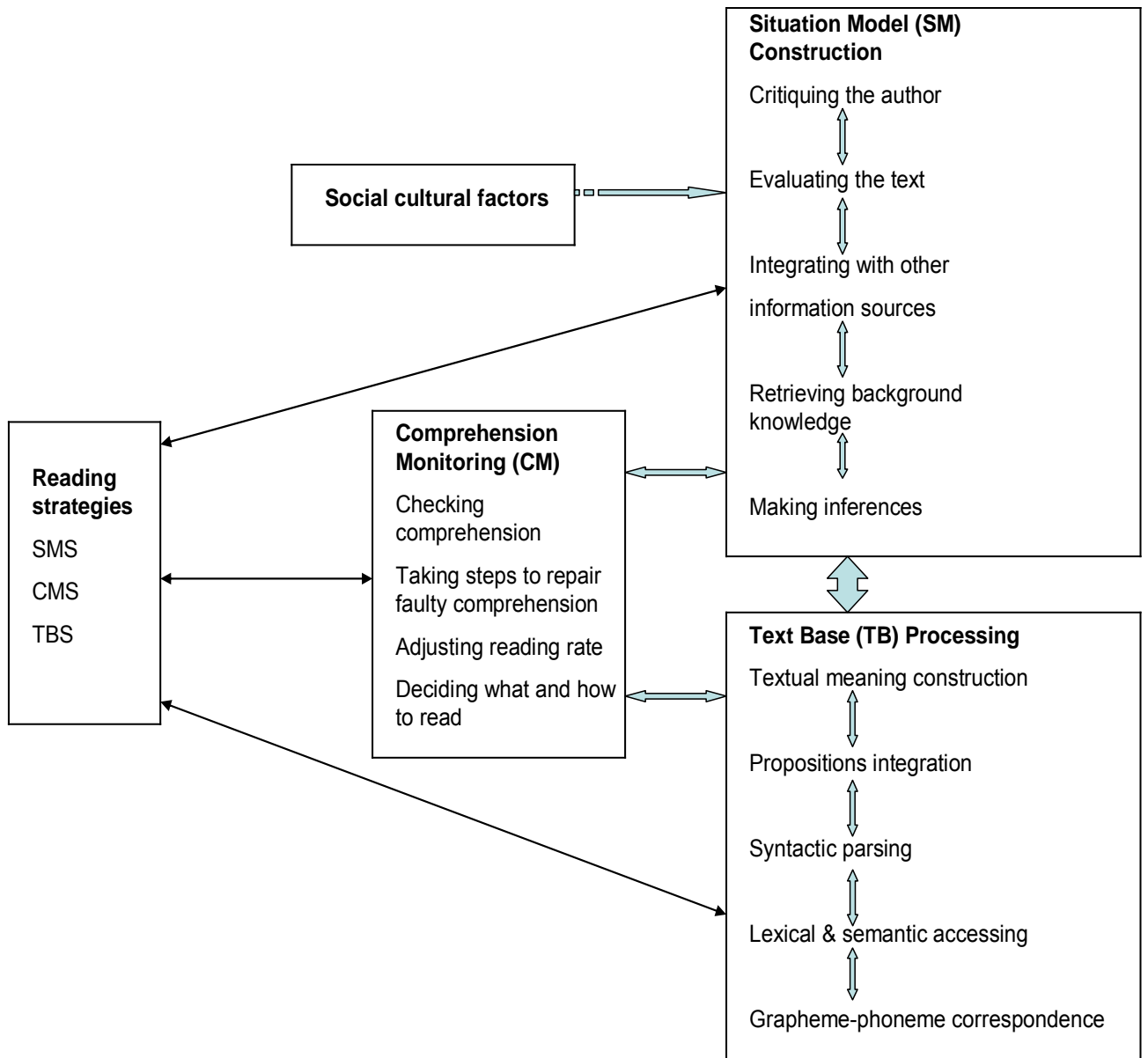


Figure 3.5 A Processing Framework for Academic Reading

Within this processing framework, the impact of socio-cultural factors mainly lies in how readers interact with a text, namely, whether the interaction remains at the level of textbase understanding, or of situation model construction. This is because, as a socially situated learning activity, reading processing inevitably reflects the social beliefs and cultural values within that community. If texts are regarded as authoritative in the

community, and the texts are normally comprehended in some preferred ways, such socio-cultural values will most likely lead to a reading situation in which cognitive processing will mainly remain at textbase understanding. Conversely, when critical reading is encouraged and expected in the learning community, these values will be reflected as personal interpretation in cognitive processing, manifesting deployment of situation model construction strategies (SMS). In both situations, the links between readers' cognitive processing and the impact of socio-cultural values on reading will be demonstrated in terms of whether readers are encouraged to dig out the implicit information hidden in the text by making inferences; or whether multiple information sources are accessible for comparison and evaluation; or whether it is common practice to engage in critical judgement. It is the everyday mediation in that community that gradually shapes a shared pattern of what and how to read a text. Donato and McCormick (1994) maintain that the development of language learning strategies is more of "a by-product of mediation and socialization into a community of language learning practice" (p.452). This interrelationship between socio-cultural values and strategy use is well addressed by Oxford (1996:xii) below:

Attitudes toward authority, beliefs about how difficult (or easy) it is to learn a language, ideas about the importance of 'the text' and about memorizing it, and concepts about whether personal expression and creativity are allowed --- all these are cultural issues that affect the use of language learning strategies.

In this research context, the socio-cultural values that Chinese international students bring into their academic reading are complex. Although the change of learning environment from China to the UK means changes in socio-cultural influences, it is unlikely that the impact of Chinese culture will move to the back stage upon their arrival in the UK, owing to the long socialisation that they have had in China. Indeed, these students are more likely to frame their master's study in the UK within a Chinese learning culture at the beginning of their study (Jin and Cortazzi, 2006). Having a prolonged impact from their home country and new mediation from the current learning

environment, these international students, as Murphy-Lejeune (2003) contends, are constantly confronted with adjustment in socio-cultural values and regulations. In academic reading, such hybrid mediation from two learning communities will have a powerful impact on their choice of reading strategies. It is assumed that their strategic reading will be much influenced by their home culture upon their arrival, showing over-reliance on textbase strategies (TBS). As time passes, the environmental mediation in the UK university will gradually make them realise the necessity of engaging in critical reading, which consequently leads to deployment of situation model construction strategies (SMS) in their academic reading.

The cognitive processing in this framework consists of three dimensions: textbase processing, situation model construction, and comprehension monitoring. One of the features that this cognitive mechanism has is that it considers reading as an interactive cognitive process. Dynamic and complex interactions may occur at various levels: between hierarchical language units for textbase understanding; between processing components for situation model construction; between textbase and situation model; and between comprehension monitoring and textbase processing / situation model construction. Among these three cognitive entities, comprehension monitoring serves as a coordinator which constantly coordinates and reorganises the cognitive resources in textbase processing and situation model construction in accordance with emerging demands during reading. For weaker readers, their comprehension monitoring will be more local, and largely preoccupied with the processing of linguistic units in the dimension of textbase understanding, in reference to meaning checking. In contrast, skilful readers' monitoring will be more global, and hence more relevant to situation model construction.

Furthermore, cognitive processing in this framework addresses the interdependence between textbase processing and situation model construction. There is no denying that

situation model construction is the ultimate goal in academic reading, but this will not occur without solid textbase processing which requires automaticity at the level of grapheme-phoneme correspondence, lexical and semantic accessing, and syntactic parsing. The importance of automaticity is, on the one hand, that it is associated with fluent reading and accurate textbase understanding. On the other hand, it frees capacity in working memory, which makes it possible to shift cognitive processing toward situation model construction. Any deficiencies at the levels of textbase processing would inhibit this progress. For example, if the reader's processing is largely constrained by lower level processing, it is likely that their "propositional integration" (Perfetti, 1985) is fragmentary and incomplete. In addition, the lower the degree of automaticity in processing, the slower the reading speed will be, and the reader is more likely to end up with faulty comprehension. Textbase processing, to a great extent, is the foundation for situation model construction. However, processes in situation model construction may also affect textbase processing. For instance, retrieving background knowledge or making inferences may be called into play to consolidate language processing, or compensate for the deficiencies at the lower levels.

As shown in Figure 3.5, this framework distinguishes textbase processing from situation model construction, rather than blurring the distinction between them. In doing so, it helps examine levels of processing among Chinese readers, and also helps locate the stages of their reading development. If their reading is still hampered at the level of language processing, it is unlikely that they will exhibit satisfactory situation model construction. Deficiencies in bottom-up processing may strongly suggest that Chinese readers' proficiency has yet to reach the advanced level required in master's study. Consequently, even though they are fully aware of the new academic requirements in the UK, their over-reliance on textbase strategies simply makes it impossible to deploy simultaneously more situation model construction strategies. Another possible reading situation is that some of them may display good textbase understanding, but little

engagement in higher level processing. This situation, as discussed earlier, may be connected with their learning experience in their native learning community. Because critical reading is not emphasised in China, Chinese students' processing has usually remained at the level of textbase understanding.

Lastly, this processing framework considers that a reader's conscious and effortful cognition is an inseparable part of the comprehension process. As conscious cognitive resources, reading strategies can be used in textbase processing, in situation model construction, and in comprehension monitoring as well. These strategies are effortful mental activities which take place during reading in order to facilitate or consolidate comprehension at any level of processing in the three dimensions outlined above.

Textbase strategies (TBS), in this study, refer to conscious efforts that readers make during the reading process in order to understand text meaning. They are mental activities relating to language decoding, both at the micro and macro levels. At the micro level, a reader's deployment of TBS demonstrates using phonological, morphological, lexical and syntactic knowledge to decode the linguistic units. At the macro level, it is a meaning construction process, making all sentential and paragraph meanings coherent. At this stage, a general meaning of the text is constructed. Therefore, these information-processing strategies are local and text-bound, and they can be considered to be the least critical at the level of propositional representation of a text (Singer and Leon, 2007).

Situation model construction strategies (SMS) refer to readers' mental processing to interpret text messages, and to tailor text meaning to their own reading purposes. Deployment of SMS involves a reader's cognitive effort focusing on "the integration of prior knowledge with the information explicitly 'in' the text" (Goldman et al. 2007:32). According to Grabe (2009:43), the situation model differs from textbase understanding,

in that it comprises a reader's interpretation of the text, to which they would bring their own personal information, such as their relevant background knowledge, their attitudes toward text, and the author, and so on. Very often, inferences are made during this process, which reflect the readers' anticipation of text messages. All the extra information brought to the reading contributes to the construction of a situation model. Reading processing at this level is more task-related.

Comprehension monitoring strategies (CMS) are mental activities undertaken to supervise and check comprehension before, during, and after reading. These are manifested in terms of constant checking, paraphrasing sentence meaning, returning to a difficult part to make another effort to understand it, or making decisions on reading pace during reading.

Because strategies are applied to emerging tasks, they are dynamic and fluid. The orchestration of reading strategies changes constantly in order to meet the emerging processing demands during reading. Nevertheless, reading strategies do not equate to successful comprehension, in that without certain language proficiency, reading strategies simply cannot function properly. These strategies need seamless co-operation between themselves and language proficiency in order to achieve satisfactory comprehension. For strategic reading, constant negotiation is required between reading tasks and strategies, as well as a fluid shift of strategies as reading proceeds.

In this chapter, I have established a processing framework for academic reading, which will be used as the basis for this study. One of the main characteristics of this framework is that it combines two distinctive paradigms -- cognitive and socio-cultural -- and considers the socio-cultural impact to be an inseparable part of readers' cognitive development. In addition, this framework justifies integrating readers' strategy use with cognitive processing in reading strategy research. Furthermore, this framework also

stresses levels of processing, and maintains that readers' deployment of TBS, SMS, and CMS are constantly shifting and reorganised during reading, owing to the unique reading purposes and the emerging cognitive demands. In order to better understand Chinese students' English reading, especially their deployment of reading strategies in English reading both in China and in the Western HE context, I will, in the next chapter, review some empirical studies.

Chapter Four: Empirical Studies on L2 Reading at Tertiary Level

In this chapter, I will first review some previous studies on Chinese students' English reading at tertiary level with regard to their strategy use as well as the research methods employed to investigate reading strategies. In addition, Phakiti's (2008) study on Thai university students' deployment of trait and state strategies is also examined, so that I can explore the different types of strategy status, as relevant particularly to readers' perception of how they usually read (Research Question 1a), and the actual cognitive processing in which they are engaged during reading (Research Question 1b). At the end of this chapter, a research design is constructed, in the light of the answers to the following review questions, which will provide a rationale for this study in terms of research questions, hypotheses, and research methods:

- (1) What reading strategies are used by Chinese students in their English reading?
How do these findings relate to the present study?
- (2) What research methods are used to examine readers' strategy use in these studies? How valid would they be for the present study? Why?
- (3) What implications for this study can be drawn from the reviewed studies, so far as exploring Chinese international students' strategy use is concerned?

Many empirical studies have been carried out to explore L2 reading in an academic context. Most of these studies focus mainly on the reading strategies deployed by L2 readers (Poole, 2005; Anderson, 1991; Feng and Mokhtari, 1998; Sheorey and Mokhtari, 2001); on the association between students' strategy use and academic performance (Block, 1986; Zhang, 2001, 2010; Phakiti, 2003, 2008); and on the different kinds of strategy status (Phakiti, 2003, 2008) which relate to readers' perception of how they usually read and what they actually do in their reading. Since these studies target readers of English with different L1 backgrounds, this review will dwell mainly upon studies pertinent to the following three issues: Chinese students' strategy use in their

English reading; the research methods used to examine reading strategies; and the different kinds of strategy status in different reading contexts. For the sake of clarity, the main studies under discussion are first introduced, and the main findings are compared. Then, strengths and weaknesses are evaluated, including a brief account of other published works which are relevant to these studies.

4.1 Studies on Chinese Students' Deployment of Reading Strategies

In China, learning English has attracted millions of people because it is regarded as a tool to access better socioeconomic opportunities (Wang and Gao, 2008:386). For instance, in 2003, there were over 9.15 million college students who sat the written tests in the College English Test (CET) Band 4 and Band 6 (Jin and Yang, 2006:22). Despite the huge number of test-takers in these English exams, studies on Chinese EFL learners' skill areas are relatively few. This is particularly true with regard to English reading research, even though reading has always been considered to be an easy and efficient way of learning English in China (Zhang, 2003; Pang, 2008). Among the limited number of studies on English reading between intermediate and advanced levels are the following: an empirical study on undergraduates' strategy use by Poole (2005); an investigation on university students' metacognitive knowledge on reading by Zhang (2010); a study of strategy use by overseas Chinese in on-line reading by Feng and Mokhtari (1998); and a qualitative study of Chinese international students' metacognitive strategies in academic reading by Li and Munby (1996). One common feature of these studies is that they all explore Chinese readers' deployment of reading strategies either in reading English as a foreign language in mainland China or as an L2 in English speaking countries.

The main purpose of reviewing these studies is to give an overview of the current research knowledge and to understand Chinese learners' strategy use in English reading, in particular, the possible strategy use at different stages regarding their cognition

allocation on textbase strategies (TBS) and situation model construction strategies (SMS). For instance, Poole's (2005) and Zhang's (2010) studies will shed light on participants' English reading before coming to the UK, while the other two studies (Feng and Mokhtari, 1998; Li and Munby, 1996) provide an insight into their academic reading during master's study in the UK.

4.1.1 Studies by Poole (2005), Zhang (2010), Li and Munby (1996) and Feng and Mokhtari (1998)

Although the findings of both Poole (2005) and Zhang (2010) strongly suggest that Chinese undergraduates read in a text bound manner in terms of over-reliance on textbase strategies, they apply different methods in examining reading strategies. Zhang (2010) uses interviews to explore participants' metacognitive knowledge of strategic reading immediately after they finish reading two English texts, while Poole (2005) uses SORS -- Survey of Reading Strategies by Mokhtari and Sheorey (2002) -- in data collection. The construct of this L2 reading instrument (SORS), according to Mokhtari and Reichard (2002), largely overlaps with that of Metacognitive Awareness of Reading Strategies Inventory (MARS), an instrument for assessing L1 reading strategies. The difference is that SORS includes two extra strategies to incorporate the unique features of L2 reading: 'translating from one language to another', and 'thinking in the native and target language while reading' (Mokhtari and Sheorey, 2002:3-4). The similarities between these two instruments resemble Grabe's (2009:1) idea that the basic comprehension processes are generalizable across L1 and L2. This leads to my decision in Chapter 5 that L1 reading strategies in an academic context should also be considered in my questionnaire item pool.

Strategies revealed among 328 university students in Poole (2005) (see Figure 4.1) suggest that these readers' cognitive processing largely remains at the level of understanding text meaning. The most frequently used strategies display a combination

of two comprehension monitoring strategies (“re-reading” and “paying attention to reading”) and three textbase strategies (“underlining”, “guessing text meaning”, “guessing unknown words”).

In a similar vein, the narrative account in Zhang (2010) of 20 participants -- with ten in each group representing the successful and the less successful readers respectively -- also offers an insight into their text bound processing. It seems that both groups' comprehension largely remains at the level of understanding text meaning, in that they believe that good comprehension mainly arises from a large vocabulary size and a competent knowledge of grammar. As far as the less successful readers are concerned, they simply regarded knowledge of English language as the only contributing factor in English reading. As a result, such metacognitive knowledge is directly reflected in their choice of textbase strategies, for instance, paying attention to every linguistic unit, low ambiguity of word meaning, and frequent use of a dictionary. As for the successful readers, although their reading was also text-bound, they reported that they retrieved cultural background knowledge to facilitate comprehension, which constitutes one of the situation model construction strategies. In addition, they were more resourceful in problem solving -- compared with the less successful ones -- manifesting a wider choice of strategies, such as analysing sentence structures, seeking context clues, guessing, or using a dictionary. They also showed a stronger metacognitive awareness of the relationship between reading tasks and reading processes. The differences between successful and less successful readers in this study are very similar to the findings in Zhang's (2001) previous study, in which the good readers demonstrated better knowledge of when and where to use reading strategies, whereas the weak readers were fully occupied in decoding the input linguistic units (though it would be precipitate to assume that weak students cannot use situation model construction strategies to compensate for their limited linguistic knowledge – see Chapter Six). Furthermore, the misconception that strategic reading is often confined to lexical knowledge and

vocabulary size (Zhang, 2001) is still popular among the participants (Zhang, 2010). Zhang (2001: 280-1) argues that this is probably because they are all at a developmental stage where both linguistic and strategic knowledge are of equal importance.

In Li and Munby's (1996) study, the focus is on Chinese international students' metacognitive strategies in their academic reading. Li and Munby (1996) used research triangulation, which entailed interviews, think-aloud and journal writing. In their qualitative study, Li and Munby (1996) compared the data from two 'A' average Chinese students in their second year master's study, and identified five strategies deployed by both participants, together with two idiosyncratic strategies (see Figure 4.1).

Like Li and Munby (1996), Feng and Mokhtari (1998) also used think-aloud to examine overseas Chinese readers' strategy use when they read easy and difficult texts, both in Chinese and English. All twenty participants were considered to be at advanced level both in L1 (having their bachelor's or master's degree in China) and L2 (with an average of 13.5 years of English language experience overseas). Clearly, a major difference between participants in Feng and Mokhtari's (1998) study and those in Li and Munby's (1996) is their long stay in English speaking countries, which may be associated with long exposure to Western culture and a much higher English language proficiency. Among them, fourteen held doctorates, and the rest were completing master's or doctoral degrees in American universities. Protocol analysis indicates that twenty strategies were used both in their Chinese and English reading.

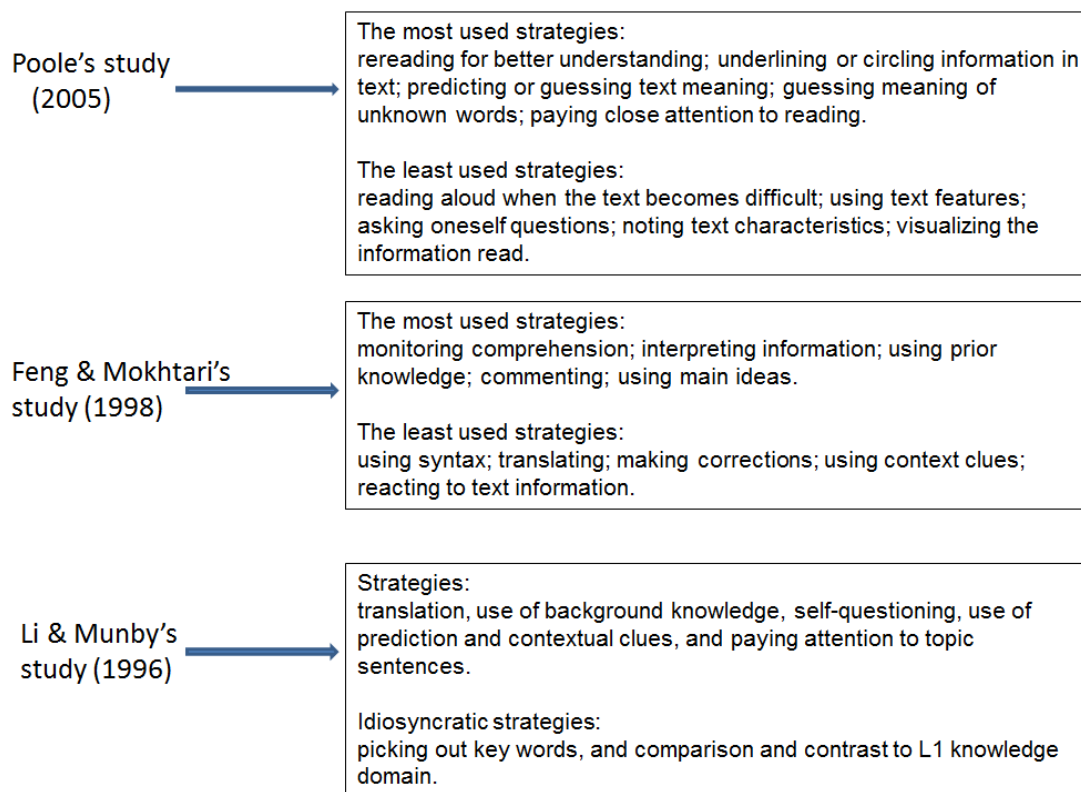


Figure 4.1 Comparison of strategy use between studies by Poole (2005), Feng & Mokhtari (1998), and Li & Munby (1996)

In order to compare the strategies used by overseas Chinese/Chinese international students with the ones used by mainland university students, Figure 4.1 demonstrates the most used strategies and the least used ones in the studies of Poole (2005), Feng and Munby (1998), as well as the ones employed in Li and Munby's (1996) study. For the sake of clarification and consistency, the most and least used English reading strategies are chosen in Feng and Mokhtari's (1998) study.

Figure 4.1 shows that discrepancies exist in relation to participants' cognition allocation on textbase strategies and situation model construction strategies in these studies. As predicted by the processing framework constructed in Chapter Three, interactive processing during reading requires a regard for the interplay between language

proficiency, knowledge of strategic reading, and reading purposes. Among these, English language proficiency plays an important role in how the language is processed and which level of comprehension will be reached. When a reader's language proficiency is low, reading processes will be largely interacting within textbase understanding, with most of the cognitive effort directed to meaning construction at the level of words and sentences. Viewed through the lens of the framework developed in Chapter Three, we can infer that the over-reliance on textbase strategies in Poole (2005) and Zhang (2010) may arise mainly from participants' low English proficiency. Furthermore, socio-cultural perspectives would indicate that the frequent use of textbase strategies might be a result of the mediation generated by the learning environment in China (see Chapter 2). That is to say, socialisation constitutes the main determining factor in the strategies that students have available to them. They are socialized to focus on understanding textual information rather than on criticising what they read. This is also the case in Li and Munby's (1996) study. Although the two 'A' students have studied at a Western university for over a year, their deployment of reading strategies still largely resembles that of their peers in mainland China, owing to the prolonged influence of their previous learning experience.

In contrast, the top five strategies used by the participants in Feng and Mokhtari's (1998) study demonstrate their automaticity in reading, in that their combinations of strategy use show an interaction between situation model construction, comprehension monitoring, and textbase understanding. This strategy use indicates a cognitive attempt primarily at the level of situation model construction, in that these readers deployed three situation model construction strategies: "interpreting information" (The subject assesses and interprets information in text); "using prior knowledge" (The subject demonstrates prior knowledge and experience about content read); and "commenting" (The subject makes comments and/or evaluates content); one comprehension monitoring strategy: "monitoring comprehension" (The subject assesses his or her degree of understanding

of the text, and attempts to make necessary repairs); and one textbase strategy: “using main idea” (The subject identifies and uses main idea as a guide for understanding text information) (Feng and Mokhtari, 1998:29-30). In this combination, the textbase strategy “using main idea” differs qualitatively from those deployed by participants in Poole’s (2005) and Zhang’s (2010) studies, because it plays an essential role in the interaction between textbase and situation model construction, without which such interaction would either have been impossible, or at best fragmentary.

On the other hand, the least used five strategies by Feng and Mokhtari’s (1998) participants are also significantly different from those in Poole’s (2005) study. As a result of their automatic processing, Feng and Mokhtari’s (1998) participants ultimately used few textbase strategies in their reading, just “using syntax”, “translating”, “making corrections”, and “using context clues”. In contrast, since participants in Poole’s (2005) study focused primarily on textbase understanding, it is not surprising that they displayed little cognitive engagement with strategies such as “using text features”; “asking oneself questions”, “noting text characteristics”, and “visualising the information read”.

Compared with participants in the two studies of Poole (2005) and Feng and Mokhtari (1998), Li and Munby’s (1996) participants fall somewhere in between these two groups, in terms of English language proficiency, time of staying in English speaking countries, and deployment of reading strategies. Although the two ‘A’ participants in Li and Munby’s (1996) study scored very high grades in the TOEFL test (615 and 617), their reading strategies are still textbase-oriented, in that they relate to “translation”, “use of prediction and contextual clues”, and “paying attention to topic sentences”. These two students used to translate every word in a sentence into Chinese in their English reading when they were in China. Such word for word translation became mental translation when they were studying in Canada. In addition, one participant still liked to use the strategy “comparison and contrast to L1 knowledge domain” in his coursework study: constantly

reading Chinese references to make sure he had fully understood his subject knowledge. Another strategy, “picking out key word”, used by the other participant also indicates the effort employed at the level of text meaning understanding.

Regarding sociocultural perspectives, the framework developed in Chapter Three suggests that participants in Li and Munby’s (1996) study would resemble those in Poole’s (2005) and Zhang’s (2010) studies owing to the socio-cultural impact from their previous learning experiences in China. If their strategy use is examined through the lens of the theories proposed in this thesis, we would be led to infer that participants in Li and Munby’s (1996) study would continue to read English in a bottom-up way, focusing on understanding text meaning. Like the successful readers in Zhang (2010), the only high level processing they showed in on-line reading was “use of background knowledge”. The similarity between the two international students and the successful readers in Zhang’s (2010) study suggests that shifting the learning environment may not trigger an immediate effect on readers’ choice of strategies. This implies that it takes time for these students to incorporate new socio-cultural mediation into their cognitive processing in academic reading. On the other hand, this also suggests that mediation arising from their previous learning environment has an enduring influence on their choice of reading strategies when they are studying in Western universities.

In addition, findings in Zhang’s (2010) and Li and Munby’s (1996) studies also suggest a difference between ‘reading to learn’ in an academic context and ‘learning to read’ in an FL environment. Given the limited English resources available to students in China (Zhang, 2008), especially English academic texts, it is assumed that upon their arrival in a Western university, their background knowledge of English academic reading, particularly in their domain subject, can provide little support in their coursework reading. Therefore, can we infer from this that, in the case of the two master’s students’ academic reading, their employment of “use of background knowledge” may largely stem from their

reading around the subject, which is very different from the cultural knowledge used to facilitate text understanding in the undergraduates' reading in Zhang's (2010) study? If so, then the reason that these two students failed to show more critical processing is probably related to socio-cultural factors. Because they were still in the process of building up their background knowledge, the lasting impact of their Chinese learning culture – that people are not expected to contribute something new to the field unless they have fully mastered it (Jin and Cortazzi, 2006:9) – would simply restrict them from engaging in critical reading.

Meanwhile, these two 'A' students' academic reading also differs from that of the weak readers in Block's study (1986). Protocol analysis shows that all three Chinese international students from a university remedial class in Block's (1986) study displayed predominantly textbase strategies in their English reading. Because of their low English language proficiency, they were frequently handicapped by non-automatic decoding. Their processing was largely confined to textbase understanding, like the less successful readers in Zhang's (2010) study, with little cognitive engagement in situation model construction. These three participants' English reading, to some extent, helps predict the reading situation among the weak readers in this study. Although some of them managed to pass the required English language proficiency tests, such as TOEFL or IELTS, they may still be inhibited by English language deficiency in their coursework reading. They might also display similar reading difficulties to those in Block's (1986) study.

One possible explanation for such variations in strategy deployment in the studies discussed above is participants' personal and educational experience, in addition to their English language proficiency. As mentioned above, both Poole (2005) and Zhang (2010) collected data in mainland China, and their findings are consistent with the practice of over-reliance on textbase strategies that is predicted for such readers in the framework developed in Chapter Three. Nevertheless, participants in the studies by Feng and

Mokhtari (1998) and Li and Munby (1996) have a much higher language proficiency, especially those in Feng and Mokhtari's (1998) study. These participants' experience of living and studying in English speaking countries is predicted to be manifested in their deployment of reading strategies. Generally speaking, our framework predicts that those who have left China differ from those studying in China in terms of using situation model construction strategies, such as "interpreting information", "commenting", and "using prior knowledge". Those who have stayed in English speaking countries for a longer time, like the participants in Feng and Mohktari's (1998) study, will also differ from those who have stayed for a shorter time, like the two participants in Li and Munby's (1996) study. Although there are weak readers among international students, as illustrated in Block's (1986) study, these studies provide an interesting developing pattern of the reading situation of Chinese students, of a transition between time and geographic location, between studying in China and in Western academia, and between textbase understanding and situation model construction.

Nevertheless, caution is needed when generalising from these findings. The weakness of Poole's (2005) study is that using a questionnaire to explore Chinese undergraduates' deployment of reading strategies reflects only one dimension of their English reading. It is about their perception of what they normally do in their reading, which could be very different from what they actually do during their reading with specific task demands. Similar weaknesses exist in Zhang's (2010) study. Since the semi-structured interview is the only instrument used to collect data, there is always a risk of having participants who feel more comfortable talking, and those who are nervous and tongue-tied. In Li and Munby's (1996) study, although it is very insightful regarding these two Chinese international students' academic reading, since data were collected only on two 'A' students, the findings are confined to these two readers. In Feng and Mokhtari's (1998) study, a mixed group of participants with different English language proficiency really weakens the findings. As revealed in Li and Munby's (1996) study, even competent

students who are studying their master's degree still display the effect of their previous learning experience in their academic reading, resembling their counterparts in China. Since 14 of these participants held doctorate degrees, it seems that the findings would be more robust if the study had targeted only this group, rather than mixing them with students who were studying for their master's degree.

4.1.2 Implications for This Study

Based on the above analyses, several implications can be drawn for my study. For one thing, it is important to recruit participants with similar language proficiency, rather than a group with mixed language levels, as Feng and Mokhtari (1998) did. As the above discussion suggests, language proficiency is one of the key elements in determining the combinations of reading strategies used. Students with different language proficiencies will demonstrate different sets of reading strategies in their reading. Mixing these students together could only undermine the generalizability of the findings, unless their language proficiency is introduced as an independent variable, which then requires a larger cohort. Furthermore, mixed methods in data collection are crucial in order to yield robust results about Chinese international students' deployment of reading strategies in academic reading. This is because multiple methods of data collection can not only neutralise the potential weaknesses or bias generated by one single research method, but also capture the multifaceted nature of reading itself. Lastly, data for quantitative research should be collected from a sizable group. It is legitimate to have a small sample for a case study which can offer an in-depth account of reading processing, but findings based on a large group of participants will offer a more robust and representative picture of Chinese international students' academic reading.

In all, the reviewed studies suggest that Chinese students' deployment of reading strategies is changeable and dynamic, and that it is closely related to their English language proficiency and learning environment. Nevertheless, none of these studies

addresses the issue of strategy status with regard to whether students' perception of how they normally read is consistent with what they actually do in on-line reading. As discussed in Chapter Three, reading is a complex process in which readers' cognitive processing and the socio-cultural impact are considered to be two inseparable elements. Knowledge of how Chinese students use reading strategies in different situations will enable us to gain a better understanding of their academic reading, and also help us explore the intertwined relationship between socio-cultural factors and strategy use.

In order to explore the multifaceted nature of Chinese international students' academic reading, I will review Phakiti's studies (2003, 2008) in the next section, mainly focusing on two important issues pertinent to this study: the concepts of trait and state strategy; and the validity of his research methods to elicit these trait and state strategies. Answers to these issues will shed light on the construction of my research design at the end of this chapter.

4.2 Study of Trait and State Strategies

The concepts of trait and state were first established in research on anxiety by Spielberger (1966, 1972, cited in Spielberger et al., 1980:95). They are "two different classes of personality or psychological attributes for describing people" (Hong, 1998:148). According to this trait-state theory of anxiety, state anxiety is more situation-provoked, and more changeable over time, while trait anxiety relates to an individual's general disposition to be anxious, hence, it is more stable across occasions. It is assumed that each individual has both attributes: a transitory state and a relatively stable trait (Hong, 1998; Hong and O'Neil, 2001). Phakiti (2003) applies this psychological framework to reading strategy research. He posits that state and trait strategies can also be observed in reading tasks. If strategy use is examined under a specific situation, it is a state strategy. If it is about strategy use in a more general stabilised situation, it is a trait strategy by nature (2003:49). This means that readers all

have general trait knowledge of reading strategies. When such knowledge is brought into a given reading situation, the interaction between the readers' knowledge of strategic reading and the specific tasks leads to the deployment of state strategies. To some extent, state strategy use reflects the trait knowledge to a greater or lesser extent, and is largely dependent on the demands of specific tasks. This is analogous to saying that climate has a predisposition to determine the weather on a particular day, even though the latter cannot be fully predicted. The notion of using strategies in a specific context or in a task-free situation is associated with the status of strategy deployment.

In L2 strategy research, general perceived strategy use free of context is trait-like knowledge of cognition, whereas actual perceived strategy use in a specific context is state-like regulation of cognition ... the use of state and trait notions to classify the two aspects of strategy use in strategic competence research is a way forward (Phakiti, 2008:242).

Phakiti (2008) explores the relationship between trait and state cognitive and metacognitive strategies over time among 561 Thai university English language students. In his study, cognitive strategies are defined as "actual conscious behaviors that individuals use to process language to understand, learn and use in some context", and metacognitive strategies are defined as "conscious processes that regulate cognitive strategies and other processing" (p.242-3). In Phakiti's (2008:243) view, trait cognitive and metacognitive strategy use is about an individual's general tendency to use these strategies over various contexts, whereas state cognitive and metacognitive use relates to the actual deployment of these strategies in a specific language use situation.

Two questionnaires were issued twice to examine the same set of strategies. In one version, all the item wording was in the present tense (see the detailed analysis of this questionnaire in Chapter Five), which aimed to tap participants' trait strategy use. The other version was worded in the past tense, and attempted to investigate participants'

deployment of state strategies immediately after their mid-term (Time1) and final exams (Time2).

Phakiti's (2008) results show that low correlations were found both between trait metacognitive strategies at Time1 and Time2 ($R^2=0.31$ on both occasions), and between trait cognitive strategies over time (also $R^2=0.31$ on both occasions). Phakiti (2008) believes that although a trait construct is supposed to be stable, in the context of L2 reading it can be unstable owing to the fact that the participants were at a developmental stage in terms of their English language proficiency and strategic knowledge. In addition, low correlation was found between trait cognitive strategies and state cognitive strategies (Time1: $R^2=0.04$; Time2: $R^2=0.06$). This is regarded as conceivable in that Phakiti thinks that both trait and state cognitive strategies may largely depend on trait and state metacognitive strategies which have 'an executive function' in cognitive strategy use. Strong correlations were found between trait and state metacognitive strategies (Time1: $R^2=0.58$; Time2: $R^2=0.62$); between state metacognitive strategies and state cognitive strategies (Time1: $R^2=0.58$; Time2: $R^2=0.56$); and between trait metacognitive and trait cognitive strategies (Time1: $R^2=0.90$; Time2: $R^2=0.92$). These results suggest that individuals' general knowledge of how to process information during reading was significantly related to what they actually did in a specific reading situation. Based on the above findings, Phakiti (2008:260) claims that "strategic competence as a non-linguistic factor in L2 use is highly complex, hierarchical and multi-dimensional".

What is interesting in this study is that one of the findings appears to be inconsistent with a previous study conducted by the same researcher (Phakiti, 2003). In both studies, the same instrument – questionnaires -- was used to examine participants' strategic reading in terms of their cognitive and metacognitive strategy use. The only difference is that the first study focused only on state cognitive and state metacognitive strategies. As shown above, strong correlations were found between state metacognitive strategies and state

cognitive strategies in this later study (2008), both concurrently and longitudinally, while in 2003, there were only weak correlations between these two entities. Phakiti (2003) argues that the weak correlations between cognitive and metacognitive strategies probably arise from the ambiguities in definitions, in that “cognitive – metacognitive goals seem to form a continuum ... the same strategy in one occasion may be cognitive while in another occasion it may be metacognitive” (p.44-5). For instance, “translating as reading” is a cognitive strategy when it is used for understanding the text, but this strategy can be a metacognitive strategy if the goal of using it is to make an evaluative judgement about whether the text makes sense. Such conceptual fuzziness may bring about a situation in which a strategy can be interpreted either as cognitive or metacognitive, simply because there is not a clear-cut distinction between them (Cohen,1998:12). Given the inaccuracy in locating a specific strategy, Phakiti (2003) claims that there is “a need to further investigate underlying reasons why a particular strategy is used” (p.44-5). Despite the fact that Phakiti (2003) acknowledges the conceptual fuzziness between cognitive and metacognitive strategies and the necessity of contextualising strategy use, in his later study (2008), Thai university students’ English reading was still investigated by means of the same strategy categories: cognitive and metacognitive.

There are two relevant issues which underpin all this. Firstly, using the definitions of cognitive and metacognitive strategy may be inadequate to capture the dynamic and complex reading processes, in that they clearly lack accuracy in the interpretation of a specific strategic cognition. Secondly, it also implies that there are possible weaknesses in the instrument used in data collection. Although it is of great significance in distinguishing two different types of strategy status, the inconsistent findings in the above two studies cast doubt on the reliability and validity of using questionnaires to examine test-takers’ state strategies retrospectively. Owing to the transitory nature of state strategies, even though all the items are worded in the past tense, it is still difficult to say

to what extent such items accurately examine participants' cognitive processing in a retrospective way.

In addition, the predetermined answers in the questionnaire do not provide any information on strategy use in on-line reading. It is true that issuing questionnaires to a large sample can generate robust quantitative data findings. It is equally true that quantitative results cannot provide a detailed description of the specific situation in which state strategies are used, since state strategies are task and situation provoked, and require a more qualitative investigation. Despite the fact that Phakiti (2008) uses a powerful structural equation modelling in his quantitative analysis, it seems an oversimplification to use only the past tense wording to distinguish state strategy use from trait strategy deployment. Take the strategy "awareness of reading purposes" for instance, its trait version was worded as "I plan what to do before I begin to read English texts or tasks.", whereas the state strategy was that "I planned what to do before I began to complete this reading test". Such equivalence between trait and state (except in tense) indicates that it has been taken for granted that every trait strategy has a corresponding state strategy, and only *one* state strategy at that. In doing so, the transitory and dynamic nature of state strategy has been neglected. As Phakiti (2008) admits, structural models can only offer speculative clues about human mental processing, rather than accessing it (p.262). In order to avoid these potentially problematic issues, in my study different methods are needed to examine the two distinctive strategy uses: stabilised trait strategies and transitory state strategies.

To some extent, Phakiti's study (2008) is very similar to Anderson's (1991). Anderson examined L2 English readers' strategy use by means of think-aloud during an exam and in their coursework reading. The results suggest that both good and poor readers used the same strategies on both occasions: doing a standardised reading test and reading an academic text. Anderson (1991) contends that there should be differences between

these two reading occasions, in that standardised tests examine test-takers' language proficiency, "while success in reading textbook-related materials can be attributed to individual learner factors other than level of language proficiency, such as level of interest, motivation, learning style, and background" (p.470). As ever, knowing reading strategies alone does not guarantee good comprehension. What counts more is to know how to use these strategies and when to use them. Anderson's findings suggest a need to contextualise state strategy use by means of verbal reports. In other words, only when a rich context is provided is it possible to analyse how and when strategies are used in a dynamic and fluid situation, and to capture the differences in strategy use between good and poor readers.

Despite the weaknesses in Phakiti's (2003, 2008) studies, there are several aspects which are applicable to my study. If Phakiti's application of trait and state strategies is based on a solid theoretical framework, these concepts can also be applied to this study in order to investigate the multidimensionality of Chinese international students' academic reading. Usually strategy research has remained in one dimension: either readers' perception of what they do habitually in their reading (such as Poole, 2005), or what they actually do in on-line reading (like Anderson, 1991). The investigation of trait and state strategies will help address the complexity of cognitive processes, so that the reading process can be explored in a more multifaceted way. In addition, appropriate instruments to elicit reading strategies are essential to ensure the robustness of the final findings. There is no doubt that questionnaires can tap trait strategies on a large scale, and yield useful quantitative data. However, when it comes to examining transitory state strategies, it is think-aloud which can provide the rich context needed to explore the details of what, how and when strategies are used.

4.3 Answers to the Review Questions

Analyses of the above empirical studies provide us with answers to the review questions asked at the beginning. As far as Review Question 1 -- What reading strategies are used by Chinese students in their English reading? How do these findings relate to the present study? -- is concerned, findings from the reviewed studies (Poole, 2005; Zhang, 2010; Li and Munby, 1996; Feng and Mokhtari, 1998) suggest a wide range of reading strategies used in Chinese students' English reading. Generally speaking, there exists a contrast between students studying in China and in English-medium institutions overseas, which can be interpreted in the light of the framework proposed in Chapter Three. For undergraduates in China, their English reading is primarily characterised by textbase strategies, for instance, "underlining or circling information in text"; "predicting or guessing text meaning"; and "guessing meaning of unknown words". These frequently used strategies are triggered mainly by an impediment in language processing. As a result, these strategies closely interplay with certain comprehension monitoring strategies which are deployed to reinforce understanding text meaning, such as "rereading for better understanding" and "paying close attention to reading". For the overseas group, especially those who have stayed abroad for over a decade, their reading is dominated by situation model construction strategies, such as "interpreting information", "using prior knowledge", and "commenting". Their corresponding monitoring strategy is "monitoring comprehension", together with an essential textbase strategy "using main ideas", which enables the employment of situation model construction strategies.

Clearly, there is little in common between these two groups regarding their cognition allocation during reading. However, the newly arrived Chinese international students, like the ones in Li and Munby's (1996) study, displayed a link in their strategy use between the above two groups. Although their reading still heavily resembled that of their counterparts in China with regard to their choice of textbase strategies, these two students started to demonstrate signs of using higher level processing strategy, namely,

“use of background knowledge”. The fundamental difference between these two students and those participants in Zhang’s (2010) study is that these two students were ‘reading to learn’ in Western academia, while the latter were still at the stage of ‘learning to read’. That is to say, Li and Munby’s (1996) participants were at a transitional stage in terms of language proficiency and exposure to the mediation of Western academia when viewed through the lens of the framework in Chapter Three. As mentioned earlier, since all the participants in Feng and Mokhtari’s (1998) and Li and Munby’s (1996) studies undertook their university study in China, it is safe to assume that what is manifested in Poole’s (2005) and Zhang’s (2010) studies also equates to their previous reading experiences before they left China. Their changes in English reading may be attributed to factors such as improved language proficiency, the Western education experience, and long involvement with Western culture.

What can be predicted from these findings about participants in this study is that their reading situation will be very similar to that of undergraduates in Poole’s (2005) and Zhang’s (2010) studies upon their arrival in the UK. That is, their cognitive processes will consist mainly of textbase strategies, displaying a continuation of how they used to read in China. Over time, however, these participants may gradually undergo the transition from ‘learning to read’ to ‘reading to learn’, and like the two students in Li and Munby’s (1996) study, they may demonstrate higher level processing in their academic reading. Nevertheless, since the two ‘A’ students with high TOEFL scores were at the top end of the achievement range, and also were in their *second* year of master’s study, we should not anticipate that the students in this study – not selected as high fliers and with less overall exposure to the western environment – will necessarily progress as far within the single part-year in which they were observed.

All in all, the findings of the studies reviewed above indicate the potential for observing meaningful patterns in strategy use. It seems well justified to include these strategies in

the item pool for my questionnaire construct, which I will discuss in detail in Chapter Five, so that Chinese students' academic reading will be accurately represented.

As for Review Question 2 -- What research methods are used to examine readers' strategy use in these studies? How valid would they be for the present study? Why? -- great variations can be seen in the reviewed studies, from using just one method to using several, and from either quantitative or qualitative methods to using triangulation. Altogether, these methods include think-aloud to tap on-line reading strategies; questionnaires to elicit trait and state strategies; and semi-structured interviews to examine learners' knowledge of metacognitive strategies on reading. Nevertheless, the above critical analyses show that some of the studies fail to justify their choice of research methods, which potentially undermines the robustness of the findings. For instance, it is legitimate to use questionnaires to investigate trait strategies free of context, because questionnaires are about participants' perception of how they read. But this instrument cannot accurately capture task-provoked state strategies. In the same way as the fuzziness in the concept of anxiety used to cause ambiguity by mixing up two types of variables: trait and state (Spielberger, 1983), Endler et al. (1991:919) point out that the conceptual distinction between trait and state should lead to methodological separation in order to explore these two different entities. Another example is the semi-structured interview. There is no doubt that this method can generate rich qualitative data about participants' strategy use. Meanwhile, it may also be problematic if the participants are tongue-tied during interviews. In Li and Munby's (1996) study, although triangulated methods were used to help yield more robust and valid data, the data are qualitatively-oriented. In-depth descriptions of Chinese students' academic reading cannot offer quantitative results relating to their longitudinal development over time. All these suggest the necessity of combining both quantitative and qualitative methods in data collection in this study.

Findings and insights from previous research have at least two major implications for the design of the present study (Review Question 3: What implication for this study can be drawn from the reviewed studies, so far as exploring Chinese international students' strategy use is concerned?). The first major implication is that the deployment of reading strategies is multidimensional. The concepts of trait and state reflect the different dimensions of human cognition: an individual's predisposition to manifest a particular experience or behaviour, and an individual's actual response to a specific situation. These binary concepts help explore the complex cognitive processes more explicitly, in particular, the distinction between how readers perceive the way they read, and what they actually do in their reading.

The second implication is that the taxonomies of cognitive and metacognitive reading strategies might be potentially problematic, so far as categorising strategies in this study is concerned. As the above discussion suggests, problems and ambiguities arise when a specific strategy is located. These problems may largely undermine the robustness of the findings. In addition, the concepts of cognitive and metacognitive strategies seem to oversimplify the various aspects of readers' cognitive efforts, in that they blur the dynamic interactions during reading processing: such as language / text meaning processing; textbase / situation model construction; textbase / comprehension monitoring; and situation model construction / comprehension monitoring. Such simplistic categorisation would be inadequate in the present research context, in which the main purpose is to examine the development of Chinese students' critical reading in terms of changes in their strategy use. Without corresponding subcategories at the levels of textbase processing, situation model construction, and comprehension monitoring, there would be little chance of exploring the different levels of cognitive processing, let alone the transition in strategy use over time. In order to avoid all these potential problems, this study will use only the strategy categorisations established in

Chapter Three, namely, textbase strategies, situation model construction strategies, and comprehension monitoring strategies.

Having discussed the necessity of exploring the different kinds of strategy status, and justified the application of trait and state strategies to this study, in the next section, I will construct a research design based on the answers to the review questions.

4.4 Research Design of the Present Study

The above review indicates that although studies have been carried out to explore Chinese students' English reading, they have tended to focus on the deployment of reading strategies at a certain point of time, either at undergraduate level, or at postgraduate level. Little attention has been given to how students' choice of reading strategies develops over time, especially when they change their learning environment from China to Western universities, and from undergraduate to postgraduate study. Even though Phakiti (2008) compares university students' strategy use over the course of three months between mid-term and final exams, his research focus was monodimensional, in that it mainly explored English reading at the level of 'learning to read'. So far, few studies have been done to investigate the changing course of L2 readers' strategic reading, particularly when it covers "the transition from learning-to-read to academic reading-to-learn" (Grabe and Stoller, 2002, p.85).

I am particularly interested in what happens to Chinese international students' academic reading in the course of one year, as they become gradually immersed in a Western academic context. To find the answers, a one-year longitudinal study was to be carried out to investigate changes in these students' deployment of reading strategies in coursework reading. The rationale for this one year study is based mainly on the institutional duration of a master's degree in the UK. Specifically speaking, data were collected within six months apart between Time1 and Time2, and participants' year-end

academic performance was taken into account in data analysis (see Chapter Six). My research questions are set out as follows:

1. How does Chinese international students' academic reading develop in terms of their deployment of reading strategies in the course of one-year master's study?
 - a. How do their trait strategies develop in the course of one-year master's study?
 - b. How do their state strategies develop in the course of one-year master's study?
2. What socio-cultural factors are involved in their choice of reading strategies? And how are these factors related to their strategy use?

Hypotheses are proposed in accordance with the studies discussed above. If the participants' reading in Poole's (2005) and Zhang's (2010) studies was primarily dominated by textbase strategies, it is hypothesised that participants in my study will demonstrate similar cognitive processing characterised by textbase strategies upon their arrival (at Time1). Meanwhile, since Li and Munby (1996) did not find a transition in strategy use from textbase processing to situation model construction in their participants, it may be that it takes longer than one year for this transition to happen. Therefore, it is also hypothesised that at Time2 the participants' deployment of reading strategies will still be dominated by textbase strategies.

In order to test the above hypotheses, –mixed research methods were designed in the next section in the light of the observations made earlier about how to maximize robustness.

4.5 Mixed Research Methods

Because strategy use is an internal and mentalistic process, to design appropriate research methods which are able to reveal cognition with some accuracy presents a considerable challenge (Cohen and Scott, 1996:90). Critical analysis of research above suggested a need to use different methods to capture trait and state strategies in line

with their unique underlying constructs: stable versus transitory. Data collected by one instrument cannot fully explore this process, because it can examine only one dimension of the complex cognition involved. In addition, each research method has its weaknesses and biases, as discussed in Poole's (2005) and Phakiti's (2003, 2008) studies. The questionnaire has been a popular instrument to investigate trait strategies free of context. It effectively taps people's attitudes and perception of what they believe they are doing, but it is not able to reflect what they actually do. Therefore, doubt would be cast on its validity if this instrument were used to explore the transitory state strategies, even if item wording were phrased in the past tense, and the strategies examined retrospectively. Meanwhile, think-aloud, a technique to examine human mental activities, as in Anderson's study, explores participants' task-provoked strategy use in a specific situation. Verbal reports can provide detailed information about what is happening in a human's mind, but they also generate enormous interpretation problems (McDonough, 1995:10). As with questionnaires, think-aloud can reflect only one dimension of readers' cognitive processing.

In comparison, Li and Munby (1996) have demonstrated the validity and robustness of a well-designed qualitative study, even though data were collected from just two 'A' students. Their research methods were well designed in terms of using different research methods: interviews, think-aloud, and participants' journals. Interviews, in this study, were used to elicit participants' general perceptions of strategy use in their academic study, which is very similar to what Zhang (2010) used to explore Chinese undergraduates' metacognitive knowledge of reading strategies. In addition, the context free strategy use was also investigated by means of a one-month journal writing exercise. Arguably, strategies elicited by means of these two types of methods – interviews and journal writing – are trait strategies by nature. Then think-aloud was carried out to investigate another dimension of strategy deployment: a more transitory and dynamic cognitive process in on-line reading (employment of state strategies). Although Li and

Munby (1996) do not address the distinction between trait and state strategy use, regarding them simply as one type of strategic reading, their research methods were actually designed to explore two different kinds of strategy status in academic reading.

In the present study, mixed methods were adopted following Li and Munby (1996). Chinese international students' strategic reading was examined in two distinctive situations: context-free and task-specific. In line with Poole (2005) and Phakiti (2003, 2008), questionnaires were used to investigate the deployment of trait strategies; this is clearly an effective method to employ among a large group of students. On the other hand, think-aloud was used to explore the transitory and dynamic state strategies, because verbal reports can provide an in-depth description of how these strategies were used in on-line reading. As a complementary method, semi-structured interviews were carried out immediately after think-aloud, so that it was possible to conduct a catch-up clarification of the weak sessions which occurred during think-aloud. This provided an opportunity to ask more specific questions about participants' academic reading in their coursework study. Moreover, focus groups were conducted, in addition to interviews, to investigate the social and cultural factors that Chinese students perceived to be involved in their academic reading both in China and in the UK. Such a mixed methods study helps explain fully from more than one standpoint the complexity of human behaviour (Cohen et al. 2000:112). Dörnyei (2007:45) posits that

in a mixed methods study a [quantitative] phase can be followed by a [qualitative] component to neutralize this issue by adding depth to the quantitative results and thereby putting flesh on the bones.

In the following two chapters (5-6), I will explore respectively these two different types of strategies -- trait and state – in Chinese international students' academic reading. In Chapter Seven, I will investigate the socio-cultural factors involved in this evolving

process. In each of these three chapters, I will first justify the instrument(s) used for data collection, and then report the results of data analysis.

Chapter Five: An Investigation of Trait Strategy Use

In Chapter Four, I established a mixed methods research design, which combined the use of questionnaires to examine trait strategies; think-aloud to explore state strategies; and focus groups and interviews to investigate the interrelationship between socio-cultural factors and Chinese students' strategy use. In this chapter, I will focus on the questionnaire data, which will tell us what the students reported about their deployment of trait strategies, in particular, how their trait strategy use developed over time during their master's study.

I will first explain why questionnaires were chosen to collect data in a task-free situation. The theoretical framework for my questionnaire is the one presented in Chapter Three. In order to have well-represented items in my questionnaire, three previous questionnaires on academic reading were reviewed: Weir et al. (2009), and Phakiti (2008), and Taraban et al. (2000), and the strategies tested in these questionnaires became the basis for my item pool. In addition, the questionnaire on self-regulatory learning by Tseng et al. (2006) was reviewed in order to test whether their measure of self-regulatory learning is, as Tseng et al. (2006) claim, robust enough to replace the traditional instruments used to assess reading strategies. After reviewing these questionnaires, I move on to my questionnaire construct, and the procedures of data collection. At the end of this chapter, data analyses are presented, which enable me to answer Research Question 1a: How do [the participants'] trait strategies develop in the course of one-year master's study?

5.1 The Rationale for Using Questionnaires

In Chapter Four, trait strategy was defined as readers' general strategy use in a context free situation. Information about trait strategy use is accessible only indirectly through readers' self-reports, framed in terms of what they normally do in reading. It follows that a

plausible approach to tapping trait strategy use is to use a questionnaire to ask readers what they generally do when reading. Allerson and Grabe (1986:177) and Cohen (1998:35-6) confirm that in the reading context questionnaires are robust for eliciting attitudinal and behavioural information. However, they also inject a note of caution, pointing out that such approaches inevitably provide information about what readers *believe* they do during reading, rather than what they *actually* do. This is an issue often raised in relation to self-report methodologies (e.g. Dornyei 2003:12). But arguably, this instrument is less problematic for this study than for many other types of project. This method may not enable me to disaggregate the readers' actual cognitive effort in reading (their deployment of state strategies), the readers' awareness of that effort, and the cultural and social factors that can impact on whether and how readers respond to that awareness when reporting what they normally do in academic reading. But these very intervening factors are in fact the key elements of trait strategies. What I am looking for is a change over time in Chinese students' perception of academic reading. That is, I want to know whether in the course of six months Chinese students' beliefs about what they often do in their coursework reading have changed, considering the changes in their learning environment.

There are many advantages to using questionnaires in this study. One of those advantages is that quantitative data collected from a big group of students should yield representative information on Chinese international students' reported practices in academic reading. Furthermore, since data were collected twice (Time1 and Time2) in order to examine the changes in their trait strategy use, the same questionnaire could be used in a replicable way among the same respondents in a very tightly controlled manner (Wray and Bloomer, 2012:170). Apart from these considerations, there are also other advantages, such as low cost, convenience, no interviewer bias, and straightforward analysis (Gillham, 2000).

At the same time, I was aware of the pitfalls in using questionnaires. At the design stage, I was concerned about problems regarding the overall length, item wording, and choice of language medium. Specifically, I needed to address questions such as how I should balance the length of my questionnaire with the appropriate number of reading strategies to be examined; how I should provide a set of all possible answers for closed questions (Litosseliti, 2010); how to ask neutral and objective questions; and whether the items should be worded in Chinese, or in English, or in both. At the stage of data collection, I was concerned about some potential problems relating to the respondents, such as their misunderstanding of questionnaire items, and their attitudes towards the questionnaires. In addition, data collection at Time2 could encounter a social desirability bias from the participants, owing to the impact of Time1 data collection. All these issues could potentially affect the reliability and validity of the collected data.

To minimise these potential problems, special effort was needed on the following three regards. Firstly, it was crucial to have a robust item pool for my questionnaire design informed by a critical review of previous questionnaires. Secondly, modification should be done in response to piloting with regard to rubrics and item wording, so that participants' misunderstandings could be reduced to the lowest level. Lastly, when issuing the questionnaires, brief and clear instructions were important to ensure that participants' attitudes towards the questionnaires were positive.

Having briefly outlined the potential issues of using questionnaires in this study, I will, in the next section, review the three previous questionnaires that I examined critically when developing my own, namely, those of Weir et al. (2009); Phakiti (2008); Taraban et al. (2000).

5.2 Review of Previous Questionnaires

The reason for reviewing these three questionnaires is that they could offer me useful dimensions which I could draw on in compiling my item pool. My main review question was: What useful features could be applied to my questionnaire design from these previous questionnaires?

The common feature of the reviewed studies is that they all investigate university students' strategy use in their English reading. In the study conducted by Weir et al. (2009), questionnaires were used to explore the relationship between the reading construct that is tested in IELTS and international students' academic reading when they were studying in the UK. In this questionnaire, participants were asked about information relating to their coursework reading, such as the sources of information and reading purposes they found important in their course study; how they read for assignments; the difficulties they had during reading assignments; and the language skills (listening, reading, writing, and speaking) which they found difficult in university study. One of the key characteristics of this questionnaire which I found useful was that it combined enquiry about reading strategies with that of reading purposes and reading difficulties. As illustrated by the framework in Chapter Three, readers' strategy use is closely intertwined with their English language proficiency and reading purposes. Weir et al. (2009) examined readers' language proficiency by means of probing reading difficulties. This is important in that only when these relevant elements are taken into account is it possible to make sense why certain strategies are used by participants. Another characteristic was that simple instructions were used at the beginning of each section, such as "The following purposes for reading are important on my course", "How I read for assignment:", "When I read for assignments I have difficulty with: ...". All these instructions helped participants bring to mind what they usually did in their everyday reading, contributing to the reliability and validity of the elicited answers.

Similarly, Taraban et al. (2000) used questionnaires to explore how students' deployment of reading strategies correlated with their college course performance. Two open-ended questions were asked at the beginning of the questionnaire about reading purposes and reading difficulties: a. "Describe some specific reasons (goals) a person might have for reading"; b. "What are some things that you can do if you are having difficulty understanding something that you are reading?" Closed questions, in this questionnaire, were used to examine participants' previous knowledge of reading strategies before college study and their deployment of reading strategies in college study. The feature of this questionnaire which I was interested in using in my following design was that both closed and open-ended questions were adopted, which allowed greater flexibility to explore participants' strategy use. In particular, answers to open-ended questions might help reveal some unanticipated information.

Unlike Weir et al. (2009) and Taraban et al. (2000), Phakiti (2008) used the same questionnaires twice to investigate changes in university students' strategy use over three months. This questionnaire is the most simply designed both in terms of content and format among the three. All thirty closed questions were presented in a uniform way, for instance, "I plan what to do before I begin to read English texts or tasks", "I make sure I clarify the goals of the reading tasks", and so on. Such simple and direct wording constitutes the key feature of this questionnaire. Like the simple instructions in the questionnaire by Weir et al. (2009), such straightforward items on reading strategies would help elicit reliable and valid data owing to the ease of understanding what was being asked.

Meanwhile, there were also some other features in these questionnaires that I would not follow in my questionnaire design, such as arbitrary use of multi-item scales (more than one question is asked about the same thing in order to avoid biased choice among

participants). For instance, in the questionnaire by Taraban et al. (2000) the strategy “scanning” was asked in three different ways as follows:

While reading, I jump forward and/or backward in the text to find the important information.
I search out information relevant to my reading goals.
I look for important information in the text.

Instead of using multi-item scales consistently among all tested strategies, Taraban et al. (2000) seem to use it arbitrarily in their questionnaire, and such practice could be observed in the questionnaires by Weir et al. (2009) (altogether three strategies) and by Phakiti (2008) (six strategies). The advantage of asking questions in more than one way is an important aspect of triangulation to ensure the reliability of collected data. However, according to Dörnyei (2007:104), multi-item scales require four to ten differently worded items to address one topic (see Section 5.3.3 for detail). Therefore, it is difficult to say whether such unprincipled/arbitrary practice can serve its purpose properly. Given the number of strategies to be investigated and the length of the questionnaire, it seems difficult to compromise in strategy research. On the other hand, even if all items used multi-items scales, it does not necessarily follow that the construct will help yield more objective results. This is because the effort required to fill in the lengthy questionnaire may also risk the validity of participants’ answers.

However, multi-item scales were built into section 2 of my questionnaire on students’ self-regulatory learning (see Section 5.3.3). The reason for adopting this practice in one part of my questionnaire design was that I wanted to investigate the interrelationship between the concept of self-regulatory learning proposed by Tseng et al. (2006) and the traditional reading strategies (as examined by these three questionnaires). Since the template constructed by Tseng et al. (2006) used multi-item scales, inevitably, by applying this template to my study, the same practice was used in order to keep the template’s original features.

Another feature which I would not adopt in my questionnaire design was the uniform format in the questionnaires by Weir et al. (2009) and Phakiti (2008), namely, all the questionnaire items were asked in one way by means of closed questions. There is no doubt that closed questions with prepared choices were easy for participants to answer, and this format would work well if the studies were only interested in examining certain strategies. In this study, however, Chinese students' strategies use was considered intertwined with their English language proficiency and reading purposes. Although the tested strategies could be based on the critical review of those included in these three questionnaires, it was unlikely that the reading difficulties that these students had in their master's study could be anticipated and provided in advance. In addition, there were always personal strategies which were deployed by these students, but were not considered in my questionnaire. These issues could be solved if the participants were given a chance to voice their own account by means of open-ended questions.

As for the reliabilities of these three questionnaires, Phakiti's (2008) questionnaire shows high reliability in its internal consistency: Cronbach alpha = 0.95. Although Weir et al. (2009) and Taraban et al. (2000) do not carry out a reliability test, Weir et al. (2009) conduct a pilot study, and their questionnaire construct is mainly based on answers to the 13 open-ended questions in this pilot study, and the literature review. Similarly, Taraban et al. (2000) construct their questionnaire in accordance with the literature review on reading strategies in an academic context.

As far as the thirty reading strategies examined in these three questionnaires are concerned, they can be placed into three sub-categories -- textbase strategies, situation model construction strategies, and comprehension monitoring strategies – in line with the framework proposed in Chapter Three. In Tables 5.1, 5.2 and 5.3, the three questionnaires are compared and contrasted in relation to their coverage of these strategies. The left-hand column lists the strategies investigated in each questionnaire,

interpreted in line with the academic reading strategies of Grabe and Stoller (2002, p.16); MARS (Metacognitive Awareness of Reading Strategies Inventory) (Mokhtari and Reichard, 2002); and SORS (Survey of Reading Strategies) (Mokhtari and Sheorey, 2002). In the right-hand column are the corresponding original testing items used by the researchers. In all three cases, participants were asked to indicate the extent of agreement or disagreement, from 'definitely agree' to 'definitely disagree'. All the items were worded in English. The letter in brackets after an item indicates in which study it was used (see the key at the end of the table).

Textbase Strategies (TBS) (16)	
Strategies	Questionnaire items
1. skimming	"I quickly look through the whole of the text for a general understanding before doing anything else." (W) "I briefly skim the text before reading." (T)
2. previewing text before reading	"I first get an overall meaning of the text for example by reading the first paragraph and the conclusion, and the first sentence of the other paragraphs."(W) "I gradually understand what the text is about by reading the sentences slowly and carefully in the order they occur."(W)
3. predicting	"I try to anticipate information in the text." (T) "I think what is going to happen next while reading." (P)
4. taking notes	"I make notes on relevant points from the text as I go along." (W) "I make notes when reading in order to remember the text." (T)
5. guessing unknown words	"If I do not know the meaning of a word in the text, I try to work out its meaning." (W) "While I am reading, I try to determine the meaning of unknown words that seem critical to the meaning of the text." (T) "I identify or guess meaning of unknown words using context clues." (P) "I guess meaning of unknown words using root words." (P)
6. confirming prediction	"As I read along, I check whether I anticipated information correctly." (T)
7. scanning	"While reading, I jump forward and/or backward in the text to find the important information."(T) "I search out information relevant to my reading goals." (T) "I look for important information in the text."(T) "I scan through the reading and tasks before I actually begin doing it." (P)
8. underlining information in text	"I remember where relevant information is or mark its location for later use in writing my assignment." (W) "I try to underline when reading in order to remember the text." (T)

9. paying attention to text structure	<p>"I try to understand how the text is organised: how the ideas and details connect with each other." (W)</p> <p>"I try to understand the relationships between ideas in the text." (P)</p>
10. focusing on important information	<p>"I read slowly only those sections of the text I have marked as relevant when going through it quickly before." (W)</p> <p>"I read the text slowly all the way through even if some parts do not seem relevant to my assignment." (W)</p> <p>"I pay greater attention to important information than other information in the text."(T)</p> <p>"I know which information is more or less important. (P)</p>
11. generating questions while reading	<p>"I use my knowledge of the subject to generate questions about the text."(T)</p> <p>"When reading, I ask myself questions about the text content to better remember the text." (T)</p>
12. summarising text information	<p>"I summarize/paraphrase the material that I am reading in order to remember the text." (T)</p> <p>"After I have read the text, I review it." (T)</p> <p>"After I have read the text, I summarize it." (T)</p> <p>"At the conclusion of reading, I try to construct an overall summary." (T)</p> <p>"I summarize the main information in the text." (P)</p>
13. visualising text information	<p>"When appropriate, I try to visualize the descriptions in the text that I am reading in order to remember the text." (T)</p>
14. connecting one part of the text to another	<p>"I look back at previous parts of the text to check meaning." (W)</p> <p>"I try to relate the important points in the text to one another in an attempt to understand the entire text." (T)</p>
15. translating into L1	<p>"I translate text or reading tasks into my first language." (P)</p>
16. using grammatical knowledge	<p>"I apply my learnt grammar rules while reading or completing reading tasks." (P)</p>

Table 5.1 Questionnaire items on TBS from Weir et al. (W), Taraban et al.(T), and Phakiti (P)

Situation Model Construction Strategies (SMS)(6)	
Strategies	Questionnaire Items
17. associating with background knowledge	“While reading I try to relate content to what I know already and judge its value.” (W) “While I am reading I reconsider and revise my background knowledge about the subject based on the text’s content.”(T) “I try to draw on my knowledge of the subject to help me understand what I am reading.”(T) “As I am reading, I distinguish between information that I already know and new information.”(T) “I relate the information from the reading or tasks to my prior knowledge or experience.” (P)
18. integrating information with other sources	“I integrate information from the text I am reading with information from other texts I have already read.”(W)
19. making inferences	“When information critical to my understanding of the text is not directly stated, I try to infer that information from the text.” (T) “I try to interpret hidden ideas/meanings in texts.” (P)
20. checking how text content fits purpose	“I evaluate whether what I am reading is relevant to my reading goals.” (T)
21. judging how well objectives were met	“As I am reading, I evaluate the text to determine whether it contributes to my knowledge/understanding of the subject.” (T) “I evaluate my plans or goals of my reading constantly.”(P)
22. critiquing the author	“I read critically to establish and evaluate the author’s position on a particular topic.” (W) “After I have read the text, I evaluate what I have read.”(T) “I analyze what the author means or tries to say.” (P)

Table 5.2 Questionnaire items on SMS from Weir et al. (W), Taraban et al.(T), and Phakiti (P)

Comprehension Monitoring Strategies (CMS)(8)	
Strategies	Questionnaire Items
23. awareness of reading purposes	"I think carefully to ensure that I know exactly what I will be looking for before I start reading."(W) "I set goals for reading (e.g., studying for a multiple-choice test, reading for a research paper)."(T) "I make sure I clarify the goals of the reading tasks." (P) "I plan what to do before I begin to read English texts or tasks." (P) "I make sure I understand what has to be done and how to do it." (P)
24. determining what to read	"I think of key words and quickly look for them or words with similar meanings to check if the text is worth reading more carefully." (W) "I look at the titles or headings of the text before deciding to read it carefully." (W)
25. rereading	"I read material more than once in order to remember the text."(T) "I reread texts or tasks several times when I feel I do not understand them." (P)
26. taking steps to repair faulty comprehension	"When I think that I am not comprehending the text, I change my reading strategies (e.g. slowing down, re-reading)." (T) "I immediately correct my misunderstanding or mistakes in reading tasks when found." (P)
27. checking comprehension	"After I have read the text, I consider other possible interpretations to determine whether I understood the text." (T) "After I have read the text, I try to interpret what I have read." (T) "I check if I understand the text or task." (P) "I double-check my reading comprehension or performance." (P) "I check my own performance and progress as I move along the reading tasks." (P)
28. identifying difficulties	"When I am reading, I note when I am interested in or bored with the text." (T) "I notice when I feel worried, tense or unmotivated while reading." (P) "I notice when and where I am confused in the text." (P) "I know when I lose concentration while reading." (P)
29. adjusting reading rate	"I vary my reading style depending on my reading goals." (T) "I know when I should read more quickly or carefully."(P) "I am aware of time limitations and constraints." (P) "I try to understand the content without looking up every word." (P)
30. planning what to do/what steps to take	"I consider steps needed to complete the reading." (P) "I know what to do if my plans do not work efficiently."(P) "I know how much the reading and tasks remain to be done while reading." (P)
Total: TBS: W: 7; T: 12; P: 8; SMS: W: 3; T: 5; P: 4; CMS: W: 3; T: 6; P: 7	

Table 5.3 Questionnaire Items on CMS from Weir et al. (W), Taraban et al.(T), and Phakiti (P)

It is noted that some strategies in Table 5.1 and Table 5.2 might be considered to tap readers' motor actions rather than their mental activities, such as "underlining information in text" and "rereading". Arguably, a reader may underline some sentences while s/he is thinking of something else, and a reader may reread but not concentrate any more than s/he did the first time. When such reading activities are disconnected from

corresponding cognitive processing, these activities reveal readers' inadequacy in reading efficacy rather than their effortful cognitive resources during reading. Nevertheless, it is also possible that a reader does focus on the text information by underlining the sentences, and tries to reread in order to understand the text meaning. In this case, the deployment of these strategies shows readers' conscious cognitive effort. If these strategies were excluded from my item pool due to the potential risk of their examining motor actions, the chance of tapping readers' real cognitive processing in this regard would be diminished as well.

In addition, some strategies in the above tables, owing to the nature of item wording, are restricted to exploring only one dimension of readers' cognitive processing, rather than multidimensional aspects. For instance, the strategy "summarizing text information" (No. 12 in Table 5.1) mainly focuses on summarising the text meaning after the reader has finished reading it. In reality, this strategy could either be deployed to engage in a huge amount of activity (of summarizing the whole text) that might take a long time, or it could be a momentary attempt to come up with a brief summary of a sentence, a paragraph, or parts of a text. Given the fact that, in this study, questionnaires were used to investigate readers' general belief of what they normally do in their course work reading, this indicates that findings on their deployment of trait strategies can offer us only part of the information about their complex cognitive processing in academic reading. With regard to the transitory nature of state strategy use (such as "summarising text information", "underlining information in text", and "rereading" as discussed above), this aspect will be investigated in Chapter Six by means of think-aloud.

As shown in the above tables, textbase strategies constitute the biggest proportion of items among the three categories (16), followed by comprehension monitoring strategies (8), and situation model construction strategies (6). This proportion suggests that the overall focus of these questionnaires has been on textbase processing. If my item pool

was to be adequate for its purpose of examining any potential shift in Chinese students' strategy use from textbase strategies to situation model construction ones, more situation model construction strategy items would clearly be needed.

Given my review question: What useful features could be applied to my questionnaire design from these previous questionnaires? the answers derived from evaluating these three questionnaires were as follows. First, although my research interest was in changes in Chinese international students' strategy use, it was essential to examine these students' strategy use together with their reading purposes and reading difficulties, as exemplified in the questionnaires by Weir et al. (2009) and Taraban et al. (2000). Knowledge of these two regards helps contextualise these students' strategy use, especially regarding exploring the interrelationship of reading strategies, English language proficiency, and reading purposes. Second, special attention should be paid to the questionnaire design in terms of format and item wording. Building on the best practice in the three questionnaires, as described above, I prioritized using both closed and open questions in my questionnaire. In addition, simple language was important in instruction and item wording, because any confusion the participants might have about what was being asked would affect the reliability and validity of the collected data. Lastly, although adaptation was needed in my study, it seems that the strategies examined by these three questionnaires could represent well the dimensions to be tested in academic reading.

In all, these three questionnaires provided me with important information for my questionnaire design. It is noted that the repertoire of reading strategies in the above three tables has largely encompassed the strategies identified in Chapter Four, despite the strategies being named differently. Specifically, in Chapter Four there was a strategy from Feng and Mokhtari's (1998) study, which they termed 'monitoring comprehension'. We can see from Table 5.3 that this strategy is successfully deconstructed in the three

reviewed questionnaires, in various ways, into a total of eight micro-level items of cognitive processing including “re-reading”, “taking steps to repair faulty comprehension”, “checking comprehension”, etc. As for the strategy ‘commenting’ (Feng and Mokhtari’s, 1998), two aspects of commenting are separately examined by the questionnaires, namely, commenting on the author, “critiquing the author”, or commenting on the text, “evaluating the text” (see Table 5.2). It seems that the strategies tested by these three questionnaires focus on specific cognitive processing, rather than on a general cognitive category like Feng and Mokhtari’s (1998). In order to capture precisely the interactive and dynamic features of academic reading, I decided that my questionnaire construct should follow the more detailed set of strategies in Tables 5.1, 5.2, and 5.3. However, to investigate Chinese students’ academic reading in their coursework study, more means of investigating higher level processing strategies were needed for my construct.

Having established the basis on which the specific items in my questionnaire should be assembled, I will focus in the next section on the construction of my questionnaire.

5.3 The Construction of My Questionnaire

The purpose of this questionnaire was to explore Chinese students’ trait strategy use in a task free situation. In order to collect data which could help interpret these students’ trait strategy use, my questionnaire consisted of three sections: demographic questions, the perceived reading processes, and the perception of English reading.

Both closed and open-ended questions were used in the questionnaire design. Closed questions have the advantage of being quick for respondents to complete, but they are only suitable for eliciting certain sorts of information. They were used in this questionnaire in the reading processing section, where it was relatively easy to create descriptions of strategies that respondents would recognize. It is argued that both even and odd number rating scales (such as six- and five-point scales) generate genuine

responses from respondents, but using a six rather than a five point Likert-scale avoids some respondents' opting for the "middle category" (Dörnyei, 2003:37; Cohen, 2000:254). In order to avoid the mid-point category in this study ("neither agree nor disagree"), all the questions used a six-point Likert-scale, ranging from "strongly disagree" to "strongly agree". In addition, negative wording was used in that different wording patterns help avoid one-sided rating scales from the respondent and the effects of 'acquiescence bias' (ibid.:55-6).

On the other hand, open-ended questions offered the respondents a chance to talk about their coursework reading, in particular, their reading difficulties and their personal strategies, so that they would not feel that "their personal opinions or experiences [had] to fit the straitjacket of prescribed answers" (Gillham, 2000:34). Unlike Taraban et al. (2000) who presented open-ended questions at the beginning of the questionnaire, my open-ended questions were asked at the end for the following two reasons. Firstly, answering these questions at the very beginning might prejudice the attention given to the closed items at the end. Secondly, they might also discourage people from finishing the questionnaire (Dörnyei, 2003:48).

All the instructions and questionnaire items were written in simple English with a simple syntactic structure. The reason for using English rather than Chinese was that all the participants in this study were master's students studying in the UK. Therefore, they were not anticipated to encounter any language problems in understanding the item wording. Of course it must be recognized that, as readers of the questionnaire, the respondents were potentially subject to the same processes that were being researched. The simple English aimed to minimize any problems in this regard, but a much wider question arises for researchers generally, regarding the effect on research data of the respondents' approaches to reading the questionnaire.

On the cover of the questionnaire was a letter written to explain the purposes of my study, and to assure the correspondents that all data would be treated as confidential. It was also stressed that there were no right or wrong answers: what mattered were their personal sincere answers, which would guarantee the success of the investigation (Dornyei, 2003, p.27) (Please refer to the complete questionnaire in Appendix 2. The following discussion makes reference to items as numbered there).

5.3.1 Demographic Section

The demographic questions gathered data about the respondents' name, sex, age, year(s) of studying in UK, the course studied, and whether they had passed College English Test (CET) Band 4, or Band 6. Information collected in this section offers us some background of these participants.

5.3.2 Reading Purposes

The reading processing section started with reading purposes, and was constructed to mirror the ones by Weir et al. (2009) and Grabe and Stoller (2002:13), as indicated below in quotation marks. In a university context, reading should be purposeful and pertinent to coursework study, with the aim of preparing for classroom discussion, presentation, assignments, examinations, and so forth. Usually reading tasks involve reading around different resources, and require students to be capable of skimming to know what the text is about, and scanning to locate relevant information. In addition, academic reading also requires student's ability to combine different resources, and to make evaluative comments. The following five items are all centred around the unique reading purposes associated with an academic context.

I think that these are important activities in my coursework reading.

(Please enter the number for each item using the scale 1 – 6: 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=partly agree; 5=agree; 6=strongly agree)

1. Searching for information which is relevant to my study.	
2. Going through a text quickly to see what it is about.	
3. Understanding the structure of a text: how the main ideas and the supporting details are organised to express the author's ideas.	
4. Combining together various pieces of information from different texts to support my own ideas in assignments / examinations.	
5. Gaining general understanding of the main ideas in a text.	

In this section, item No.1 examines the purpose “to search for simple information”; item No.2 measures one of the most frequently used purposes in academic reading: “skimming”; item No.3 taps the purpose of “learning from text”; while item No.4 examines the purpose: “to integrate information”. This item covers three individual reading purposes: “reading to write (or to search for information needed for writing)”, “reading to critique texts” and “integrating information”. The reason for combining these three purposes is that they are closely intertwined in reading. Integration involves the processes of constant assessment of whether different pieces of information are complementary, conflicting or supporting, and whether they are helpful for the writing tasks (Grabe and Stoller, 2002, p.14). The last item No.5 investigates the purpose of “generating understanding of the main ideas in a text”.

5.3.3 Self-regulatory Learning Strategies

The second section focused on reading processing (from No. 6 to No. 25), and examined Chinese students' trait knowledge of self-regulation in the context of academic reading. The concept of self-regulation refers mainly to the techniques that learners use to “transform their mental abilities into task-related academic skills” (Zimmerman, 2001:1), in particular, learners' reflections of self-management in their own study. Tseng et al. (2006) use this concept to examine learners' deployment of vocabulary strategies, and claim that questions of this kind render more reliable information than traditional strategy

instruments. Since I adopted Tseng et al.'s focus on learners' trait self-regulation, it is worth a brief digression to explain their rationale for it.

Tseng et al.'s (2006) argument is that traditional strategy instruments, especially the most used inventory -- the SILL (Oxford 1990) -- are flawed in design, in that the behaviour-oriented items are measured by scales of frequency (Dörnyei, 2005) (see Section 3.3 for details). The mismatch between item wording and the rating scales indicates that two different types of cognition have been mixed up in the construct of strategy. The mismatch also indicates that it has been taken for granted that strategy use and habitual strategic learning have the same underlying trait (Tseng et al., 2006:82). This, in Dörnyei's (2005:182) view, is considered to be "psychometrically not justifiable".

Grounded in education psychology, the concept of self-regulation examined by Tseng et al. (2006) aims to "target the learner trait of self-regulatory capacity rather than survey specific behavioural habits" (p.84). In the questionnaire used by Tseng et al. (2006), five aspects of self-regulation are included: commitment control, metacognitive control, satiation control, emotion control, and environmental control. Commitment control, according to Tseng et al. (2006), refers to how learners keep their original goal commitment. Metacognitive control, on the other hand, focuses on learners' concentration monitoring, while satiation control examines how learners get rid of boredom, and generate more interest in the task. Emotion control is about managing disruptive moods, and generating positive emotional states in the implementation of tasks. The last is environmental control, which refers to exploiting positive environmental influences in the pursuit of a difficult goal (p.85). All 20 items (see Appendix 3) have used simple wording, and each topic has been worded in four different ways.

As noted, Tseng et al. (2006) put forward this 'new' construct to investigate learners' strategy use in vocabulary learning as a solution to avoid problematic traditional

instruments. Although their own questionnaire is applied to vocabulary research, they believe that the underlying theory and the questionnaire construct provide a solid template, which can be applied to other learning domains.

However, Wenden (1998, 2002) and Alexander et al. (1998) point out that self-regulatory learning largely mirrors the notion of metacognition, which refers to students' self-knowledge, world knowledge, task knowledge, and strategy knowledge (declarative knowledge), as well as planning for learning, monitoring a learning task, and evaluating learning (procedural knowledge) (Chamot, 2005:124). Zhang's (2010:332) categorisation of metacognition -- person/self-knowledge; task knowledge; and strategy knowledge -- greatly resembles the above five constructs by Tseng et al. (2006). Because of the similarities in the underlying constructs, self-regulation and metacognition are regarded as interchangeable concepts (Dörnyei, 2005:192).

In order to embrace this new template in reading strategy research, the same five features of self-regulatory learning that Tseng et al. (2006) used were included, as well as their multi-item scales format. That is to say, each topic was worded in four different ways, as explained below, and respondents were asked to tick the one that applies to their personal reading experience, from 'strongly agree' to 'strongly disagree'.

Commitment control strategy was investigated by items No.14, 18, 20, and 23:

- 14. I have my special methods to carry on reading until I achieve my goals.
- 18. I know I can overcome the difficulties I encounter during reading.
- 20. When reading, I know that I won't give up halfway.
- 23. I feel like giving up when I find a text too difficult to understand.

Metacognitive control strategy was worded differently in items No.7, 11, 13, and 17:

- 7. I think that my techniques of controlling my concentration when reading are effective.
- 11. When reading, I am satisfied with myself that I never put off the reading tasks.
- 13. When reading, I have my own techniques to stay concentrated on the reading materials.
- 17. I think that my methods of managing to get reading tasks done in time are effective.

Satiation control strategy was examined by means of items No.8, 12, 22, and 24:

- 8. When I feel bored with my reading, I know how to adjust my mood to stay concentrated.
- 12. I feel satisfied with my ways of getting rid of boredom during reading.
- 22. I am confident that I can cope with boredom generated during reading.
- 24. I am confident that I can finish reading tasks in time.

Emotion control strategy was explored through items No.6, 10, 16, and 21:

- 6. I feel satisfied with my methods to reduce the stress generated by reading tasks.
- 10. When I feel stressed about reading, I try to solve this problem immediately.
- 16. Once the freshness and excitement of doing academic reading is gone, I easily become impatient with it.
- 21. When I feel stressed about reading, I know how to cope with it.

Environmental control strategy covered items No.9, 15, 19, and 25:

- 9. When reading, I am aware that the study environment matters.
- 15. I look for a quiet environment when I want to do some reading.
- 19. I know how to make the environment more suitable so I can concentrate on reading.
- 25. If the environment becomes unsuitable when I am in the middle of reading, I try to sort it out.

Participants' answers to the above items sought to reveal the relationship between their self-regulation and their deployment of reading strategies. Furthermore, findings from this section are used later to shed light on the issue of whether this measurement, as proposed by Tseng et al. (2006), is robust enough to replace the traditional instruments.

5.3.4 Reading Strategies

The investigation of reading strategies constituted the main part of the questionnaire. Thirty-three strategies were examined, using a pool of items compiled on the basis of the reviewed questionnaires. In addition, another three academic reading strategies were added from Grabe and Stoller (2002:16) to strengthen the coverage of aspects underrepresented in previous research, among which, two are situation model construction strategies: "critiquing the text", and "reflecting on what has been learnt from the text", and one is a textbase strategy: "using discourse markers to see relationships".

At the end of the strategy section, respondents were asked to write down any of their own reading approaches that might have been missed in the questionnaire. In this way, it was hoped that any additional or “idiosyncratic strategies” would also be covered.

The categorisation of items as examples of textbase strategies (TBS), situation model construction strategies (SMS), and comprehension monitoring strategies (CMS) is presented in Table 5.4.

Textbase Processing Strategies (TBS) (15)	Situation Model Construction Strategies (SMS) (12)	Comprehension Monitoring Strategies (CMS) (6)
28. skimming 30. scanning 31. predicting 32. guessing unknown words 34. confirming prediction 35. making notes 37. visualising text information 38. generating questions while reading 39. underlining information in text 41. focusing on important information 43. using discourse markers to see relationships 44. using grammatical knowledge 46. translating into L1 48. connecting one part of the text to another 51. summarising text information	26. awareness of reading purposes 33. associating with background knowledge 36. paying attention to text structure (during reading) 40. integrating information with other sources 42. making inferences (during reading) 49. critiquing the author (during reading) 53. judging how well objectives were met 54. paying attention to text structure (after reading) 55. making inferences (after reading) 56. evaluating the author (after reading) 57. reflecting on what has been learnt from the text 58. critiquing the text	27. planning what steps to take 29. determining what to read 45. re-reading 47. taking steps to repair faulty comprehension 50. adjusting reading rate 52. checking comprehension

Table 5.4 Categorisations of TBS, SMS and CMS used in my questionnaire construct

The layout of the questionnaire was designed to capture three stages of academic reading in line with Pressley and Afflerbach (1995): pre-reading, during reading, and after reading. It may be argued that, in reality, readers’ cognitive processing during reading is not operating in a way which can be divided explicitly into these three stages, in that cognitive processing can be dynamic throughout reading owing to the collaboration between readers’ English language proficiency, their knowledge of strategic reading, and the specific reading purposes. Therefore, the order of tested

strategies (as presented in Table 5.4), as Hudson (2007:109) posits, does not imply the importance of linear, sequential, or hierarchical order. In this section, respondents were asked to tick the one that applied to their personal reading experience from ‘strongly agree’ to ‘strongly disagree’.

The first reading strategies section (see Table 5.5) -- “Before I start to read for my coursework assignments” – examined mainly whether respondents were fully aware why they were reading, and how and what they must read in their coursework study. Five pre-reading strategies were included from items No.26 to No.30: “awareness of reading purposes”, “planning what steps to take”, “skimming”, “determining what to read”, and “scanning”.

Before I start to read for my coursework assignments,

26. I think about what I am going to look for in a text.
27. I usually know what to do if I find myself having trouble understanding certain parts of a text.
28. I often skim a text quickly to get a general idea of its content.
29. I usually make a decision on whether I need to read a text carefully from the titles or headings it contains.
30. I search in a text for those passages which contain important information.

Table 5.5 Pre-reading

The second section started with the instruction: “During the process of reading a text”. It investigated respondents’ general inclinations during their reading. The 20 items (from No.31 to No.50) presented in Table 5.6 examined 20 strategies that might be deployed during reading, focusing on readers’ cognitive engagement at the levels of textbase understanding, situation model construction, as well as comprehension monitoring. As far as textbase strategies are concerned, there are 12 items which form a major part of the cognitive processing, namely, “predicting”, “guessing unfamiliar expressions”, “confirming predicting”, “making notes”, “visualising text information”, “generating questions while reading”, “underlining the important parts”, “focusing on important

information”, “using discourse markers to see relationships”, “using grammatical knowledge”, “translating into L1”, and “connecting one part of the text to another”. Intertwined with these text processing strategies are five situation model construction strategies, which are “associating with background knowledge”, “paying attention to text structure”, “integrating information with other sources”, “making inferences”, and “evaluating the author”. In addition to the above textbase strategies and situation model construction strategies, there are three comprehension monitoring strategies, namely, “re-reading”, “taking steps to repair faulty comprehension”, and “adjusting reading rate”.

During the process of reading a text,

31. I tend to think about what is going to occur in a text.
32. when I encounter new words in a text, I always look them up in a dictionary.
33. I usually use my background knowledge to help me understand the content of a text.
34. I check constantly whether I have anticipated correctly as I acquire more information in a text.
35. I often write down my own comments on some ideas in a text.
36. I think about the structure of a text, i.e, how the arguments and supporting details have been organised together.
37. I try to visualise the content of a text in order to remember it.
38. I often find myself asking questions about a text as I read it.
39. I usually underline the important passages for further understanding.
40. I tend to link text content with other relevant information which I have read elsewhere.
41. when I come across important parts in a text, I tend to read slowly to make sure that I understand every sentence.
42. I make inferences from the information in the text if the arguments are not clearly stated.
43. I always get clues with the help of linking words about the logical relationships between ideas in a text.
44. I often use my grammatical knowledge to help me understand a text when I have difficulties with the language.
45. I re-read the parts of a text which are important to my reading tasks.
46. I feel more confident if I work out the Chinese meaning of relevant passages in a text.
47. if I realise I am having difficulty understanding certain parts of a text, I slow down.
48. I often move forwards and backwards to piece together the details of the main argument.
49. I think about whether I agree with the author.
50. I always read at the same speed to make sure I fully understand a text.

Table 5.6 During reading

The third section examined respondents’ strategy use after their reading, with the instruction “After I finish reading a text” (see Table 5.7). This part tested mainly whether respondents further checked their comprehension, and also whether they associated the text information with their reading tasks. The strategies in this section included

“summarising text information”, “checking comprehension”, “judging how well objectives were met”, “paying attention to text structure”, “making inferences”, “critiquing the author”, “reflecting on what has been learnt from the text”, and “evaluating the text”.

After I finish reading a text,

51. I like to construct conclusions, or a summary, of what I have read.
52. I usually check in different ways whether I have fully understood it.
53. I always check whether I have found the information I needed in the text.
54. I think about the structure of a text, i.e, how the arguments and supporting details have been organised together.
55. when I am trying to work out the main argument, I make inferences from the information in the text.
56. I evaluate whether the writer’s ideas are convincing.
57. I often think about what I have learnt from a text.
58. I like to comment on the strengths and weaknesses of a text.

Table 5.7 After reading

To explore the strategies which were used by participants, but not mentioned in the questionnaire, an open-ended question was asked immediately afterwards: “If you use some other reading methods which are not included anywhere above, please list them below”.

At the end of the questionnaire were two open-ended questions, asking about respondents’ perceived strengths and difficulties in their academic reading:

Please answer the following questions based on your own experience of academic reading.
 Which aspects of coursework reading do you find easy? Please be specific.
 Which aspects of coursework reading do you find difficult? Please be specific.

Having presented the content of my questionnaire, I will move on to address the procedures of data collection in the next section.

5.4 Procedures

The instrument was examined and approved by the ENCAP Research Ethics Policy Officer. It was made clear in writing to the participants that they had the right to withdraw

at any stage of the research. In addition, data collected among them would be used only in this study, and their data would be treated as confidential.

A two-stage pilot was carried out among similar groups of Chinese students in the UK before collecting data. The first stage involved individual piloting focusing on item wording and timing. Three Chinese PhD students who were studying in the UK did the questionnaire individually, immediately followed by an interview. This semi-structured interview explored mainly how participants felt about each item, especially the ones they found ambiguous. All their feedback was taken on board in the subsequent item modification. For instance, one of the students pointed out that the double negative expression in item No.38 was difficult to understand. As a result, the original wording “I seldom finish reading a text without asking myself questions” was rephrased as “I often find myself asking questions about a text as I read it”.

At the second stage, the revised questionnaire was piloted on twenty-nine Chinese international students, who had come here to study their MSc at another university in Cardiff. Their situations were very similar to the participants in the main study. This time the focus was on piloting the clarification of wording, timing, and identifying potential problems. Analysis of the data showed that it had a good degree of reliability (Cronbach's Alpha = 0.959) relative to all the questionnaire items presented in each section; therefore, the questionnaire was judged to be reliable enough to be used to collect data for this study.

Once it has been piloted and modified, the questionnaire was issued to the targeted group of participants twice in one academic year (October/November 2008, and April/May 2009), in order to examine the development of Chinese students' trait strategies. All the participants were from the Cardiff University Business School. Permission was obtained from the lecturers, which enabled the questionnaire to be

administered during a break in class, or afterwards. On a few occasions, the questionnaire had to be completed at home. I was present each time (except for those which were completed at home) to explain the purpose of the study, and it was also made clear that there was no time limit in completing it. Questionnaires completed in class took approximately 15-20 minutes.

There were 121 students who filled in the questionnaire at Time1, and by Time2 there were 90 students left. Those who had failed to sign the 'consent to participate' declaration were excluded, together with those who completed the questionnaire only once, either at Time1 or Time2. In the end, 70 participants completed the same questionnaire twice, and they were all from mainland China. Their mean age was 23 years and 4 months at Time1 ($sd=1$ year and 9 months), and the average time that they had stayed in English speaking countries at Time1 was 12.3 months.

The results were entered directly into SPSS. Any missing items in the questionnaires were estimated, using the listwise function in SPSS. This function computes an estimate based on the arithmetic mean of the other given values. Those items which were written with reverse polarity – No. 16, No. 23 -- were reverse scored. For instance, the six scales -- from "strongly disagree" to "strongly agree" – are normally scored "1" to "6". For these two, however, if the respondents ticked "strongly disagree", since they were negatively worded, that would have been scored "6" instead of "1". The two items in question are:

- 16. Once the freshness and excitement of doing academic reading is gone, I easily become impatient with it.
- 23. I feel like giving up when I find a text too difficult to understand.

Having defended the rationale for my questionnaire construct and introduced the procedures of data collection, in the next section, I will focus on data analyses. Results

yielded from the questionnaires offer us answers to the research question: How do their trait strategies develop in the course of one-year master's study?

5.5 Data Analyses

Data analyses in this section are in two parts, quantitative and qualitative. Quantitative analysis on the numerical answers to the closed questions will provide us with answers pertinent to the longitudinal changes in respondents' trait strategy use, as well as their orchestration of these strategies. On the other hand, qualitative analysis of the answers to the open questions helps explain their choices of strategies, particularly relating to their perceived reading difficulties.

5.5.1 Quantitative Analysis

Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted first to examine the normality of data distribution. Results indicate abnormal distribution of reading purpose (RP1, RP2) and reading strategy (RS1, RS2) both at Time1 and Time2 (Kolmogorov-Smirnov: RP1, $p=0.014$, RP2, $p<0.001$; RS1, $p=0.083$, RS2, $p=0.002$; Shapiro-Wilk: all these four variables, $p<0.001$). Only self-regulatory learning strategies manifested normal distribution (Kolmogorov-Smirnov: SR1, $p=0.200$, SR2, $p=0.200$; Shapiro-Wilk: SR1, $p=0.564$, SR2, $p=0.703$). Given that two of the three categories displayed abnormal distribution, non-parametric tests were used in the data analysis.

In the following sections, all the findings were interpreted literally, that is, with the assumption that what Chinese students had reported they were doing is actually what they were doing. However, it is recognized that it is also possible they were simply better at noticing their practices, not least because I had drawn their attention to them at Time1.

Descriptive analyses were conducted first to examine the means and standard deviations of the tested constructs. The results are presented in Table 5.8. Comparing

Time2 with Time1, there were increased means in the respondents' reported use of self-regulation (Time1: 18.6; Time2: 19.45) and reading strategies (Time1: 136.97; Time2: 140.35), which could indicate that they developed a better awareness of what they had always been doing. However, the means of reading purpose dropped from 24.24 at Time1 to 23.98 at Time2. This is interesting, because as discussed in Chapter Three, reading purpose and the combinations of reading strategy are closely intertwined, namely, the orchestration of reading strategies is largely determined by the specific reading purposes. If these students had become more strategic in their academic reading, as shown by the increasing means of reading strategies, this should have been reflected in their awareness of reading purpose.

variables	T1Mean (Stand-error)	T2Mean (Stand-error)
R-Purpose	24.24 (0.40)	23.98 (0.48)
Self-Regulation	18.60 (0.34)	19.45 (0.36)
R-Strategy	136.97 (2.21)	140.35 (2.35)
TBS	62.87 (8.28)	63.79 (8.97)
SMS	49.74 (7.66)	51.37 (8.04)
CMS	24.36 (3.93)	25.20 (3.63)
Overall N: 70	235.58 (27.92)	242.14 (30.22)

Table 5.8 Means and Standard Errors at Time1 and Time2

Note: R-Purpose: reading purpose; Self-Regulation: Self-regulatory learning strategy; R-Strategy: reading strategy; N: number of respondents

When reading strategies were examined under the three sub-entities: TBS, SMS, and CMS (see Table 5.8), all of them displayed slightly increased means at Time2 compared with Time1: TBS1 62.87 vs. TBS2 63.78; SMS1 49.82 vs. SMS2 51.43; CMS1 24.36 vs. CMS2 25.20. These show that, in their perception, Chinese students believed that they became more cognitively active over time in terms of text meaning understanding, situation model construction, as well as comprehension monitoring.

In order to examine whether significant changes occurred in Chinese students' trait strategy use between Time1 and Time2, Wilcoxon signed rank tests were conducted. The result indicates that there was a significant difference in the overall reporting of their deployment of strategies ($Z=2.709$, $p=0.007$) between these two occasions, which leads me to reject hypothesis 2 for trait strategies, since that hypothesis stated that Chinese students would continue to read in the same way: characterised by textbase strategies in their academic reading at Time2.

Meanwhile, it is noted that there does not exist a large difference between the means of trait strategy use at Time1 and Time2, especially when the standard error is taken into account: 136.97 (2.21) / 140.35 (2.35). This suggests that although trait strategy use was statistically different over time, this may not be particularly meaningful in terms of effect size.

When such development was further examined at the levels of reading purpose, self-regulatory learning strategy, and reading strategy, reading purpose was the only category that did not display significant change ($Z=0.41$, $p=0.968$). Both self-regulatory learning strategy ($Z=2.930$, $p=0.003$) and reading strategy ($Z=2.176$, $p=0.03$) showed significant differences. The significant development in self-regulatory learning strategies suggests Chinese students' positive accommodation to UK university study, in particular, their successful self-regulation in coursework reading. It indicates that they became more competent in managing the elements which were related to their reading, such as their commitment, metacognition, satiation, emotion, as well as environmental impact. Although these elements cannot be seen as directly reflecting their cognitive processing, it can be inferred that these changes in their report of self-regulatory strategies were associated with their coursework reading indirectly, and were most likely to affect their strategic reading in a positive way.

The significant development of Chinese students' trait strategy use suggests changes in their cognitive processing. In order to explore in which dimension(s) the changes occurred, and what specific reading strategies displayed such changes over time, Wilcoxon signed rank tests were carried out again to examine the development of the three sub-entities of reading strategy: trait TBS, trait SMS, and trait CMS. The results show that trait SMS was the only entity which demonstrated significant changes ($Z=-2.204$, $p=0.028$) between Time1 and Time2. This result leads me to reject hypothesis 2 for trait strategies that Chinese students' cognitive processing would remain at the level of textbase processing at Time2. As far as TBS ($Z=1.298$, $p=0.194$) and CMS ($Z=1.922$, $p=0.055$) are concerned, the longitudinal changes did not reach significance. Paradoxically, these results lead me to partially confirm both hypothesis1 and hypothesis2 that Chinese students' choice of strategies will consist mainly of TBS at Time1; and at Time2 their academic reading will still be dominated by TBS deployment. One explanation for the lack of significant progress in their textbase processing is probably that they were still impeded by language decoding in their reading at Time2. As a result, comprehension monitoring also had to execute similar control and checking during reading, owing to the similar cognitive demand at the level of language processing both at Time1 and Time2. This intertwined relationship between textbase processing and comprehension monitoring could then have given rise to the insignificant change in their deployment of CMS.

The above results indicate significant changes in Chinese students' trait strategy use, in particular, trait SMS. But little is known about the development of each individual strategy. In order to examine changes in *each* individual trait strategy between Time1 and Time2, Wilcoxon signed rank tests were conducted again. The results show that there were three strategies displaying significant differences longitudinally. Among them were two situation model construction strategies: "integrating information with other sources" ($Z=1.973$, $p=0.048$), and "making inferences" ($Z=2.482$, $p=0.013$), and one

textbase strategy: “skimming” ($Z=2.101, p=0.036$). The development of these strategies, especially the combination of them, may suggest a developing pattern in their trait strategy use. The two situation model construction strategies – “integrating information with other sources” and “making inferences” -- show that the participants were more capable of integrating different information sources during reading, and they felt more competent in exploring the implicit messages in the text. Interestingly, the development of these two situation model construction strategies goes hand in hand with the textbase strategy “skimming”, which signifies an improvement in reading speed. In this context, it seems that the faster reading speed may have contributed to building up relevant background knowledge, which makes it possible to integrate various information sources and to infer the hidden ideas.

This combination, to some extent, indicates the level of interaction between textbase processing and situation model construction. Because “skimming” was the only text processing strategy which displayed significant change between Time1 and Time2, this suggests that in the participants’ perception, their deployment of textbase strategies did not undergo much progress during their master’s study. Because of weaknesses in language processing upon their arrival (see perceived reading difficulties below in Figure 5.2) and slow development in textbase strategies, the chance of engaging in critical evaluation was slim. This would explain why the transition to higher level processing remained at the level of integrating different information sources and making inferences, but not critiquing the author, nor evaluating the text. Because all these refer to trait strategy, there is partial support for both hypotheses that participants in this study will rely heavily on textbase strategies in their coursework reading, and that such text bound reading not only characterises their academic reading at Time1, but also at Time2.

Given the significant changes in Chinese students’ trait strategy use, it was important to explore the interactions between the time effect and these students’ deployment of TBS,

SMS and CMS. If an interaction was to be found between time and participants' deployment of reading strategies, this would mean that six-month master's study in a L2 context had triggered a significant impact on these students' strategy use. Data were transformed first by square transformation as a result of the abnormality in data distribution, so that the assumption for normal distribution was met (Kolmogorov-Smirnov: TBS1: $p=0.200$; TBS2: $p=0.200$; SMS1: $p=0.200$; SMS2: $p=0.200$; CMS1: $p=0.068$; CMS2: $p=0.090$; Shapiro-Wilk: TBS1: $p=0.182$; TBS2: $p=0.089$; SMS1: $p=0.646$; SMS2: $p=0.008$; CMS1: $p=0.153$; CMS2: $p=0.072$). It is noted that SMS2 is the only variable that fails to reach the result $p>0.05$ among the twelve variables. This suggests that special caution was needed in interpreting the results. A repeated-measures ANOVA was then conducted. A repeated model of 2 (Time1, Time2) \times 3 (TBS, SMS, CMS) (see Figure 5.1) was designed to measure the interactions between time and these three variables. The results show that there were no significant interactions between time and these reading entities: TBS: $F(1,69) = 0.978$, $p=0.326$; SMS: $F(1,69) = 3.386$, $p= 0.070$; CMS: $F(1,69) = 2.429$, $p=0.124$. The result that there was a lack of interaction between time effect and strategy deployment is probably brought about by the students' short stay in the UK. As predicted by the review in Chapter Four, time studying in Western academia is one of the key variables that would have had a strong impact on the developing course of Chinese students' strategic reading.

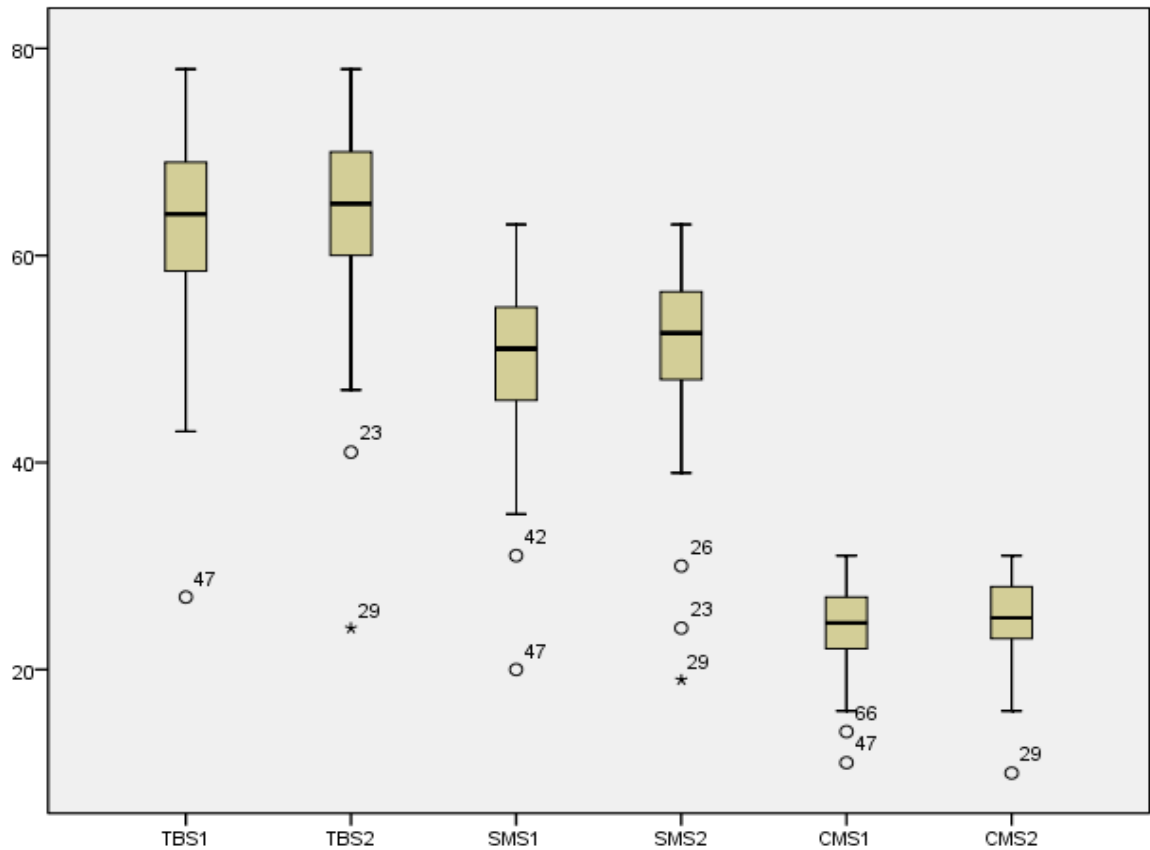


Figure 5.1 Comparison of respondents' deployment of TBS, SMS, and CMS at Time1 and Time2

Another aim of the data analysis was to tease out the relationship between reading purpose, self-regulatory learning strategy, and reading strategy. In doing so, this would offer clues as to how these entities were operating in Chinese students' coursework reading, in particular, whether the traditional measurement of learning strategy is "inappropriate" for examining students' cognitive processing as Tseng et al. (2006) claim, or whether the template recommended by Tseng et al. (2006) is robust enough to replace the conventional instrument. To try to answer all these questions, Spearman tests were conducted to examine the correlations between them.

Variables	RP1	SR1	RS1	RP2	SR2	RS2
RP1	---					
SR1	0.119	---				
RS1	0.196	0.600**	---			
RP2	0.299*	0.116	0.367**	---		
SR2	-0.071	0.628**	0.322**	0.111	---	
RS2	0.138	0.440**	0.496**	0.431**	0.634**	---

Table 5.9 Correlations between Reading Purposes (RP), Self-regulation (SR), and Reading Strategies (RS) at Time1 and Time2

Note: * $p < 0.05$; ** $p < 0.01$

Table 5.9 shows the results of the intercorrelation coefficients between reading purpose, self-regulatory learning strategy, and reading strategy. Interestingly, at Time1, reading purpose displayed no significant correlation with reading strategy ($r=0.196$, $p > 0.05$). But this situation changed at Time2 when the correlation between them became significant ($r=0.431$, $p < 0.01$). These results, to some extent, explain the decrease in means of reading purpose at Time2. Although at Time1 the higher means were supposed to be associated with respondents' stronger awareness of reading purpose, where such awareness turned out not to be associated with their strategy use, it might indicate their lack of focus and inadequacy in strategic knowledge upon their arrival. However, the significant correlations at Time2 between reading purpose and reading strategy suggest changes in their reading: they became more purposeful, and their choice of reading strategies was more closely related to reading purpose.

Self-regulatory learning strategies, on the other hand, displayed consistently high correlations with reading strategies. Concurrently, they were significantly correlated with

reading strategies at Time1($r=0.600$, $p<0.01$), and at Time2 ($r=0.634$, $p<0.01$). Longitudinally, self-regulatory learning strategies at Time1 were significantly correlated with reading strategies ($r=0.440$, $p<0.01$) at Time2. These results suggest that self-regulatory learning strategy significantly indexed the deployment of reading strategy on both occasions. The consistently high correlations between these two constructs imply that both self-regulatory learning strategies and traditional reading strategies were examining participants' trait knowledge of reading, but from different perspectives. As suggested in Section 5.3.3, the constructs of self-regulatory learning and metacognition not only overlap (Wenden, 1998, 2002; Alexander et al., 1998), but also are interchangeable (Dörnyei, 2005). Therefore, it can be inferred that the above high correlations may largely arise from the conceptual overlap between self-regulation and metacognition. While the traditional construct – the section on reading strategies in the questionnaire -- targeted the trait knowledge of cognitive processing in a task free situation, the section on self-regulatory learning focused on students' trait knowledge of metacognition.

However, although Tseng et al. (2006) attempt to shift strategy research to their choice of self-regulatory capacity, they still admit that self-regulation is part of a series of interrelated microprocesses (p.81). After all, how can metacognition alone be expected to reveal the complex cognition involved in language learning? In other words, “What do learners do to self-regulate?” (Cohen, 2007:41).

In all, quantitative analysis suggests that significant changes occurred between Time1 and Time2 with regard to Chinese international students' overall trait strategy use and their deployment of trait situation model construction strategies. In addition, a unique developing pattern emerged in their coursework reading, demonstrating significant changes in using the following three strategies: “integrating information with other sources”, “making inferences”, and “skimming”. These results indicate that a positive

development was taking place in these students' trait strategy use. In order to situate their trait strategy use into their coursework study, the following qualitative analysis will focus on their perception of academic reading, in particular, the changes in their perceived reading difficulties over time.

5.5.2 Qualitative Analysis

Unlike the results of the closed questions which were based on the ticking of predetermined choices, the following answers from the open-ended questions provide much insight into Chinese students' reading situation from their own perspective. At Time1 there were 29 respondents who answered the open-ended questions, while there were 43 at Time2. Qualitative analysis in this section is in two parts: changes in their personal strategies, and changes in their perceived approach to English reading over time.

All the personal strategies (copied from questionnaires) are presented verbatim in Table 5.10. Altogether, there were 13 strategies, with seven given at Time1 and five at Time2.

Time1	Time2
<ol style="list-style-type: none"> 1. I make some diagrams to help myself to summarise the key ideas. 2. Reading the menu, choose what I am interested in. 3. General reading, not full reading. 4. I read introduction and conclusion at first. 5. I read the book list. 6. Sometimes I think listen music that is such a good way when I am reading. 7. I think it depends on the task of my reading. If I am reading for collecting the information of my assignment, I will concentrate on the information, the ideas, supporting data in the text. In this case I will not try to understand all the information in the text. If I am reading for my study, I need to read slowly and try to understand all the information in the text. 	<ol style="list-style-type: none"> 1. Discuss and exchange opinions with friends / study group. 2. Search the Chinese relevant articles to support understanding; 3. I usually read the abstract first and the conclusion of the article. 4. If I need some information, I always read the first sentence to decide what is important paragraph. 5. Before I read an article, I always read some Chinese article to learn some background about the area.

Table 5.10 Personal strategies elicited at Time1 and Time2

At Time1, the strategies were mainly about 'summarising' (Time1:1), "determining what to read" (Time1:2, Time1:5), "skimming" (Time1:3), "scanning" (Time1:4); and "task-related reading" (Time1:7). Item 6 was about self-regulation learning. These strategies changed dramatically over time. Apart from "scanning", which was mentioned at Time1, more new strategies emerged at Time2. There were strategies like study group – "discuss and exchange opinions with friends" (Time2:1), "using text structure for understanding" (Time2:4), and "using Chinese references for understanding, and for background knowledge" (Time2:2, Time2:5). Among these strategies, the study group was a common coping strategy used by Chinese students in the second semester (see Chapter Seven for details). Usually four or five students split the reading tasks, and met regularly to talk about their understanding of the text(s) they had read, often before assignments or exams. The study group was considered to be an efficient way to cope with their reading tasks, mainly because group members could get a rough idea about the articles which they were supposed to read. This learning phenomenon arose mainly from their reading difficulties (see Figure 5.2), such as their slow reading speed, which made it impossible to finish their reading tasks; low English language proficiency associated with faulty comprehension; or limited background knowledge which caused understanding difficulties; etc. For others, using Chinese references seemed to be a reasonable choice, which could largely compensate for the above deficiencies.

Changes in strategy use at Time2 presented a mixed picture. Judging from the above strategies such as "scanning" and "using text structure for understanding", it seems that these students were becoming more strategic in academic reading. But on the other hand, these changes also revealed a gloomy situation about these students' academic reading: reading Chinese references. Although this may be interpreted as a manifestation of their resilience and flexibility in master's study, reading Chinese references would, under no circumstances, contribute to their English reading development.

In addition, answers to the two open-ended questions about what they found easy and difficult in their reading enabled us to explore another dimension of their academic reading. Generally speaking, most of the participants found it easy to read texts with which they were familiar. They liked to read the introduction and conclusion parts; texts with diagrams and pictures; and texts which teachers had mentioned in class. At Time2, they found it easy to locate the main ideas in their reading, and found it easier to understand some theories and texts relevant to what they were studying. As far as the changes in reading difficulties are concerned, they were far more dynamic and complex. All the reading difficulties reported in the questionnaires were categorised into four types (see Figure 5.2), in terms of linguistic knowledge, background knowledge, comprehension processing, and others.

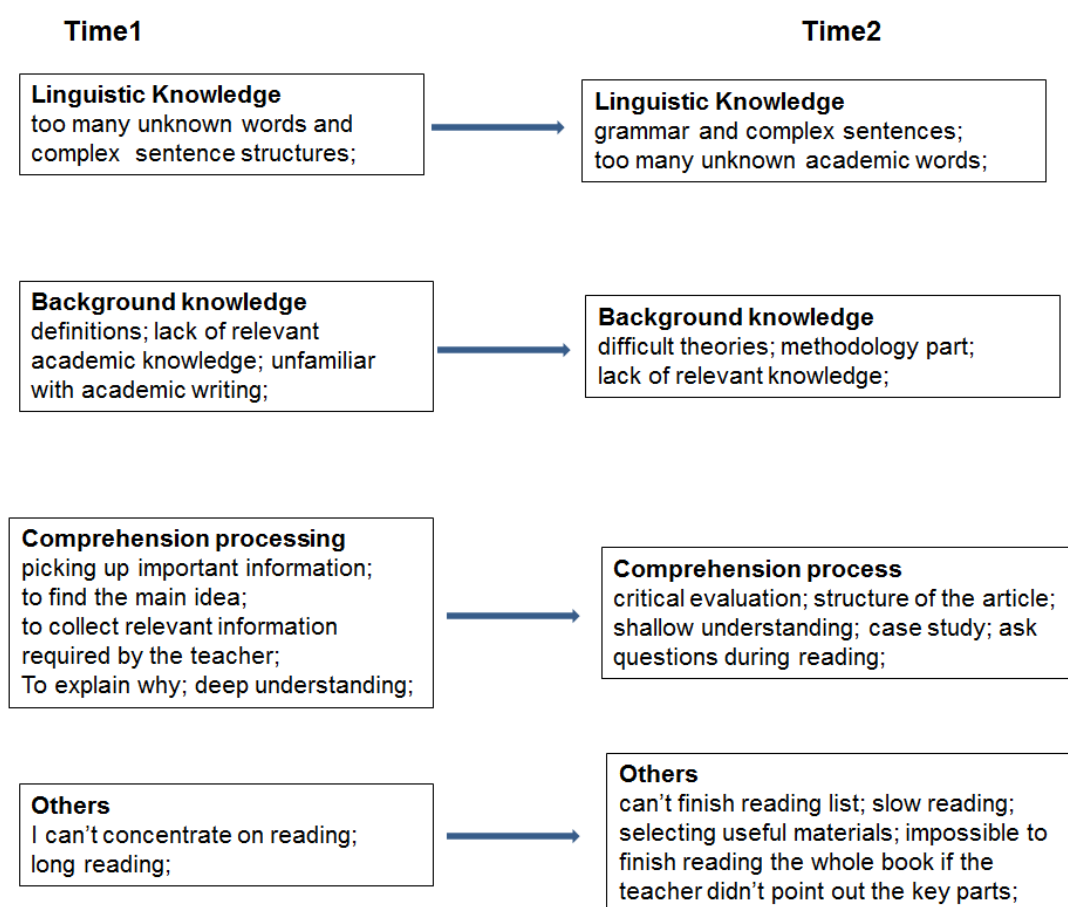


Figure 5.2 Respondents' perceived reading difficulties at Time1 and Time2

By comparing Time1 and Time2 in Figure 5.2, it can be seen that there were hardly any changes in the language category. On both occasions, the same linguistic units were causing trouble in their reading, such as unknown words (including academic vocabulary), grammar, and complex sentence structures. As for difficulties relating to background knowledge, the problem of unfamiliarity with academic writing existed at Time1, but was not mentioned at Time2. Nevertheless, there were some other issues which remained constant on both occasions, such as lack of relevant background knowledge, in particular, lack of familiarity with definitions, theories, and methodology writing. It was hypothesised in Chapter Two that Chinese international students would be at a disadvantage upon their arrival in the UK because of their learning experience in China, especially with regard to having had little practice of English academic reading. However, answers in this category suggest that inadequate background (subject) knowledge caused not only temporary trouble in their coursework reading at Time1, but also longitudinal one at Time2.

Of the above four types of reading difficulties, comprehension processing was the only aspect which displayed big changes. At Time1, the difficulties were mostly about how to find the most important information in an article, with only one participant mentioning deep understanding. One participant even put down “to explain why”. This indicates the initial challenge that they had to go beyond the face values in their reading. Nevertheless, at Time2, the problems were directed to higher level processing, such as critical evaluation, deep understanding, and overall structure of the text. These changes strongly suggest the transition in their cognitive processing from text meaning understanding to situation model construction. Although these were changes in comprehension processing difficulties, these changes imply that the participants were more conscious of the need to engage in higher level processing at the later stage of their study.

Problems revealed in the last category also provided us with useful information about their academic reading. Clearly, slow reading constituted a continuing problem in their coursework reading. This might be associated with their inadequacy in background knowledge, in that they were slow to read around their subject. Apart from this, at Time1, it was mainly about self-regulation, having difficulty concentrating on their reading. Given the above problems in linguistic knowledge, background (subject) knowledge, and comprehension processing, it is not surprising that these students had trouble concentrating on their reading. At Time2, the self-regulation problem became how to select useful materials. The fact that this only emerged at Time2 does not mean that this was not a problem at Time1. It probably took time for them to realise the importance of integrating different resources in their coursework study. The awareness of slow reading and perceived difficulties in selecting useful references, to some extent, coincides with the strategies which demonstrated significant changes over time, like “skimming” and “integrating different information sources”. The significant changes in deploying these strategies suggest that there has been a constant cognitive effort in their coursework reading. But at the same time, it is by no means an easy task for them, as indicated in Figure 5.2.

In all, the above data analyses suggest an interesting situation regarding Chinese students' trait strategy use. At the macro-level, both the self-regulatory learning strategy and the reading strategy demonstrated significant longitudinal development. At the micro-level, trait situation model construction strategies were the only sub-entity which displayed significant change between Time1 and Time2. Without significant changes in trait textbase strategies, the development of Chinese students' trait situation model construction strategies appeared to deviate from the cognitive mechanism constructed in Chapter Three (see 3.6). As far as the individual strategies are concerned, the combination of the three strategies indicates that there was a transition towards higher level processing.

Meanwhile, Chinese students' perceived reading difficulties enabled us to scrutinise from another perspective their trait strategy use. The difficulties they encountered in English language (and their domain knowledge) shed light on the insignificant development in their trait textbase strategies over time. Although these students were studying at an advanced level, these English language problems indicate that their reading development had lagged behind the academic requirements (see Chall's theory of reading development in 3.4.1). On the other hand, changes in their perceived processing difficulties, in particular, changes from textbase processing problems at Time1 to situation model construction problems at Time2, can be related to the significant development of trait situation model construction strategies. These processing difficulties (at Time2) suggest that the participants became not only aware of the necessity of engaging in critical reading, but they were also working on this aspect in their study.

In this chapter, I have explored, by means of questionnaires, Chinese students' perception of what they do in their reading: their deployment of trait strategies. In the next chapter, I will report an investigation using think-aloud method, to investigate the more dynamic and fluid state strategy use in on-line reading, and examine whether parallel development occurs between these two types of strategy status.

Chapter Six: An Exploration of State Strategy Use

In Chapter 4, I pointed out the need to analyse trait and state strategies separately, and to compare the corresponding results, because understanding of Chinese students' strategy use in both situations – task free and situation specific – helps address the multi-faceted nature of their academic reading. In Chapter Five, I examined participants' trait strategy use in a context free situation. The results suggest significant change in trait strategy use over time, in particular, their deployment of trait situation model construction strategies (SMS) demonstrated significant development between Time1 and Time2. Nevertheless, the fact that significant development of trait SMS occurred without a corresponding development of trait textbase strategies (TBS) is in conflict with the processing mechanism proposed in the framework in Chapter Three. Furthermore, it also emerged that, although Chinese students perceived that they were capable of engaging in more situation model construction strategies in their reading, they also felt that they encountered constant reading difficulties in their coursework reading, especially in relation to complex sentence structures and unknown words. The increased use of situation model construction strategies, despite the persistence of non-automatic processing, raises interesting questions that beg further investigation.

In this chapter, I will explore Chinese students' deployment of state strategies in a task-specific situation. I will first defend my rationale for using think-aloud to elicit state strategies in this study, and discuss the specific procedures in line with Pressley and Afflerbach (1995), including participants' information, the characteristics of the materials, tasks, instructions and training, and the construction of a coding scheme. In the second part of this chapter, data will be analysed both quantitatively and qualitatively. Quantitative analysis will examine whether significant changes occurred between Time1 and Time2 regarding their state strategy use, while case studies will provide an in-depth investigation of the different cognitive paths in order to capture the transitory nature of

state strategy use in on-line reading. In addition, patterns of syntactic processing are also explored among the participants, in an attempt to shed light on the causes of their perceived difficulty with long sentence structures, as revealed in Chapter Five. All these findings enable me to compare their deployment of two types of strategies, through which a better understanding will be gained with regard to the multidimensionality of their cognitive processing in academic reading.

6.1 Rationale for Using Think-aloud to Explore State Strategies

Unlike the trait strategies which reflect Chinese students' general perception of their cognitive processing in a task-free context, the state strategies that I shall investigate in this chapter are task-provoked. These strategies reveal the participants' fluid and dynamic cognitive processing in a specific reading situation. Because of the unpredictable nature of state strategies, questionnaires are clearly inadequate to capture such cognitive processing, even if these strategies were examined retrospectively and question items were worded in the past tense, as in Phakiti's (2003, 2008) studies.

In contrast, think-aloud, an on-line activity in which a reader verbalizes his/her thoughts while performing a task (Gass and Mackey, 2000:13), proves to have strengths in revealing the detailed cognition in which a reader engages during reading. Think-aloud, also known as introspective, or concurrent verbalisation, is described as the "stream-of-consciousness disclosure of thought processes while information is being attended to" (Cohen, 1996). The rationale for using think-aloud to explore readers' on-line cognition is well justified below by Pressley and Afflerbach (1995:38):

The think-alouds were extremely revealing about the dynamics of comprehension difficulties and how understandings of text shift in reaction to comprehension difficulties and surprises in text.

Think-aloud is considered as “a maturing methodology” (Pressley and Afflerbach, 1995:1) in providing access to the mental processes involved in reading which could otherwise only be examined indirectly (Afflerbach and Johnston, 1984; Rankin, 1988; Bowles, 2010). In L2 reading, this method is very popular for investigating readers’ decision-making in on-line reading (Anderson, 1991; Li and Munby, 1996; Zwaan and Brown, 1996; Trabasso and Magliano, 1996; Strømsø et al., 2003; Abbott, 2006; Schellings et al., 2006).

The theoretical underpinning for think-aloud is information processing theory (Ericsson and Simon, 1987), which entails two important concepts relating to human cognition: heeded information processing, and the mechanism of short-term and long-term memory. According to this theory, cognitive processes are assumed to be made up of a sequence of internal states of information transformation. Orderly heeded information is processed and stored in the short-term (or working) memory. In spite of limited capacity, the short-term memory offers quick access to stored information, while long-term memory has a much larger and permanent capacity, but is relatively slow in retrieving information (p.25).

In Ericsson and Simon’s (1987) view, verbal reports require participants to verbalise their thoughts when they are processing new information. Incoming information will remain in participants’ attention (working memory) until verbalisation is completed. It is argued that the sequence of internal states (or information processing) remains the same when participants are verbalising their thoughts, compared with those who are reading silently (p.32).

Nevertheless, verbal reports as a research method do not escape criticism in terms of their validity and reliability. Some argue that it is problematic for L2 learners to engage in dual processing: performing learning tasks and verbalising their thoughts; hence it is

doubtful how accurately their verbal reports will reflect their thinking (Ellis, 2001:37). Seliger (1983) posits that verbalisation, introspective or retrospective, can reflect only the reader's cognitive processing at the conscious level, while the other processing source – intuition, which is below our level of awareness – is not accessible (p.183-4). Thus, doubt is cast on the inferences made from the conscious “traces” of mental processes (Dobrin, 1986). There are also people who believe that think-aloud can investigate only certain types of strategies, because once the strategies become automatic, they are inaccessible to verbalisations (Ellis, 1994; McDonough, 1995).

To justify the robustness of verbalisation, Ericsson and Simon (1993:27) and Ericsson (2002:984) claim that the accuracy of verbal reports depends on the right procedures and the right type of information. Invalid reports may result from lack of access to thoughts owing to inadequate procedures, or wrongly requested information. The concept of right procedures, in this context, encompasses the notion of “immediacy of verbal report” (Cohen, 1996) and the distinction between metalinguistic and non-metalinguistic verbalisation (Ericsson and Simon, 1993). To obtain valid data, participants' verbalisation has to correspond with the heeded information that is being processed in working memory, or immediately after the processing is finished. Furthermore, the elicited information should only focus on non-metalinguistic verbalisation, namely, what the participants are thinking: “thoughts naturally entering attention” (Ericsson and Simon, 1987). Participants are expected only “to express their thoughts, but not to infer the processes that produced those thoughts” (Green, 1998:4). If the information includes why and how the participants think in this way (metalinguistic verbalisation), then additional cognitive load will be generated in working memory, which will potentially distort the normal cognitive processes (Ericsson and Simon, 1993:7; Gass and Mackey, 2000:58). Therefore, introspective and non-metalinguistic verbalisation is highly recommended in data collection (Ericsson and Simon, 1993).

Findings in previous studies (Leow and Morgant-Short, 2004; Bowles and Leow, 2005; Bowles, 2008) also lend empirical support for using concurrent data collection procedures in L2 reading. All these studies indicate that there is no significant difference in readers' comprehension between reading silently and thinking aloud. Bowles (2010:102) claims that "thinking aloud while reading marginally improves text comprehension as compared to reading silently".

In this study, introspective and non-metalinguistic verbalisation was used in data collection for the reasons set out in the above discussion. That is to say, participants were instructed only to verbalise their thoughts: their normal cognitive processes, rather than explaining why and how they thought during reading, in order to avoid potentially distorted data. As for the issue of dual processing raised by Ellis (2001), this problem was minimised through a session of instruction and training (see Section 6.5 for details). As for the risks of inaccessibility to cognition below the level of awareness (Seliger, 1983) and to automatic cognition (Ellis, 1994; McDonough, 1995), these concerns largely arise from the fuzziness in conceptual definitions between strategy and skill. In Chapter Three (see 3.3.2), skills were defined as readers' automatic processing during reading, while strategies were regarded as readers' conscious and purposeful cognitive efforts. Because the purpose of using think-aloud in this study is to capture participants' state strategy use, questions pertinent to automaticity and unconscious processing are, in essence, about participants' language skills, rather than strategy use. Therefore, these concerns are of little relevance to this study.

Although the process of think-aloud -- data collection, transcribing, coding and analysing -- is extremely labour intensive, it does yield a great amount of rich data (Green, 1998, Chamot, 2001). Since think-aloud is always triangulated with other research methods, such as interviews, questionnaires, and focus groups, it leads to the convergence of data sources (Afflerbach and Johnston, 1984:308). In this study, interviews were used

immediately after think-aloud, which offered me an opportunity to follow up session(s) in which the participant failed to give satisfactory verbalisation.

Having argued a rationale for using think-aloud in this study, I will, in the following sections, focus on the details of each procedure in line with Pressley and Afflerbach (1995) and Cohen (1996).

6.2 Participants' Characteristics

All fifteen participants were from the same cohort as my questionnaire respondents, and all but one had filled in the questionnaires. They had finished their undergraduate studies in China before coming to the UK to study for an MSc at the Business School at Cardiff University. These participants were recruited in various ways. Some were recommended by friends and by the participants in this study. Others were from an in-session English class. There were also some volunteers who indicated on their questionnaires that they were willing to be further engaged in this research. Detailed information about the participants is presented in Table 6.1 regarding their age, sex, English reading proficiency (according to their IELTS reading score based on which they were admitted in their master's study), and the programmes they were studying.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Age	21	22	23	24	23	23	23	23	22	23	23	22	28	23	22
Sex	F	F	M	F	M	M	F	F	F	F	F	F	F	F	F
IELTS	6	7	6.5	7.5	7.5	6	6.5	6	5	6.5	6.5	6	6.5	6	5
Modules	LOM	IT	LOM	HR	IT	SM	SM	HR	HR	SM	SM	A	LOM	IT	SM

Table 6.1 Information about Think-aloud Participants

Note: P: participant; F: female; M: male; LOM: Logistics And Operations Management; HR: Human Resource Management; IT: International Transportation; SM: Strategic Marketing; A: Accounting And Finance

As shown in Table 6.1, the average age of the participants is 23. Among them, a wide range of English language proficiencies is displayed, from 7.5 (the highest IELTS score) to 5 (the lowest), with an average result of 6.3. Before coming to the UK, none of them had any experience of studying or living in English speaking countries. Apart from two who had previous working experience, the rest came straight after their undergraduate study.

Because none of the participants had heard of think-aloud before this study, there was not an issue of instrument bias among them. However, their different personalities could have an impact on the quality and amount of verbalisation during think-aloud, especially the shy and tongue-tied participants. To minimise this potential weakness, special consideration was given to the training and practice sessions (see 6.5), such as a detailed written instruction on think-aloud, modelling from me, and practice. If, during the warm-up practice, a participant had trouble verbalising their thoughts, they would be encouraged to talk more until their verbalisation was satisfactory.

6.3 Characteristics of the Think-aloud Materials

Because the research purpose of this study is to explore how Chinese students' academic reading develops over time, it was essential that the materials for think-aloud should be "academic" enough in terms of register, writing style, content, and text structure. Another major concern was how to locate the right kind of articles with little content bias among the participants, and with the right length for think-aloud. Rankin (1988, p.123) argues that the appropriate length of text for a verbalisation task should be between 300 and 1000 words, depending on the participants' language proficiency. This is important in that a passage "should be long enough to allow the subjects to become involved in reading, but not so long that they become fatigued by the demands of thinking aloud for extended periods" (ibid.:132).

Bearing the above considerations in mind, I was cautious that the right materials should be used in this study. I first talked to an administrative staff in charge of MSc students in the Business School to gain some general knowledge of the modules they were studying. Then with the help of the domain librarian, I chose the first materials, and consulted two professors who were teaching these students about the appropriateness of the articles. Unfortunately, both of them thought that the materials were not academic enough, and that they were also too simple. Such negative feedback helped me relocate my focus on material searching. Instead of looking for short articles, I switched my attention to the introduction part of the journal articles, which gives an overview of the research context. To make sure that participants would not be overloaded cognitively in this study, only the first three-quarters of each introduction was used, in which the key features of argument development and cohesion were still completely present. This combination of brevity and completeness in content well matched what was required in think-aloud.

Both introductions were chosen from the journal *Review of Development Economics* (see appendix 4). The first one is entitled *Three Poverties in Urban China*. The second one is *How Should We Measure Poverty in a Changing World? Methodological Issues and Chinese Case Study*. The first passage contains 678 words, 28 sentences, with a Flesch–Kincaid Readability Index of 14.4, and a Flesch Reading Ease rating of 30.5. As explained in Chapter 2, Flesch–Kincaid is a graded level index which matches the number of years of education at school. The index 14.4 indicates that this material was at the level of university study. Flesch Reading Ease rating (from 0 to 100), on the other hand, suggests that the higher the score is, the easier the material will be. A Flesch Reading Ease rating of 30.5 indicates that this material was suitable for academic reading compared with the low 30s that the academic journal *Harvard Law Review* has (http://en.wikipedia.org/wiki/Flesch%E2%80%93Kincaid_readability_test). The second passage contains 719 words, 21 sentences, and has a Flesch–Kincaid Readability Index of 18.2 and a Flesch Reading Ease rating of 18.9. It was assumed that all participants

should share similar background knowledge because both texts are about poverty in China. In addition, the risk of content bias was lessened because these economics articles are supposed to be central domain knowledge for all non-economic students in this study.

Ideally the two articles should have similar readability indices. But searching for the second text was largely constrained by the consideration of having a similar topic to the first one. Although there is a readability rating gap between these two articles (the second one is more difficult than the first one), it was regarded as acceptable at Time2 not because the participants had had more reading practice by then in their coursework study, but because all the participants had already gained the relevant background knowledge at the first think-aloud. The difference simply indicates the nature of academic reading. When different information is integrated, it is unlikely that they will have similar readability ratings, because different writers have different writing styles in terms of register, syntactic structures and how they express themselves. Therefore, participants' cognitive processing on these two texts, instead of being restricted by their readability rating differences, might offer us a more realistic picture of their everyday academic reading. It may be argued that the difference in readability might nevertheless confound the results (particularly in relation to the cognitive processing described in the next section). So attention was paid to this possibility during analysis.

6.4 Tasks

Reading tasks were designed to examine the participants' final comprehension after they finished reading the text. These tasks were mainly about their cognitive processing at the level of situation model construction. Altogether there were five questions (see below). Question (1) was about the participants' general understanding of the text, while the other four questions tapped into their higher level processing, like critiquing the text (Q2), critiquing the author (Q3), and making inferences (Q4-5). All the questions were

presented to the participants before the think-aloud session, so that they were fully aware what they were expected to do afterwards.

1. Please summarise the main ideas of this text.
2. What do you think of the author's writing style?
3. What do you think of the author's arguments?
4. What do you think the author's intention is in this article?
/ What is the purpose of this article?
5. What do you think they feel about this issue?

Initially these questions were used to distinguish the processing differences between the successful and the less successful readers by associating their comprehension – their answers to these questions -- with their deployment of state strategies. Unfortunately, some participants failed to answer the questions due to language problems, especially at Time1, although the text was reasonable with regard to the readability rating. Given the incomplete sets of data, it was decided that their final academic performances would be used as an index of their academic reading. The successful readers were those who finished their master's study successfully, and the less successful ones were those who failed at the end of the academic year. Although this grouping was not directly linked to their think-aloud comprehension, their academic performance at the end of their master's study might be viewed as a reasonable index of their academic reading during their master's study in the UK.

6.5 Instructions and Training

Since the way that readers have to verbalise their thoughts while reading is not natural processing in everyday life, it is essential that precise instructions and training are provided beforehand (Gass and Mackey, 2000:51; Ericsson and Simon, 1993:11; Pressley and Afflerbach, 1995:133). In addition, the above discussion also suggests the necessity of having the right procedures of verbalization -- introspective and

non-metalinguistic verbalisation in that it is closely related to the validity of the collected data (Ericsson and Simon, 1993). Cohen (1996:10) contends that different data will result on the basis of the nature of training, coaching or prompts that participants received before or during the reading.

In this study, special attention was paid to this instruction and training in order to reduce the risk of adverse effects associated with dual processing (Ellis, 2001). According to Bowles (2010:120), all the procedures in the instruction session: introduction to the present study, instruction on think-aloud, modelling, warm-up practice, questions, and the 'what' prompts, help ensure the validity of data collection. A brief introduction to the study was first given to the participants, including the purposes of the study, what think-aloud was, and what they were expected to do during reading. Some examples were given to assure them that think-aloud was not alien to their daily life, for instance, a maths teacher illustrating a calculation in class by simultaneously expressing his thoughts and writing the calculation on the blackboard. Another example was asking for directions in the street: as people have little trouble verbalising the directions while they are still reading the map in their mind. These familiar examples seemed to help smooth over the fear that participants had toward this "foreign" research method.

The second part was standardised instructions (see Appendix 5) on verbal reports during reading, which were printed and given to the participants at the beginning of each session. This was to make sure that all the participants received the same explanations. Meanwhile, it was especially stressed that they should speak aloud whatever was going through their mind after they finished reading every sentence, even if the flash of thought was completely irrelevant to the reading material, such as "I feel bored", or "I am tired." It was also pointed out that anything happening in their mind could be interesting data for this study, and therefore, there was no issue relating to right or wrong answers. To make the verbalising task easier, participants were allowed to choose the language that they

felt comfortable with. Consequently, all of them used a mixture of Chinese and English in their verbalisation.

It was also made clear to the participants that they should take no notice of my presence during their think-aloud, and no questions were expected from me, because my job was only to remind them to keep talking if they ever stopped for more than 20 seconds. In this case, the interference would always be a prompt like “keep talking”, or “what are you thinking?” rather than instructions which asked participants to explain their thoughts, like “why did you stop?”. Such neutral instructions would be unlikely to result in biasing participants towards specific strategies (Afflerbach and Johnston, 1984:309).

After this explanation, I gave a demonstration of how to verbalise my thoughts while reading. Different materials were prepared and randomly chosen for this session so that a more authentic example was presented each time, rather than relying on mechanical repetition. The participants were told that this was only my way of doing think-aloud. Questions were encouraged regarding any uncertainties about the method at this stage.

Finally, there was a warm-up practice. The participants were given a short article, consisting of five passages with a slash after each sentence. The purpose of the slash was to help remind the participants to verbalise their thoughts after reading the sentence. A recorder was put in front of them so that they would get used to it when the real recording started. The warm-up practice would be interrupted if the participant failed to do a proper verbalization. For instance, the feedback could be: “You should speak more about what you were thinking when you read this sentence”, or, “Try to speak more, even though it was something which just flashed into your mind”. Usually, improvement could be observed immediately after such feedback. Those who did not reach the required level of verbalization would have a longer session of practice until both the participant

and I felt satisfied to start the recording session. This session lasted roughly 30 -- 35 minutes.

6.6 Constructing Coding Scheme

Seedhouse's (2004) transcription conventions were used in transcribing the recorded data. Since participants were allowed to use either Chinese, or a mixture of Chinese and English in their verbalisation, all Chinese utterances were transcribed into Pinyin, and then translated into English.

Given the fact that think-aloud was used to explore Chinese students' state strategy use, the coding scheme was basically constructed in the light of the trait strategies measured by the questionnaires. That is to say, in line with Phakiti (2008), the same set of reading strategies were examined in two different situations. But unlike Phakiti (2008), the questionnaires were used to explore Chinese international students' trait strategy use in a context free situation, while think-aloud investigated their state strategies in a task-provoked situation.

The coding scheme (see Appendix 6) in this study functions as a guide for capturing the categories of participants' cognitive processing (Green, 1998:69). The verbal reports were segmented. For each segment, coding decisions were made to tap participants' deployment of textbase strategies (TBS), situation model construction strategies (SMS), and comprehension monitoring strategies (CMS). Nevertheless, the richness and versatility of the participants' cognition revealed in the verbal reports demonstrated that sometimes there were various types of cognition corresponding to one trait strategy. For example, the diversity of cognitive processing corresponding to the strategy "checking comprehension" was manifested in terms of the following situations (see Appendix 7 for the transcribing conventions):

- 1). Participant paraphrases the sentence in his own words in order to make sense of the text information: ((tr.: *“that is to say, the, the, the, it should be the percentage of the population and income! Then it is US \$1)) poverty line”*)
- 2). Participants further confirm their understanding by saying: *“That’s it.” “It roughly means this.” “uh, anyway, that’s it.”*
- 3). Participants acknowledge their understanding by saying: *“oh, ((tr.: I understand now, it has been mentioned)) in this changing world, ((tr.: I think here I should have known what this article is about ...))”*
- 4). Participants acknowledge their uncertainty or confusion in their comprehension, but try to comprehend the sentence meaning in a roundabout way.
“Though I don’t understand the specific meaning, what it is talking about, it should talk about something contrary to the income increase, some opposite phenomena, or, or some changes.”
- 5). Participants know the meaning of the word, but don’t know how to translate it into Chinese.
“((tr.: to, to, to, to)) meet the, ((tr.: to)) meet the, ((tr.: this sentence, I don’t know how to say it in Chinese)), meet the ((tr.: the minimum nutrition, for a normal, ordinary adult, the minimum)) standard nutrition...”
- 6). Participants are aware of the consistency/inconsistency in their understanding.
- 7). Participants acknowledge their uncertainty or confusion in their comprehension.
- 8). Participants find their mind is not focusing on the text, and immediately draw back their attention.
- 9). Participants know that failure to understand certain parts of the text won’t influence their overall comprehension.

As a result of the dynamics revealed in the verbal reports, subcategories were constructed in line with Presseley and Afflerbach (1995), so that various types of mental processing could be specifically located, and so that observations would also be

generalizable to all verbal reports (Green, 1998). In the coding scheme, over half of the strategies displayed more than one type of cognitive paths by which these strategies were deployed during on-line reading (see Appendix 6), such as “evaluating the text”, “evaluating the author”, “checking comprehension”, “summarising text information”, to name just a few. The variations in participants’ cognitive processing reflected the transitory and multifaceted nature of state strategies. Such characteristics of state strategies are fundamentally different from trait strategies, which are habitual and one dimensional. For the rest of the strategies, some demonstrated only one type of cognitive processing among the 15 participants, for instance, “skimming”, “scanning”, “making notes”, and “underlining important parts”. There was also one trait strategy which could not be captured in their verbalisation: “translating into L1” (this issue will be addressed further in Chapter Eight).

Another issue pertinent to coding is whether the granularity of coding (or the segment size) should be coarse or fine (Chi, 1997). This is important in that it largely determines the units for data analyses, and gives rise to different results for participants’ cognitive processing. Chi argues that fine sizes tend to be redundant, and inadequate in capturing complete meaning. Moreover, they could also fail to detect inference-making behaviours, because they seem to capture more local processing at comprehension level, such as paraphrasing and retrieving background knowledge. Coarse sizes, on the other hand, could better capture the semantics of the inference, but are less informative (p.285-6). The following example given by Chi (1997) illustrates how the same utterances could be coded both by fine and coarse sizes (The text sentences are in bold).

During strenuous exercise, tissues need more oxygen.

During exercise, the tissues, um, are used more, and since they are used more, they need more oxygen and nutrients. And um the blood, blood’s transporting it to them.

The coarse size, according to Chi (1997), could capture only one macro inference in the above utterance: ‘Blood transports more oxygen and nutrients to the tissues during

exercise'. But if the utterances were segmented, based on fine size units (proposition-sized units), there would be three micro inferences: 1) Tissues are used more during exercise. 2) When tissues are used more, they need more oxygen and nutrients. 3) Blood transports oxygen to the tissues. Chi (1997) argues that there is no correspondence between the three micro inferences and the one macro inference. The key point is that there should be a consistent decision on the size of segments throughout coding.

Although Chi (1997) describes two types of segment sizes, and the necessity of being consistent in coding, it seems problematic to apply these concepts to my coding. In this study, since all the units for analysis tapped into strategic processing, that is, the segment sizes (reading strategies) varied according to the nature of the corresponding strategy. If the segment unit is targeting the logical relationship generated by transitional phrases – the strategy “using discourse markers to see relationship” -- then the size should be very fine. The discourse markers could be just a word or a phrase, like ‘nevertheless’, ‘furthermore’, or ‘on the contrary’. If the segment is examining the strategy use of “summarising the text information”, it might involve a whole paragraph, or the whole text. In this case, far more propositional units would be included. Hence, the granularity of coding in this study varied from strategy to strategy, all this being entirely dependent on the unique feature of each strategy.

In addition, there exist discrepancies about whether discrete or multiple taxonomies should be adopted in coding. It is argued that the construction of the coding scheme should be hypothesis-based (Chi, 1997) and related to the research question (Gass and Mackey, 2000). If the research question is exploring students' strategy use, the coding should include every mention of a strategy in the verbal reports (Chi, 1997; Gass and Mackey, 2000). Traditionally, coding categories are supposed to be all-inclusive and mutually exclusive (Ericsson and Simon, 1993). That is to say, each coding unit can

contain only one example of strategic processing. Nevertheless, Yang (2003) and Strømsø et al. (2003) question whether such a mono-coding taxonomy can adequately characterise human beings' complex cognition. Yang (2003) argues that discourse processing constitutes a multifaceted construct which involves a variety of interrelated cognitive processing. The verbal reports are full of spontaneous comments and descriptions of fluid mental cognition. The categorizations of cognitive processing should be considered in a broader context, in which the intertwined and complementary processing should also be taken into account. Unfortunately, a discrete taxonomy is incapable of fully capturing interconnected and multidimensional cognitive engagement. Yang (2003) posits that co-defined categorisations help yield more dynamic inferences involving multiple interplay processing, and better reflect a human's complex mental activities.

Based on Yang's (2003) argument, a co-defined coding scheme was adopted in this study because of some unique features of academic reading at postgraduate level. It involved a series of cognitive commitments, such as language decoding, text meaning construction, associating with reading tasks, making inferences, checking comprehension, evaluating the text, etc. These mental activities could be happening at the same time. Take the following protocols, for example (the text sentence is in bold):

According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with incomes below US\$1 per day dropped from 40% in 1981 to 21% in 2001 (see Appendix 7 for transcribing conventions).

Uh:: ((tr.: according to this report, the global population with income below, below \$1, dropped from 40% in 1981 to 21%, that means, (.) reduced, it should be (.) that people's living standard has improved? or simply, (.) simply (.) the income has increased? or their quality of life has become better? hh))

Altogether, four proposition-sized units were segmented from the above verbalisation.

1) that means, (.) reduced

2) it should be (.) that people's living standard has improved?

3) or simply, (.) simply (.) the income has increased?

4) or their quality of life has become better? hh))

To code the above four segments, the first one was judged to be related to strategic reading "checking comprehension": using her own words to paraphrase the main idea of this sentence. In segment 2 to 4, the participant was making inferences based on her understanding of the sentence. Meanwhile, she was not sure about her inferences: whether it is the case that people's living standard has improved, or their income has increased, or their quality of life has become better. These inferences were made together with questions. If discrete taxonomy was to be applied here, the legitimate way to code these segments is either as "making inferences", or as "generating questions while reading". That means that the other coding is bound to be missed out, because the unit cannot be further segmented into smaller ones. Therefore, in such a cognitively demanding situation, a co-defined coding scheme is able to properly reflect such complex and thick cognition during comprehension processes.

In addition, paralinguistic features and non-verbal behaviours during verbalisation were also taken into account in coding. Dechert (1987) suggests that, in speech production, features like increased pauses, fillers, and lengthened speech may imply a high processing load; sighs, laughter, and prosodic shifts may point to organising, monitoring, and evaluative activity. It is essential that these features should be coded and available for protocol analysis (Kasper, 1998:359), as they reveal participants' corresponding cognitive processing as well. In this study, such features, mainly focusing on laughter, turning back and forth the materials, underlining, and making notes, were regarded as processing indicators and contextualisation cues (Gumperz, 1992), and were coded into strategies like "checking comprehension", "integrating one part of the text to another", "underlining important parts", and "making notes".

6.7 Piloting

A pilot study was conducted on two Chinese MA students who were in the same year and at the same university as the participants, but studying different modules (journalism and sociolinguistics). One of the purposes of the pilot study was to pilot the clarity of the instructions. It was essential that all the participants fully understood what think-aloud was, and what they were expected to verbalise during their reading. Another purpose was to pilot the material's level of difficulty (Rankin, 1988). Although special consideration had been given to this aspect when I was choosing the texts, the pilot study offered a chance to test content, register, and unknown words. According to Rankin (1988:123), the cognitive load generated by the text should match the reader's reading proficiency. If the text was too easy, readers' comprehension processing would be more likely to be automatic, which would not encourage readers' strategy use during reading. If the text was too difficult, it would prevent the readers from being able to verbalise their thoughts, because the text was beyond their understanding. Moreover, the pilot study also helped me familiarise myself with the overall procedures throughout the whole session, including the general introduction of this study, the think-aloud modelling, the warm-up practice, questions asked at the interview, and also the operation of the recording equipment. Lastly, the piloting helped me gain a general idea of what might go wrong, and work out some possible solutions in advance. For instance, I realised that before starting think-aloud, having some casual chat with the participants would make them feel relaxed. Therefore, they would feel more comfortable to verbalise their thoughts during reading.

6.8 Data Analyses

The verbal reports were analysed both quantitatively and qualitatively. The quantitative analysis focused mainly on the changes in participants' state strategy use between Time1 and Time2, and the difference between the successful and the less successful

students with regard to their deployment of textbase strategies (TBS), situation model construction strategies (SMS), and comprehension monitoring strategies (CMS). The qualitative analysis consisted of two parts: three case studies and patterns of syntactic parsing. These offer an in-depth insight into the different routes of cognitive processing, in particular, the factors which facilitated or restrained the development of strategic reading over time.

6.8.1 Quantitative Analysis

In order to answer the research question -- How do Chinese international students' state strategies develop in the course of one-year master's study? -- quantitative analysis in this section will first address three relevant issues, namely, the development of participants' overall state strategy use between Time1 and Time2; changes in their use of textbase strategies (TBS), situation model construction strategies (SMS), and comprehension monitoring strategies (CMS) over time; and the strategic reading of two types of readers: the successful students and the less successful students.

Particularly in the light of the small number of participants ($n=15$), at the beginning of the quantitative analysis, a normality test was carried out to determine whether parametric or non-parametric tests should be applied to the following analyses. Kolmogorov-Smirnov and Shapiro-Wilk tests indicated mixed results for normality. Among them, TBS1, TBS2, CMS1, SMS2, and CMS1 displayed a normal distribution (Kolmogorov-Smirnov: TBS1, $p=0.200$; TBS2, $p=0.200$; CMS1, $p=0.076$; SMS2, $p=0.200$; CMS2, $p=0.088$; Shapiro-Wilk: TBS1, $p=0.213$; CMS1, $p=0.222$; TBS2, $p=0.087$; SMS2, $p=0.099$), while SMS1 (Kolmogorov-Smirnov: $p=0.032$; Shapiro-Wilk: $p=0.037$) and CMS2 (Shapiro-Wilk: $p=0.006$) indicated a non-normal distribution. With such non-uniform

results, nonparametric tests were used in the following data analysis.

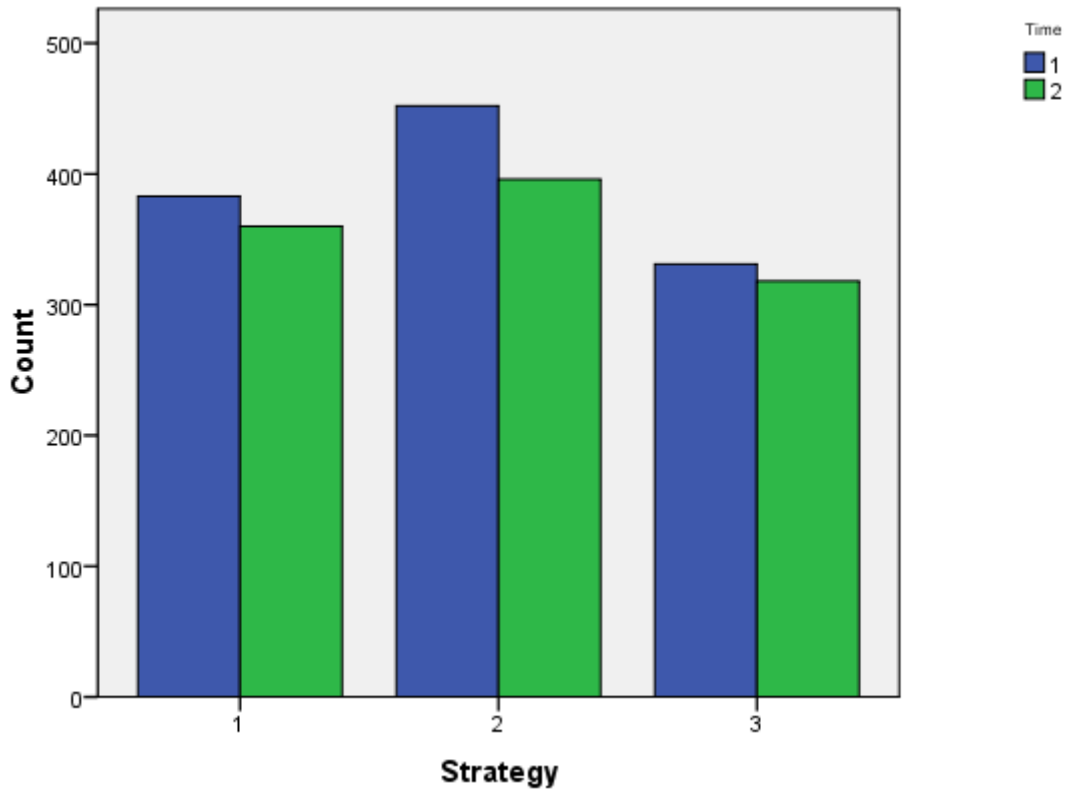


Figure 6.1 General distribution of 15 participants' state strategy use at Time1 and Time2
Note: 1=TBS; 2=SMS; 3=CMS

Figure 6.1 shows the general use of state strategies both at Time1 and at Time2. Although the readability rating of the second text is more difficult than the first text, it seems that participants were more cognitively challenged at Time1 than at Time2, showing more reading strategies being used at Time1. In addition, on both occasions (see Table 6.2), SMS was the most frequently used among the three entities, with 39.8% and 36.9% respectively. The deployment of TBS came second, with 32.8% at Time1 and 33.5% at Time2, followed by CMS: 28.4% and 29.6%.

Strategic Processing	Time1 (%)	F	Time2 (%)	F	Total F
TBS	32.8%	383	33.5%	360	743
SMS	39.8%	452	36.9%	396	848
CMS	28.4%	331	29.6%	318	649
Total	100%	1166	100%	1074	2240
N: 15					

Table (6.2) Percentage and frequency of state strategy use at Time1 and Time2
Note: F: The frequency of strategy use; N: number of participants

Descriptive analyses were conducted first in order to gain a general knowledge of participants' strategy use on each occasion. The means and standard deviation of these entities (see Table 6.3) showed that, compared with Time1, Chinese students' employment of CMS displayed the least change at Time2: 21.7 vs. 21.2. The biggest change was in their SMS use, from 30.1 at Time1 to 26.4 at Time2. The drop in TBS was comparatively small, from 25.3 to 24. As illustrated in Figure 6.1, these results suggest a decrease in participants' cognitive processing at Time2, in particular, their deployment of SMS. This contradicts the results generated by the questionnaires, which indicate significant development in participants' trait SMS over time. In addition, information on the minimum and maximum strategy use in Table 6.3 also implies that there exists big difference among the participants with regard to their knowledge of strategic reading, and their competence to use these strategies in a task-specific situation.

	TBS1	TBS2	SMS1	SMS2	CMS1	CMS2
Mean	25.3	24	30.1	26.4	21.7	21.2
SD	15.4	9.6	18.6	14.6	8.4	11.6
Minim	6	13	9	10	4	8
Maxim	58	44	69	57	33	56

N: 15

Table 6.3 Mean, Standard Deviation, and the Range of TBS, SMS, and CMS at Time1 and Time2

Note: SD: standard deviation; N: number of participants

To examine the changes in participants' state strategy use, Wilcoxon signed rank tests were conducted. The results show that the difference in overall state strategy use was insignificant between Time1 and Time2: $Z=-0.625$, $p=0.532$. As far as changes in state TBS, state SMS, and state CMS are concerned, the results indicate that there were no significant differences over time: TBS2-TBS1: $Z=-0.566$, $p=0.571$; SMS2-SMS1: $Z=-0.629$, $p=0.530$; and CMS2-CMS1: $Z=-0.666$, $p=0.506$. These results partially confirm both hypothesis1 and hypothesis 2 (in terms of state strategy use) that Chinese students' strategy use will be TBS-oriented at the beginning of their academic study, and

at Time2 these students' reading will continue to be dominated by their deployment of TBS.

Wilcoxon signed rank tests were carried out again to examine changes in each strategy use. The results showed that there was no significant difference with regard to participants' deployment of individual state strategies. These results suggest that Chinese students' state strategy use was not developing in parallel with their trait strategy deployment. Having significant development of their trait strategy deployment and showing insignificant changes in their state strategy use, Chinese students' strategic reading displayed the multifaceted nature of academic reading.

To further examine whether there was a significant difference between participants' choice of TBS, SMS, and CMS, Crosstabs tests were carried out. The strategy counts were weighted, because the number of think-aloud protocols varied across the cells. The results suggest that there was no significant difference between the use of these strategies: Cramer's $V=0.023$, $p=0.541$.

Although the above results do not reveal any significant changes in Chinese students' state strategy use, little is known about whether the successful readers read in the same way as the less successful ones. To find answers to this question, two groups were divided in line with their year-end academic performances (see Table 6.4). Among the 15 participants, one quit in the second semester after the second think-aloud, because she had failed four modules in the first semester. There were another three students who failed in their year-end examinations. These four participants were included in the less successful group (Group2) in this study, while the remaining 11 participants were assigned to the successful one (Group1).

Strategic Processing	Time1 (%) F		Time2 (%) F	
	Group1	Group2	Group1	Group2
TBS	31.1% 285	39.4% 98	31.3% 262	41.2% 98
SMS	40.3% 370	32.9% 82	37.8% 316	33.6% 80
CMS	28.6% 262	27.7% 69	30.9% 258	25.2% 60

Table 6.4 Comparison between the two groups' deployment of TBS, SMS, and CMS both at Time1 and Time2

Note: Group1: The 11 participants who finished their academic study successfully.

Group2: The four participants who failed in their study.

F= Frequency

Table 6.4 compares strategy use between these two groups. Because of the imbalanced numbers in each group, the percentage of their strategy use was calculated and presented together with frequencies. On both occasions, processing in Group2 was dominated by TBS: 39.4% and 41.2%, which was in contrast with Group1, who outperformed Group2 in SMS and CMS (SMS: 40.3%, and 37.8%, and CMS: 28.6%, and 30.9%). The variations in these entities, especially in TBS and SMS, distinguished these two groups from each other. Over-reliance on TBS in Group2 suggests that their reading was predominantly text bound, while more deployment of SMS in Group1 indicated more cognitive effort at high level processing.

A Mann-Whitney Test was carried out to examine whether there were significant differences between these two groups' strategy use over time. Counts of strategy use were weighted, as a result of the variations in group numbers. The result indicates significant difference in strategy use between these two groups: $Z=3.071$, $p=0.002$. This suggests that the successful group's choice of strategies differed significantly from that of the less successful group. Such differences, as shown in Table 6.4, mainly lie in the cognition allocation in terms of TBS, SMS, and CMS. As far as the development of each group's state strategy use is concerned, both groups failed to demonstrate significant changes between Time1 and Time2: $Z=0.461$, $p=0.645$.

In summary, quantitative analysis indicated that there were no significant changes in the participants' state strategy use between Time1 and Time2, and there were also no significant changes in their state textbase strategies, state situation model construction strategies and state comprehension monitoring strategies. As far as the individual state strategies are concerned, none of them demonstrated significant changes over time. However, between the successful and the less successful students, there existed a significant difference regarding their cognition allocation among textbase strategies, situation model construction strategies, and comprehension monitoring strategies. Generally speaking, the less successful students relied more on textbase strategies in their reading, while the successful students displayed lower deployment of textbase strategies, and more frequent use of situation model construction strategies and comprehension monitoring strategies.

The TBS-oriented processing (or the non-significant development in situation model construction strategies) suggests that these participants -- in particular, the less successful students -- might be troubled by language processing. As a result, more cognitive effort had to be made at the level of text meaning understanding. The inadequate use of state situation model construction strategies, in their case, does not necessarily mean that they were unaware of the importance of critical reading in their postgraduate study, as shown by the significant development of trait situation model construction strategies. Inadequacy in state situation model construction strategies probably arises mainly from their low English language proficiency, which largely prevented them shifting their cognition from textbase processing to the situation model construction.

Meanwhile, it is also possible that the TBS-oriented processing was brought about by their slow realisation of the need to engage in critical reading in their coursework study. As suggested in Chapter Four, the socio-cultural factors in Western academia would not

affect their cognitive processing immediately. Their previous learning experience in China would have had a prolonged effect on their study, resulting in text bound processing in their English reading. Consequently, even though they were studying in the UK, they were still reading in a way which was considered to be appropriate in their previous learning community: understanding the literal meaning of a text.

In order to shed light on these issues, in the next section, qualitative analysis is presented. The analysis entails both case studies and syntactic processing patterns for the whole cohort. Case studies will investigate three individual readers' unique cognitive processing routes, mainly focusing on why certain types of state strategies were used, how they were used, as well as what personal factors might be involved in the developing process. Then, syntactic processing patterns will focus on all participants' state strategy use when they were parsing the same sentence structure. Analysis of their combinations of strategies on this subtask should offer us another distinctive perspective on the variability in their academic reading, especially insights into the contributing factors which give rise to different development between trait and state strategies.

6.8.2 Qualitative Analysis 1: Three Case Studies

Detailed verbal protocol analysis was conducted based on three female participants' verbalisation, together with their interview data. These participants were from three different course modules – Human Resource Management, Strategic Marketing, and Logistics And Operations Management. They were chosen mainly because of the high variability in their English language proficiencies (IELTS results), in their reading development over time, and in their academic performances at the end of the university year. Analysis of their verbal reports, especially a comparison of their reading processes between Time1 and Time2, offers us detailed information on how their language proficiency and knowledge of strategic reading were intertwined during reading. The findings were supplemented with interview data, which clarified aspects of their

verbalisation and provided information about their coursework. Such background knowledge contextualises their academic reading, so that the relevant factors can also be taken into account, such as their attitudes toward the academic requirements in their coursework study; their determination to make adjustments to the new learning environment; as well as their willingness to succeed. The combination of these two types of data sources – verbal reports and interview data – enable us to undertake an in-depth exploration of the context in which their state strategies were deployed.

6.8.2.1 Case1

Case1 was a 22-year old female student studying Human Resource Management. Her IELTS score was among the lowest: 5. In the interviews, she told me that she did not like studying English, and it was her parents' decision to send her to study in the UK. She chose to study HR because she was told this programme was easy to pass. When talking about reading, she said she was a slow reader because she liked to read every word in the text, either in Chinese (L1) or in English (L2). Even in the second semester, she still kept looking up unknown words in her electronic dictionary. Although her friends had told her to focus on the important parts, instead of reading from beginning to end, her learned habit was slow to change. Her biggest ambition was to understand the content of articles. Occasionally, she would translate the important parts into Chinese, so that she could remember them properly. In her view, it was totally beyond her imagination to be critical in her reading: "What I manage to do is understand other people's ideas. To give my own comments, I think it is beyond my ability" (Time2: Interview). When asked about how she found the new words in the think-aloud text, she revealed her coping strategies.

((tr³: But I like to guess randomly. That is to say, I don't know the meaning of the words. But I know when it is a noun, it is probably talking about something in a certain field. If it is a verb, it probably refers to, refers to its influence. This is how I usually guess!)) (Time2: Interview)

In the first think-aloud, Case1 quickly became frustrated when she noticed the new words in the text. That was because she always turned to her electronic dictionary when she encountered unfamiliar expressions in her reading. Her reading process was basically a constant struggle with word and sentence meaning. Because of the weaknesses in understanding text information, she was very flexible in deploying other strategies to compensate for her linguistic deficiency. Her reading was not strictly linear. Take the following sentence (S20) (The original sentence is in bold):

The literature on poverty tends to use either income-based and consumption-based poverty concepts and measures.⁴

((tr.: Then)), the literature on poverty tends to use either income-based and [consume], oh, ((tr.: the two aspects that they have mentioned should be)) income-based ((tr.: and)) consumption-based! ((tr.: I think it must be this, the two aspects that they have mentioned, because it is based on these two aspects to decide whether those individuals are)) non-poor ((tr.: or)) poor! ((tr.: then.))

Here she tried to piece together the meaning of this sentence with the previous one by saying repeatedly *"the two aspects that they have mentioned"*. In all she displayed reading back and forth on eight occasions at Time1 (See S9, S15, S19, S27, S28 in Appendix 8), trying to find clues and make sense of the text, especially at the end of the text reading. The most frequently used strategy in her reading was "generating questions while reading", which accounts for 33% of her total strategy use (See Table 6.5). The high frequency of this strategy seems to be largely attributable to her limited vocabulary: for instance, when she read the phrase "in contrast": *"((tr.: .hh then, the:::)) these, ((tr.:*

³ ((tr.:)) Non-English words are translated in double parentheses. See Appendix 7 for transcribing conventions.

⁴ It is presented in the original as a complete sentence, and probably "and" should have been "or".

these)), uh::: contrast, uh, ((tr.: is it contract?)). The elongated “the:::” and “uh:::” indicate her uncertainty about the meaning of the word “contrast”.

Case1 Strategies T1 / T2	TBS F	SMS F	CMS F
1 checking comprehension			22 / 22
2 generating questions	33 / 25		
3 making inferences		16 / 30	
4 planning steps to take			2 / 3
5 predicting	-/1		
6 guessing unknown words	4 / 1		
7 text structure		-/4	
8 focusing on key points	7 / -		
9 repairing faulty comp.			2 / 1
10 connecting various parts	8 / -		
11 summarising	3 / 2		
12 critiquing the author		1 / -	
13 evaluating the text		1 / 1	
Overall percentage T1/T2	55.5% (55) / 32.2% (29)	18.2% (18) / 38.9% (35)	26.3% (26) / 28.9% (26)

Table 6.5 General distribution of state strategies in Case1 at Time1 and Time2

Note: F: frequency; No9: repairing faulty comprehension;

The fact that 55.5% of her overall strategy use at Time1 was text-based (see Table 6.5) suggests that her main cognitive processing had been focused on working out the text information. However, such text-bound processing in her reading was closely intertwined with her comprehension monitoring (26.3%). The high frequency of “checking comprehension” (22.2%) indicates that she was fully aware of her comprehension situation, and that she was trying to make the most of her incomplete understanding of

the text meaning. And such processing often demonstrates a kind of uncertainty or awareness of faulty comprehension: for example, “((tr.: uh, it tells us some numerical data, but I don’t know what these data are about))”. Such monitoring behaviour also occurred when she checked her overall comprehension after finishing the text:

“((tr.: uh, good, so far, I am thinking ((turning back to the previous parts))⁵, what they have discussed is)), three poverties in urban China, ((tr.: this means, yep, I really want to know the meaning of this)) poverty, ((tr.: what on earth does it mean? It is very important, then, this is the most important thing in this writing, then, the secondary issue they talk about is relating to economy, then, there are also three main concepts)), uh::: consumption ((tr.: and)) income, ((tr.: and also the)) uh::: [consum]⁶, income and consumption, ((tr.: these three, in the end, I guess they seem to talk about, they rather promote)) consumption not income ((tr.: this concept!))”

Because she was heavily handicapped by text information processing, such broken and fragmented language decoding inevitably led her to concept-driven processing. This seemed to be the only choice for her to avoid becoming stuck in the middle of her reading. As shown in Table 6.5, her SMS (18.2%) at Time1 mainly consisted of one strategy use -- “making inferences” (16.1% of the total strategies). The context of her using this strategy is well illustrated in the following sentence (The original sentence is in bold):

For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population.

- 1 ((tr.: Then:::)) for instance, uh::: ((tr.: the, °°this word, then °°, I don’t know this word.
- 2 Uh::: this)) [car:::con] based on a [nated] survey, ((tr.: in 1998, uh, this, I don’t know
- 3 this word, I don’t know what it is. It focused more and more on an international survey,
- 4 uh::: then, (.) .hh it:::)) showed 12.7% ((tr.: of something, the, the, the, I also don’t
- 5 know this word. I don’t know)) [calation], ((tr.: then whatever, this means temporarily, it
- 6 tells us a (.) this numerical data, mm::: then, but, there is also 27% of:::, uh, some))
- 7 urban population, ((tr.: the native country, uh::: then, then, I think, I guess, uh:::
- 8 probably it talks about an overall)) nation survey, uh, ((tr.: in 1988, it is, it tells us a,
- 9 probably there is 12.7, 12.7% of something, worldwide, it should be, uh, this means,
- 10 other countries, or, uh::: (.) some data from other countries, but the native country
- 11 takes 2.7%!))

⁵ (() Non-verbal actions or editor’s comments

⁶ [] In the case of inaccurate pronunciation of an English word, an approximation of the sound is given in square brackets

The above verbal reports reveal how she constantly used inferences to compensate for her poor language decoding. Dechert (1987) argues that increased pauses and fillers suggest a high processing load. This is definitely true for Case1. She was stuck by unfamiliar words right from the beginning, when she met the word “calculation” in Line1, She even gave up pronouncing it halfway (Line2): [*car:::con*]. Then she mispronounced the word “national” as [nationed] in Line2. With such poor text information decoding, she made her first inference in Line3: *“It focused more and more on an international survey”*. Then she continued to make another inference: *“this means temporarily”* (Line5). When she noticed the numbers, she seemed to realise that there should be a link between 12.7% and 2.7%, but her poor understanding could not make sense of them (Line6): *“it tells us a (.) this numerical data, mm::: then, but, there is also 27% of:::”*. She misinterpreted “urban population” as “the native country” in Line7, and made her following inferences based on this faulty comprehension (Line8-11): *“uh, ((tr.: in 1988, it is, it tells us a, probably there is 12.7, 12.7% of something, worldwide, it should be, uh, this means, other countries, or, uh::: (.) some data from other countries, but the native country takes 2.7%!))*. Although she was frequently using SMS in her reading, in particular, the strategy of “making inferences”, these strategies were used more like a compensatory measure or a coping strategy owing to her language deficiency, so that she could keep the reading process moving. Such deployment of SMS differs qualitatively from those which are used in an attempt to read beyond the text meaning. The inferences made in this context are random, without any solid understanding of text meaning.

At Time2, Case1 read in a more linear way. There was no turning back and forth to find context clues like the first time. She kept making inferences during her reading, which became her most frequently used strategy (about 33%, see Table 6.5). Her overall SMS increased to 38.9% due to her frequent inference making. Meanwhile, her use of TBS dropped to 32.2%, and CMS became 28.9%. Just as at Time1, making inferences was

used more as a coping strategy. Usually, inferences were made with little link with the text, simply because she could hardly generate any useful information from the sentences. The following sentence reflects such cognitive processing (The original sentence is in bold):

One of the primary targets of the UN Millennium Development Goals is the global poverty rate, defined as the proportion of the world's population with income below the US \$1 poverty line.

1 One of the pri`mary targets of the UN, (.) ((tr.: this sentence means, in)) uh, UN [Mille-]
2 ((tr.: I don't know this word. This means in a development goal, uh, the most, most
3 primitive purpose, one of them is)) global poverty rate, ((tr.: this means, this means,
4 means, the first sentence should mean this. Then it is defined as)), uh::: the proportion
5 of the world's population with income, (.) ((tr.: this means, it is defined as the world (.)
6 uh::: in the world, how to translate this sentence, some::: global fashions (2) uh::: its, I
7 don't know how to translate this sentence. But it should mean)) uh::: below the, ((tr.: but
8 the following says)), below the US uh::: \$1 poverty line, ((tr.: it should mean, maybe
9 with its income, uh::: income and, relevant to income! The most basic! I don't
10 understand. Then,))

Here Case1 misread “primary” as “primitive” in Line3, and she just read through “global poverty rate”, which suggests that this was another unfamiliar expression. The lengthening fillers “uh:::” (in Lines 4, 6, 7, 8, and 9) clearly indicate that she was over-loaded by language processing. It seems that she knew very few content words in this sentence, for instance, she decoded “income” correctly, but she could hardly make sense of its meaning in the context. In the end, she inferred in Line8-9: *“it should mean, maybe with its income, uh::: income and, relevant to income!”* Having so many new words in one sentence, not surprisingly, she chose top-down processing, and constantly made the wrong inferences, such as *“some ::: global fashions”* (Line6), *“The most basic!”* (Line9). Nevertheless, she was fully aware of her faulty comprehension: *“I don't understand.”*(Line 9-10)

The following sentence offers us another example of her typical inference-driven processing (The original sentence is in bold):

Economic growth has meant that “absolute” poverty lines have changed, in practice, over time, as consumption items (e.g., indoor plumbing, refrigerators, telephones) which were initially considered non-essential have been reclassified as “necessary”.

1 Economic growth has, ((tr.: economic growth has already meant that)), absolute
2 poverty lines, ((tr.: this means it has already changed, this means in practice, practice,
3 in practice, uh::: the conception, as a)) consumption items, ((tr.: this means a
4 conception, this means uh, how to put it, this means an imaginary project, uh, for
5 instance)), indoor [plumbing], ((tr.: this:::)) oh, telephones, ((tr.: the, this means, this
6 means tele-, telephone)), telephones, ((tr.: door)), indoor, ((tr.: it should be in some (.)
7 I think this should mean, as for some impractical projects, it is a design! This means a
8 design for some specific project items, undergoing, some items which have been
9 carried out, they, this means::: can)), uh::: con-, consider, consider, ((tr.: to be
10 considered, then)), have been re-classified, ((tr.: as very important, this means those
11 (.) items which are under design, should, should, should, should, it roughly means,
12 should examine the possibilities of these items, it is very important! It roughly means
13 this, I really don't know.))

In Line3, Case1 was impeded by the word “consumption”, which she misinterpreted as “conception”. She struggled to construct the text meaning because of this unknown word (Line3-4): *“this means a conception, this means uh, how to put it, this means an imaginary project, uh,”*. Then, she made her first inferences in Line6-7: *“it should be in some (.) I think this should mean, as for some impractical projects, it is a design!”* She continued to make more wrong inferences in Line7-9: *“This means a design for some specific project items, undergoing, some items which have been carried out”*. By following the wrong track, more wrong inferences were made in Line9-12: *“they, this means::: can)), uh::: con-, consider, consider, ((tr.: to be considered, then)), have been re-classified, ((tr.: as very important, this means those (.) items which are under design, should, should, should, should, it roughly means, should examine the possibilities of these items”*. The last inference in this sentence is in Line12: *“it is very important!”*. As in her usual reading pattern, she habitually checked her comprehension (Line12): *“It roughly means this.”* However, her acknowledgement of comprehension difficulty at the end -- *“I really don't know.”* (Line13) – suggests that she was conscious of her faulty inferences. Because of too many unknown words, such top-down processing became

the obvious choice in her reading, which, eventually, gave rise to combinations of inference making and comprehension checking.

In summary, Case1 illustrated an interactive reading process in which top-down processing was largely generated to compensate for poor bottom-up processing ability. Her reading was characterised by broken and incoherent processing. Her constant effort and attention to the pronunciation and meaning of individual words indicate that she was cognitively overloaded by multi-layer tasks: phonological, lexical, semantic, and syntactic. Meanwhile, her reading was by no means short of higher-level processing and monitoring behaviour. Instead of being stuck by unfamiliar words and phrases, she showed extreme flexibility in switching to other strategies, especially the strategy of “making inferences” to compensate. Nevertheless, in her situation, inferences made without accurate language decoding were often not accurate in relation to the text content.

It is also noted that Case1 did not retrieve her background knowledge at all to facilitate her comprehension during reading, despite the fact that she possessed the knowledge. This might have arisen from her poor quality of word decoding, which provided her with few clues to retrieve the relevant background knowledge. According to the processing framework in Chapter Three, textbase understanding constitutes the foundation for situation model construction. Without proper text understanding, it is unlikely that the reader will engage in high level processing, such as using background knowledge, integrating with other information sources, and critically evaluating the text and the author(s). To some extent, Case1 displayed an extraordinary processing pattern which entails both textbase and situation model construction, even though she was inhibited by her English language deficiency.

The above protocol analysis also suggests, from another perspective, the importance of contextualising strategy use, which offers us insight into the bigger issue of strategy use effect. Counting the frequency of strategy use without considering contextualisation may hide the differences in strategy use, leading to an inaccurate index of a reader's cognitive processing. If the strategy use in Case1's reading had been analysed only by counting the frequency, her high proportion of SMS would have misled us about her higher level processing, and would also have disguised its real purpose, namely, compensating for her decoding deficiency.

6.8.2.2 Case2

Case2 was a 21 year old female student studying Logistics and Operations Management. Upon her arrival in the UK, her IELTS was 6. In the interviews, Case2 said that she thought her English was very poor because she did not like to study English in China. Nevertheless, she was highly motivated to make the most of this one year MSc study because she was very grateful for her mother's financial support. In the first semester, her English reading was primarily characterised by bottom-up processing. She was not familiar with academic writing structure, and she also did not have much background knowledge to facilitate her comprehension.

At Time1, Case2 read in a typically text-bound way. She manifested some strategic reading, but her efforts were constantly hampered by unfamiliar words, which appeared even right in the title – “poverty”. She tried to make a prediction based on her incomplete decoding: *“but I know that this article is about three some)) poverties in China's towns-towns”*. She displayed reading back and forth four times (S8, S23, S24, S28. See Appendix 9), trying to piece together the broken text information. Take the following sentence, for instance (The original sentence is in bold):

We explore why it is that some households fall into one of these three types of poverty, but not into the other two.

1 We explore why it is that some households fall into one of these three types of poverty,
2 ((tr.: it talks about)) we explore, ((tr.: why some of the)) households, ((tr.: they)) fall
3 into, ((tr.: they don't have, don't belong to the, the one of these three types?)) but not
4 into the other two, uh, ((tr.: this sentence probably means)) (re-read the sentence)
5 ((tr.: here it probably talks about the previous, which has been mentioned
6 previously)), household ((tr.: is one of them, not two of them, why? Maybe the
7 following will explain why.))

Case2 obviously had trouble understanding this sentence, because she did not interpret the two key words: “households” and “poverty”, which indicates that she was unfamiliar with them. But she was trying to make sense of the fragmentary meaning by various strategies, such as integrating with the previous sentence in Line 5-6: *“here it probably talks about the previous, which has been mentioned previously”*; re-reading the sentence; and generating questions by asking in Line6: *“household ((tr.: is one of them, not two of them, why?))”* In the end, she made a prediction in Line7: *“Maybe the following will explain why”*.

The distribution of her overall strategy use at Time1 is as follows: 44.9% (TBS), 24.6% (SMS) and 30.4% (CMS) (see Table 6.6). The high proportion of TBS indicates that great cognitive effort was allocated to text meaning processing, interplayed with comprehension checking. Take the following sentence for example (The original sentence is in bold):

For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population.

1 For instance, ((tr.: for example, the, the following part gives, the following long part
2 gives an example)), [calcu] calculations based on a national survey in 1988 showed
3 12.7% of the rural [polution] to be in poverty, ((tr.: I am thinking, this means:: based
4 on a) national survey, ((tr.: judging from a local study, there were 12.7% of, uh,)) rural
5 [polution] in, to be in [povertin], ((tr.: in 1988, uh)), but:: only 2.7% of the [urban]
6 polutions], ((tr.: oh, seeing this, I feel I understand better now. The previous part
7 mentions that there were, uh, were 12.7% of rural population)) to be in poverty ((tr.:
8 then, here, only 2.7, 2.7% were (.) of city population.))

Case2 really struggled with this sentence, especially the first part. She was sensitive to the transitional phrase “for instance” in Line 1, knowing that it is followed by an example. She misinterpreted “national survey” as “local study” in Line 4, and did not mention “calculation”, or the phrase “in poverty”. Clearly she was stumbling with these lexical meanings and their pronunciation as well (she pronounced poverty as [povertin]). She checked her comprehension twice. She first claimed in Line 6 that: *“oh, seeing this, I feel I understand better now”*. Then she paraphrased the part which she had understood in Line 6-7: *“The previous part mentions that there were, uh, were 12.7% of rural population)) to be in poverty ((tr.: then, here, only 2.7, 2.7% were (.) of city population.)”*

Her monitoring behaviour could be observed throughout her reading. When she finished reading the whole article, she checked her comprehension, and summarised what she had read:

((tr.: After I finished reading this article, I feel very confused, it seems that I don't have a ((turning back and forth the article)), I know it is talking about a)) poverty, ((tr.: but maybe I don't know)) poverty ((tr.: it has influenced the overall, overall direction and comprehension, but I roughly know it is talking about a kind of:: development trend, or a comparison of whatever)) poverty, ((tr.: between city and countryside. In the end, there is a classification of)) China urban, ((tr.: roughly it is about this.))

Shallow and incomplete as her comprehension was, her constant monitoring served as a coping strategy, as it did for Case1-- to maximise what she had understood. However, all her cognition was focusing on the meaning of individual words and sentences, the lower levels within textbase understanding. Because of her decoding deficiency, she was not able to answer the questions after she had finished reading the text, which were mainly about situation model construction.

Case2 Strategies T1 / T2	TBS F	SMS F	CMS F
1 checking comprehension			21 / 24
2 generating questions	19 / 16		
3 making inferences		14 / 26	
4 planning steps to take			-/ 2
5 predicting	4 / 7		
6 guessing unknown words	3 / 3		
7 text structure		3 / 6	
8 discourse markers	-/4		
9 focusing on key points	-/5		
10 repairing faulty comp.			-/3
11 connecting various parts	4 / 7		
12 evaluating the author		-/4	
13 summarising	1 / 2		
14 critiquing the author		-/4	
15 evaluating the text		-11	
Overall percentage T1/T2	44.9% (31) /	24.6% (17) /	30.4% (21) /
	35.5% (44)	41.1% (51)	23.4% (29)

Table 6.6 General distribution of state strategies in Case2 at Time1 and Time2

Note: No.10: repairing faulty comprehension

Things improved dramatically in her reading in the second semester. The following interview excerpt at Time2 indicates the progress she felt she had made in strategic reading:

((tr.: I don't know why, I can easily find, by skimming, I know where the key part is. I will skip many parts ... Usually in the first part it will focus on)) methodology, ((tr.: often I would read the)) abstract, ((tr.: skimming the)) introduction, ((tr.: then skip the middle part, because it is mainly about methodology and the:::)) literature review, ((tr.: then in the end I would read, read the author's ideas. It is very quick to read in this way. Now I am able to locate the key

points, simply because I have read a lot, and I know where it is. This is how it works.))
(Time2: Interview)

At Time2, Case2 became remarkably resourceful in her processing. Her total strategy use increased to 124, compared with 69 at Time1 (see Table 6.6). She apparently felt comfortable being critical during her reading, displaying 11 instances of text evaluation, and 8 tokens of critique of the authors, in contrast to Time1 when she did not show any such critical processing. She also demonstrated more jumping back and forth – seven times (S16, S15, S10, S8, S6, S5, S4, See Appendix 9) -- during the reading, attempting to piece together what she was reading. The following excerpt from the interview revealed her strategic processing of the unfamiliar word “poverty”, and the critical thinking involved in this process.

1 ((tr.: At the beginning I thought)) poverty ((tr.: was)) property, ((tr.: since I couldn't
2 look it up in a dictionary. I noticed the text repeatedly mentions money, money,
3 something relating to money, I feel it must be. In addition, when I read China's case, it
4 is about something relevant to money, poverty gap, or poverty indicator. Apart from
5 this, it also mentions afterwards)). Oh, ((tr.: yes, it did not occur to me at the beginning,
6 that is to say, this)) \$1 poverty line, ((tr.: I was thinking this)) one dollar, ((tr.: then I
7 thought, that is to say, uh, often using Americans' salary, this means, how much
8 payment the workers earn per hour, then the Chinese would say how much more they
9 are earning now. I think, just now it occurred to me that definitely it is using another
10 country's criterion to measure our own. But I think, myself, when I read this, I also
11 don't think this method is scientific. It occurred to me then, but I forgot to speak it
12 out. Now it suddenly occurred to me. I watched it on the news. Since such idea
13 flashed into my mind. Now I remember, and I can speak it out. The news says, there
14 exists such a point of view in China, like Britain or America, it says how much they
15 are earning now. But I think people in China, since now we are in the UK, I feel,
16 though they are earning a big salary now, actually (in the UK) their consumption
17 level, or their social welfare level, is really very good. So it can't be applied to China,
18 and it can't be compared with China.)) (Time2: Interview)

Line3-4 reveals the cognitive process of how Case2 worked out the meaning of 'poverty' by piecing together the information. Then Case2 gave her own critical comment on the \$1 poverty line (line6-11): such method was not scientific because *“it is using another country's criterion to measure our own (China)”*. Then she continued to give more evidence to support her ideas: the differences between China and Britain or America regarding the consumption level and social welfare level (line16). As a result, she made

her own judgement: *"it can't be applied to China, and it can't be compared with China"* (line17).

Such evaluative reading could be observed throughout her think-aloud. Take the following sentence, for instance (The original sentence is in bold):

According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001.

1 ((tr.: Then)), according to ((tr.: the indicator)), Industrial Development Report 2004,
2 ((tr.: in a report 2004)), the proportion of the world's population with income below
3 US\$1 per day dropped from 40% in 1981 to 21% in 2001, ((tr.: this is probably from
4 the number of the world's population, (.), from the population, uh, the)) income, ((tr.:
5 the £1, US £1, it must be £1, so low)) ((laugh)) with income, ((tr.: people with income
6 below £1 per day, in terms of percentage, dropped from 40% in 1981 to 21% in 2001.
7 Here, it occurs to me, though it looks it has dropped, given the speed of economic
8 development, and also the commodity prices, prices, the consumption standard has
9 risen. Therefore it seems, though it looks as if there is a drop, it does not necessarily
10 mean there is a real drop concerning the population.))

Though she mixed up US \$1 with £1 here, almost spontaneously she gave her evaluation in Line 5: *"so low"*. The non-verbal language – her laugh – seems to indicate her satisfaction with her interpretation. Then she paraphrased this sentence in her own words, and continued to make inferences based on her understanding in Line 7-10: *"though it looks ... the consumption standard has risen". "... it does not necessarily mean there is a real drop concerning the population"*.

The following protocols reveal a series of strategies which she deployed when she realised her misinterpretation of the word poverty (The original sentence is in bold.):

However, is this indicator sufficient for measuring global anti-poverty progress?

1 However, ((tr.: another different view)), however, is this indicator sufficient for measuring
2 global anti-poverty progress? Poverty! ((tr.: this poverty, ((laugh))), suddenly it occurs
3 to me that maybe it doesn't mean property? ↓No. It should be something relating to, to
4 money. I must have had faulty comprehension in the previous part, regarding this.
5 Then, it says here, the authors put forward an idea: Is this measurement indicator
6 really reconsidered as a, can it be really considered as a global, hh, globally:::
7 accepted, uh, measurement indicator? Measure this)) anti-poverty progress, ((tr.:
8 then the next paragraph.))

It can be seen that Case2 was very sensitive to a transitional phrase in the reading (Line1): *“However, ((tr: another different view))”*. Then suddenly she seemed to realise she had mistaken poverty for property, but she was not so sure (Line 2-3): *“Poverty! ((tr.: this poverty, ((laugh))), suddenly it occurs to me that maybe it doesn’t mean property?”* Immediately, she confirmed herself in Line 3: *“↓No. It should be something relating to, to money”*. She continued to check her comprehension in Line4: *“I must have had faulty comprehension in the previous part, regarding this”*. Then she evaluated the authors in Line 5: *“the authors put forward an idea”*. In the end, she paraphrased this sentence to make sure she had fully understood the meaning.

Compared with Time1, Case2 showed good progress, both with her language understanding and strategic reading at Time2. Although there were still new words in her reading, she showed an ability to repair her faulty comprehension with the help of context clues, like working out the meaning of poverty. Because her decoding was smoother and more accurate, her reading became more dynamic and resourceful. She was more confident in deploying more SMS (41.1%), such as “making inferences” (20.9%, the most frequently used strategy at Time2), and “evaluating the text” (8%) (see Table 6.6). Because her increase in SMS was accompanied by the decreasing deployment of TBS, her SMS use signifies her deeper and critical cognition, which is fundamentally different from that of Case1. In Case1, the rise of SMS at Time2 was mainly due to the frequent use of just one strategy “making inferences”. Most of the time, this strategy was used as a last resort to keep the reading fluid. In contrast, SMS in the reading of Case2 mainly consisted of two strategies: “making inferences” and “evaluating the text”. Because of her improved language proficiency and good understanding of the sentential meaning, these two strategies were used largely to interpret the implicit messages and engage in critical evaluation. In all, what happens to Case2 shows that, despite a low start at the beginning, she made progress both with her English and academic reading over time.

6.8.2.3 Case3

Case3 was a 23 year-old female student, studying Strategic Marketing. Her IELTS score was 6.5. In the interviews she said that the biggest reading problems in her first semester were background knowledge, academic vocabulary, and grammar. She often got lost in her reading because she couldn't follow the examples or cases given by the writers. Apart from that, she found long sentences very difficult to understand.

((tr.: For me, I really find it difficult to understand the long sentences. I can understand the first part. When I finish reading the whole sentence, it is very difficult to combine the first part with the last part. I don't know how to translate it. When I read long sentences, it is always difficult to understand. What I do is try to translate the sentence into Chinese. I have to pause, read them carefully, and try to think them in Chinese. The problem is that I am also not good at grammar. I find it extremely difficult to translate a long sentence into Chinese. In addition, if you find there are more than three new words in one sentence, it is absolutely impossible to understand it. You just don't know the meaning. Sometimes I would guess. Unfortunately, I often make the wrong guess. So this is a problem.)) (Time1: Interview)

Another problem Case3 had in her reading was reading speed. Her processing was typically word-for-word understanding. Her teacher in China had introduced reading strategies in class, but Case3 never practised them in her reading. In the pre-sessional English class in the UK, she learnt strategies, such as skimming, scanning, and critical reading. Unfortunately, when she found that she would miss important information in the text when trying to skim and scan, she stopped practising them. She thought it was too risky to practise new reading strategies when she was preparing for her assignments in her one year MSc study. Therefore, she stuck to her old reading habits, which were painfully time consuming. The following interview excerpt at Time1 reveals that academic English reading is by no means easy for her, especially at the beginning of her master's study.

((tr.: Tell you one thing, many students say that they fall asleep while reading English articles. No matter whether you have trouble understanding it, or have no trouble at all, I feel I can't concentrate on what I am reading. Sometimes, if I can't understand one sentence, I will lose my confidence to continue reading. I would think that maybe this sentence is very important. So I just can't keep going. As a result, I start to struggle. I have a very bad habit. Once I fail to understand one sentence, I have to restart from the beginning of that paragraph. It is very time consuming. Given the limited time we have for our assignments, I would keep asking myself why there are still so many pages to read, and when can I finish the material. I would repeatedly count the pages which I haven't read. I can't concentrate at all.)) (Time1: Interview)

Case3 Strategies T1 / T2	TBS F	SMS F	CMS F
1 checking comprehension			2 / 7
2 generating questions	4 / 13		
3 making inferences		8 / 7	
4 background knowledge		1 / 1	
5 predicting	1 / -		
6 re-reading			-1
7 repairing faulty comp.			-3
8 connecting various parts	-1		
9 evaluating the text		-2	
Overall percentage T1/T2	31.2% (5) / 40% (14)	56.2% (9) / 28.5% (10)	12.5% (2) / 31.4% (11)

Table 6.7 General distribution of state strategies in Case3 at T1 and T2

Note: %: percentage of overall strategies; F: frequency of strategy use;
No.7: repairing faulty comprehension;

At Time1, this participant showed good decoding ability. She had little trouble understanding the sentence meaning, and read in a linear way, only jumping back to the previous part once (S3, see Appendix 10). The allocation of her strategic processing was mainly on SMS (56.2%), followed by TBS (31.2%), and CMS (12.5%) (see Table 6.7).

Take the following sentence (The original one is in bold):

Even these differences understate the rural-urban contrast: in real terms the urban poverty line was drawn at a level well above the rural one.

((tr.: Generally speaking, uh:: rural areas were in pover-, there were more people in poverty in rural areas than in cities, .hh Uh.))

Clearly this automatic language processing enabled the participant to make an inference straightaway. And this strategy – “making inferences” – has been the most frequently used one at Time1. Nevertheless, her comprehension did not often go very far beyond that. At Time1, she made only 8 inferences. Take the following sentences (The original ones are in bold):

We distinguish three types of poverty and try to explain them in the light of the circumstances that now face urban-dwellers.

((tr.: We distinguish three)) poverties, and, (.) uh, ((tr.: plan to explain it in, uh, now, residents, residents, oh, to analyse in the circumstances that urban residents face.))

The poverty line identifies the group in poverty.

((tr.: The poverty line differentiates, uh, distinguishes, uh, different, poor, (.) people.))

When an absolute poverty line is drawn, the food poverty line and the non-food poverty line are normally defined separately.

((tr.: Once a poverty line is drawn, food poverty line and non-food poverty line will, uh, will be defined.))

Case3 showed quick and accurate sentence understanding. There seemed to be few new words for her in these sentences, as shown by her smooth decoding. At Time1, she used fewer TBS (6 instances) in her reading than the other two students. Despite that, she did not carry on to engage in deeper processing. Her comprehension mainly remained at textbase level. Her total amount of SMS (9 instances) was the least among the 15 participants. Even though her smooth decoding made it possible to shift her cognitive processing to the situation model construction, she failed to do so because she had not engaged in such practice before. As with the two ‘A’ students in Li and Munby’s (1996) study, Case3 was reading to the same level as she was in China. Her higher level

processing was made up of a very limited repertoire: “making inferences” (8 times) and “retrieving background knowledge” (once). There was no cognitive engagement at the level of critical evaluation of the text or the authors. The text bound processing in this case suggests the prolonged impact generated from her previous learning environment. Namely, socio-cultural factors constitute an inevitable part of cognitive processing, as illustrated in the processing framework in Chapter Three. This provides us with an interesting topic to follow up in the focus group analysis to see whether participants’ accounts support this interpretation.

At the end of second semester, Case3 said she still found long sentences difficult to understand. Compared with her Chinese classmates, she thought she had a bigger vocabulary. But her slow word-by-word reading constituted the biggest problem. Since she couldn’t skim and scan in her reading, she had to sacrifice her sleeping time so that she could finish her assignments in time. Despite this, she found that she had trouble understanding the key points in an article.

At Time2, Case3 continued to read in a linear way, with only one example of jumping back to piece together the text information (S15, see Appendix 10). She had more trouble with language this time, especially the long syntactic structures. She did not know where to segment them, and consequently she got lost in the end. This was manifested in her high proportion of TBS (40%). Her SMS dropped to 28.5%, and her CMS slightly increased to 31.4% (see Table 6.7). The most frequently used strategy in her reading was “generating questions while reading” (13 instances), which was over three times as many as at Time1. For example (The original sentence is in bold):

As a measure of poverty, this “headline number” has the enormous advantage of seeming simplicity.

((tr.: This (2) this criterion, this)) head, ((tr.: what does this)) headline number ((tr.: mean?))
has the enormous ((tr.: has enormous)) advantages, uh::: ((tr.: making it simple, what is this?
What criterion?))

The first question was about the literal meaning of the headline number. She did not know this phrase. The lengthening *uh:::* may indicate some cognitive processing load, suggesting her incomplete understanding of this sentence. Since she failed to integrate this sentence with the previous one (which she had understood accurately), it is not surprising that she generated the third question: "*What criterion?*"

Case3 repeatedly mentioned that the biggest problem in her reading was long sentences. The following verbalisation revealed how she struggled when she read this particular long sentence – S10 at Time2 (The original sentence is in bold):

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons.

1 This study argues, (.) ((tr.: the ar-, (.) the argument of the authors' theory?)) This
 2 argues, uh, this study argues that the poverty line in China should be drawn relative to
 3 median Chinese income and it attempts to contribute to the debate on world poverty
 4 by outlining the conceptual links between different indices of poverty, suggesting a
 5 useful graphic tool to compare poverty outcomes and using Chinese micro-data to
 6 demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if
 7 poverty intensity, also known as, a, ((tr.: so confused, and so long. Let me read it
 8 again)), this study argues that the poverty line in China should be drawn relative to
 9 median Chinese income, ((tr.: this)) study, uh::: ((tr.: it means argues, claims, it means
 10 poverty line, the poverty line in China, should, uh, should be put, like, uh, then
 11 together with)) [me-] uh, ((tr.: the middle, the median)) Chinese income, uh, ((tr.:
 12 should be associated)), and it attempts to [contribute] to the debate, ((tr.: it attempts
 13 to)), uh, [contribute] to the, ((tr.: this argument)), on, uh world [poverties], uh, ((tr.: the
 14 world (.) uh poverty)), by, ((tr.: by means of)) outlining, outlining the conceptual things,
 15 uh, ((tr.: by associating, associating their con-, con-, conceptual)), lin-, linking,
 16 between differ-, different in-, in-, indices of poverty, suggesting a useful, between
 17 different indices, uh, ((tr.: by different)) indices of poverty, ((tr.: with different, uh,
 18 indicators, indicators relating to)) poverty, stressing, ((tr.: does this mean indicator?
 19 Stressing a useful graphic tool to, uh, indicating a useful, uh, a geographically graphic
 20 tool)), to, uh, ((tr.: compare the outcomes of)) poverty, ((tr.: and also use China's))
 21 micro, ((tr.: use China's micro)) data to ((tr.: illustrate, hardly any, uh?)) that little is lost
 22 in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as
 23 the simple “normalized poverty gap ratio”, is used for comparisons, uh::: ((tr.: this,
 24 using this)), using Chinese ((tr.: micro)) data ((tr.: to illustrate, hardly anything (2) is
 25 lost, mm, nothing is missing? There is no shortage, in terms of:::)) inter, ((tr.: in terms
 26 of)) [provincial] rating, rating ((tr.: within the province)), rating poverty outcomes, ((tr.:
 27 within the province:::, in (.) uh, no, no, very little is lost regarding the inter-provincial))
 28 rating, ((tr.: concerning the)) outcome of poverty, ((tr.: very difficult to understand)), if
 29 poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for
 30 comparisons, uh, ((tr.: normal poverty)) gap ratio, gap, ((tr.: poverty, void::: poverty))
 31 gap ratio, ((tr.: what does it mean? Uh, it is very difficult to understand this
 32 paragraph.))

Case3 made an inference in an uncertain way at the beginning of this sentence (Line1):

“the ar-, (.) the argument of the authors' theory?” Probably because this sentence was too long, even before she finished reading it she exclaimed in Line 7: “so confused, and so long”. She re-read the sentence, and the following processing was based on word units (Line 9-11): “((tr.: this)) study, uh::: ((tr.: it means argues, claims, it means poverty line, the poverty line in China, should, uh, should be put, like, uh, then together with)) [me-] uh, ((tr.: the middle, the median)) Chinese income ...” She did not finish pronouncing “median”, and she mispronounced contribute and poverty as [contribute]

and [poverties] in Line12 and Line13, which indicates the extra cognitive load in her processing. The following part was also characterised by text-oriented processing (Line15-16): *“uh, ((tr.: by associating, associating their con-, con-, conceptual)), lin-, linking, between differ-, different in-, in-, indices of poverty”*. Even though her word-by-word reading was not smooth, there was no sign of switching to global reading to get a rough idea of this sentence. Since she was constantly stuck by input units – complex structure plus unfamiliar words -- her comprehension was consequently incomplete and fragmented. At the same time, she was fully aware of her comprehension difficulties: *“very difficult to understand”* (Line28), *“Uh, it is very difficult to understand this paragraph”* (Line31-32).

Compared with Case1 and Case2, Case3 displayed reversed development in her reading at Time2. The long and complex syntactic structures in the second text caused her much trouble, which consequently resulted in broken and incomplete comprehension. Because of her difficulties in language processing, Case3 had to allocate more cognitive effort to it, which was reflected in her increasing deployment of TBS, from 31.2% to 40%. And the deficiency in language decoding was also interspersed with constant monitoring, which was evidenced by the rise from 12.5% to 31.4%. In consequence, SMS became her last choice during reading.

Although both Case1 and Case3 experienced language decoding problems at Time2, these two students demonstrated different cognitive processing. Case1 mainly engaged in inference making to guess the text meaning, while Case3 deployed more TBS, accompanied by CMS. The variations in state strategy use seem to be an important element that is lost in the quantitative analysis.

The above analysis suggests two main weaknesses which account for the reversal of practices in Case3: deficiencies in syntactic parsing and in strategic options. She had

developed strategies that helped her cope well at Time1, but in doing so, they also masked the underlying weaknesses. When the syntactic structures were short and simple – with an average of 24.2 words in each sentence at Time1-- Case3 could often show smooth and automatic decoding. However, the problems came to the surface with the longer sentence lengths at Time2. When the average sentence length increased to 35.7 words, her processing became broken and fragmented. As she herself acknowledged, she did not know how to segment a sentence if it was too long. As well as this, her word-by-word reading habit did not help; or it even made this situation worse. Since she refused to try other reading strategies, she had few resources available to her in her reading, which made her processing extremely text-bound. Among the 15 participants, Case3 used fewest strategies both at Time1 and Time2 (16/35). Her limited repertoire of strategies largely restricted her from engaging in strategic reading, and also made it difficult to compensate for her processing deficiency by shifting to other cognitive resources.

In all, Case3 seems to reflect the reading situation of those who, given their initial English proficiency upon their arrival in the UK, should have had a positive development in their academic reading but failed to achieve it. To some extent, her reversal of practices in academic reading constrained her from reaching her potential academically because of a reluctance to accommodate to the new learning environment. In addition, the reading situation in Case3 -- having reasonable vocabulary size but little knowledge of strategic reading -- resembles undergraduates' misconception of English reading in Zhang's (2010, 2001) studies. The notion that fluent English reading is equivalent to having a large vocabulary size may work well when students are at the stage of 'learning to read'. But this erroneous notion greatly hampers their development in academic reading, which requires them to be more interpretive and more critical of what they are reading.

6.8.2.4 Summary of Case Studies

The following Figure 6.1 highlights the development of these three participants' state strategies over time. Despite differences in their language proficiency, all of them deployed the same three strategies the most – “generating questions while reading”, “making inferences”, and “checking comprehension” -- both at Time1 and Time2. The difference between these three students lies in their combinations of these strategies, which account for the concurrent discrepancy and longitudinal development. For Case1 and Case2 at Time1, and Case3 at Time2, when their reading was impeded at the level of language decoding, they displayed similar patterns of strategy use: a high proportion of TBS, mainly in terms of generating questions and showing uncertainties about the linguistic input, accompanied by frequent monitoring processing. When their cognitive load was fully occupied by language understanding, SMS became the last choice during their reading. Nevertheless, at Time2, Case1 confounded this pattern by showing the highest proportion of SMS. In her case, the deployment of SMS, as the above analysis revealed, mainly consists of “faulty” inferences, of little relevance to situation model construction. This is qualitatively different from the pattern that emerged in Case2 at Time2, and Case3 at Time1. For these, a high proportion of SMS was accompanied by low deployment of TBS, and was associated with smooth language decoding.

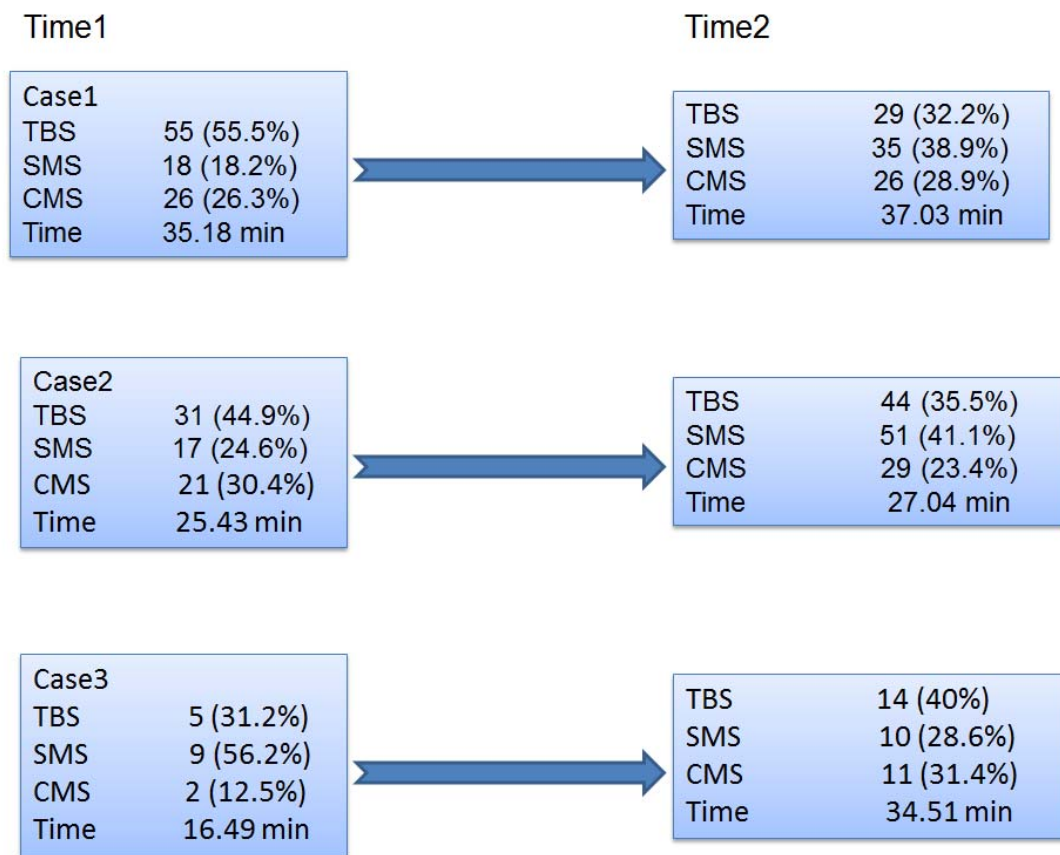


Figure 6.1 Comparison of strategy use of Case1, Case2, and Case3 at Time1 and Time2

Note: P: percentage; F: frequency; min: minutes for verbalisation

However, a discrepancy can be observed between Case2 and Case3, in spite of the commonality of cognitive allocations in SMS and TBS at surface level. For Case2, her combination of these strategies was generated by her improved English proficiency. She was more involved in constructing a situation model, by having a much wider choice of strategies: in particular, giving illustrations and evaluations in her reading, both on the authors (8 times) and on the text itself (11 times). In contrast, Case3, though proportionally high in SMS (even though the actual number is small), used the least amount of time (16.49 minutes for her first think-aloud) and the fewest strategies in her verbalisation among all 15 participants. Her situation model construction strategies (9 times) -- mainly "making inferences" (8 times) -- were sparsely deployed during reading.

There was no critical evaluation in her reading. Her occasional high level processing dropped dramatically, owing to the processing load at Time2.

In all, Case1 manifested increasing employment of SMS – “making inferences” in particular -- in her on-line reading at Time2. But these strategies were mainly compensatory, in order to help her guess the text information. Her broken and incomplete processing may be largely associated with her failure at the end of the academic year. At Time 1, Case 2 displayed similar reading processing to that of Case 1. She also struggled with language decoding. However, at Time2, there was an increase of SMS in her reading, showing a real cognitive engagement in critical reading. Among the three students, Case2 is the only one who made great progress over time. In contrast, Case3 started with reasonable language decoding ability, yet her reading development was slowed down by her poor reading habits and her unwillingness to adjust in her academic reading. Case3 became more text bound in terms of using more textbase strategies and fewer situation model construction strategies at Time2.

6.8.3 Qualitative Analysis 2: Syntactic Processing

A common response in the open-ended section of the questionnaires was that long sentence structures were a constant reading difficulty in participants' coursework reading. This was further demonstrated by Case3, particularly by her parsing on S10 at Time2. Although the questionnaires and case studies revealed this specific reading difficulty, little is known about the causes or the types of syntactic problems these students might have. Given their static use of trait TBS and state TBS, it would be of great significance to gain an in-depth knowledge about the factors related to this common problem.

In order to explore their sentence processing problems, the participants' syntactic parsing was examined in a task-provoked situation. The previous analyses indicated that the successful students outperformed the less successful ones in on-line reading with

regard to their use of SMS. When it comes to a specific subtask like syntactic parsing, arguably, similar differences would be detected as well.

All participants were divided into two groups as in the previous section: the successful and the less successful. For the sake of comparison and consistency, the strategies used for processing S10 at Time2 (the original sentence is in bold) were chosen for analysis.

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons. (S10, Time2)

The previous analysis showed that Case3 attempted to make an inference when she read the beginning of the sentence, but she was uncertain. When she realised that the long sentence had confused her, her immediate reaction was to re-read it. The sequence of strategies she used for processing this sentence was as follows:

1. “generating questions while reading” and “making inferences”: *This study argues, (.)*
((tr.: the argue, (.) the argument of the authors’ theories?))
2. “checking comprehension”: *so confused, and so long.*
3. “re-reading”: *Let me read it again*
4. “generating questions while reading”: *does this mean indicator?*
5. “generating questions while reading”: *((tr.: use China’s micro)) data to ((tr.: illustrate, hardly any, uh?))*
6. “generating questions while reading”: *hardly anything (2) is lost, mm, nothing is missing?*
7. “taking steps to repair faulty comprehension”: *((tr.: within the province:::, in (.) uh, no, no, very little is lost regarding the inter-provincial)) rating,*

8. "checking comprehension": *((tr.: concerning the)) outcome of poverty, ((tr.: very difficult to understand,*
9. "checking comprehension": *Uh, it is very difficult to understand this paragraph.*

Among the nine strategies, four were TBS (No. 1, 4, 5, 6), which were all, except for No.1, deployed to generate questions about the literal meaning of this sentence. This indicates an overload of cognitive processing at the level of language input. When sentence understanding becomes tough, more comprehension monitoring emerges, attempting to make the most of broken and incomplete comprehension. Here, Case3 used one monitoring strategy -- "checking comprehension" -- three times, which suggests that she knew she was struggling with this sentence. In addition, she also used "re-reading" and "taking steps to repair faulty comprehension" once. Of the nine strategies, only the first question was used to make an inference, showing some cognitive effort to read between the lines. Judging from the above combinations of strategies, it can be inferred that her choice of strategies largely arose from her language processing difficulties, which was mainly made up of TBS and CMS.

Compared with Case3, the less successful group (P8, P9, P12, and P15) exhibited many similarities when they were parsing S10 at Time2 in terms of the sequence and the purposes of using the following strategies:

P8: "making inferences" → "making inferences" → "re-reading" → "checking comprehension"

P9 (Case1): "generating questions while reading" → "checking comprehension" → "checking comprehension" and "generating questions while reading" → "making inferences" → "making inferences" → "making inferences" → "checking comprehension" → "making inferences" → "generating questions while reading" → "generating questions while reading" and "making inferences" → "making inferences" → "generating questions while reading"

P12: “connecting one part of the text to another” and “generating questions while reading”→“taking steps to repair faulty comprehension”→“generating questions while reading”→“generating questions while reading”→“generating questions while reading”→“generating questions while reading”

P15: “generating questions while reading” and “guessing unknown words”→
“generating questions while reading” and “guessing unknown words”

Although the four participants sometimes displayed dynamic strategic processing – 14 instances for Case1 (P9), and 7 examples for P12 -- the repertoire of these strategies seems very limited. For example, P8 made two inferences at the beginning of the sentence, but she soon got lost. She tried the strategies of “re-reading” and “checking comprehension”, but still failed to make sense of this sentence. In the end, she even asked to change to another text due to her frustration. In this case, her restricted cognitive resources failed to compensate for her deficiency in sentence processing.

The limited strategies that this group deployed are mainly about textbase understanding, such as “generating questions while reading”. As the most frequently used strategy among these participants, this strategy was often associated with decoding problems. Take the following questions, for instance:

- a. *“(tr.: does it mean)) gap ratio?”*,
- b. *“(tr.: does this mean, uh, using some Chinese micro-data to (.) this means (.) uh, this means, to obtain some conclusion?)”*
- c. *“(tr.: does)) ranking ((tr.: mean large scale?)”*
- d. *Ranking, ((tr.: or ranking of something?)”*
- e. *gap ratio, ratio, ((tr.: refers to the poverty regions, the poverty ditch, yep, how to dig the)) gap?*
- f. *“(tr.: then::: to illustrate that very little is lost in the inter – in the inner provinces?)”*

Clearly, these questions reflect the readers' confusions in processing the linguistic units in this sentence. At the same time, they were fully aware of their uncertainty, or faulty comprehension, and asking questions was often accompanied by conscious monitoring behaviours, like "checking comprehension", "re-reading", or "taking steps to repair faulty comprehension". In Case1, this situation was also intertwined with inference-making. In most instances, her inferences appeared after her acknowledgement of linguistic difficulty or uncertainty. As shown in the previous analysis, inferences made in such context usually were more like a coping strategy, having little to do with reading the implicit messages in the text.

In contrast, most of the successful group displayed a much bigger repertoire of strategies (from one to seven different strategies) when processing this sentence (see below). The sequence of strategies they used is presented below:

P3: "checking comprehension" → "checking comprehension"

P1 (Case2): "taking steps to repair faulty comprehension" → "making inferences" → "checking comprehension" → "focusing on important information" → "generating questions while reading" → "focusing on important information" → "connecting one part of the text to another" → "generating questions while reading" → "generating questions while reading" and "guessing unfamiliar words" → "checking comprehension" → "focusing on important information"

P2: "generating questions while reading" and "guessing unknown words" → "checking comprehension" → "evaluating the text" → "generating questions while reading" → "making inferences" → "making inferences"

P4: "making inferences" → "generating questions while reading" → "guessing unknown words" and "generating questions while reading" → "guessing unknown words" and "generating questions while reading" → "checking comprehension" → "checking comprehension" → "checking comprehension"

P5: “checking comprehension”→“re-reading”→“re-reading”→“generating question while reading”→“evaluating the author”→“checking comprehension”→“checking comprehension”→“checking comprehension”→“planning what steps to take”→“checking comprehension”

P6: “making inferences”→“making inferences”→“making inferences”→“evaluating the text”→“checking comprehension”→“making inferences”→“making inferences”

P10: “generating questions while reading”→“checking comprehension”→“underlining important parts”→“planning what steps to take”→“evaluating the text”→“paying attention to text structure”→“making inferences”

P11: “connecting one part of the text to another”→“generating questions while reading”→“generating questions while reading”→“checking comprehension”→“focusing on important information”→“checking comprehension”→“checking comprehension”→“checking comprehension”

P13: “connecting one part of the text to another”→“making notes” and “using grammatical knowledge”→“generating questions while reading”→“generating questions while reading”→“taking steps to repair faulty comprehension”→“underlining the important parts”

P14: “making inferences”→“making inferences”→“making inferences”→“generating questions while reading”→“making inferences”→“generating questions while reading”→“making inferences”

The wider choices of strategies suggest that these students were not only more cognitively resourceful, but also capable of switching to different strategies when special cognitive processing was required. However, their deployment of TBS -- such as “guessing unknown words”, “generating questions”, “taking notes”, “underlining important parts”, “connecting one part to another”, and “using grammatical knowledge” -- implies that these students were experiencing similar language difficulties in syntactic

parsing as the less successful group. What distinguishes the successful group was their resourcefulness and flexibility in using these strategies to help them with textbase understanding. Once they got the main idea, they were likely to shift their cognitive processing to situation model construction, like “making inferences”, “evaluating the text”, and “critiquing the authors”. Take Case2 for instance. When she realised that she had mistaken poverty for property – “taking steps to repair faulty comprehension” -- she made the following inference: *“Poverty line in China, ((tr.: in China, if, it can’t, it can’t follow the global, for example, using the)) US dollar, ((tr.: because criterion in America, because China is a developing country, its domestic situation is different, then, then the context () is also different.”* Then she checked her comprehension: *“((tr.: the latter part should have talked about something, uh, relative to the, the indicator, the indicator number.”*

Those who were more competent with language decoding, as exemplified by P6 and P14, would start with higher level processing straightaway, namely, “making inferences”. Nevertheless, when they were impeded by their language processing, they would display similar choices of strategy to Case1, a combination of “asking questions while reading” and “making inferences”. In this situation, inferences made immediately after a question about language processing acted more like comprehension gap fillers, rather than as reading beyond the lines.

Based on the general features of strategy use between the two groups, differences of syntactic processing emerge (see Figure 6.2). Because the less successful group displayed similar processing characteristics to some participants in the successful group, like Case3 and P3 (limited cognitive resources), a pattern of the weaker readers is built up to predict the possible syntactic processes among those who should have made greater progress in their academic reading.

Generally speaking, the weaker readers' processing would appear to be restricted, both by their deficiency in language processing and by their limited cognitive resources. When encountering unfamiliar expressions (see Figure 6.2), their reaction was very likely to generate questions about the meanings of individual words. Because they were aware of their uncertainty, question generation was usually interplayed with "checking comprehension", in an attempt to maximise and make sense of their broken decoding from the text. For some of them (e.g. Case1), inferences were made in order to fill the comprehension gap, so that they could keep on reading. There may be a few alternative strategies in use as well, such as "re-reading" or "taking steps to repair faulty comprehension" (e.g. P12). But the sequence of their strategy employment – "generating questions", (sometimes) "making inferences", and "checking comprehension" -- appeared to be a dominant pattern in their cognitive processing. It largely exhibited a combination of TBS and CMS, in which the deployment of TBS was mainly triggered by language deficiency, while CMS was applied to maximise the poor quality of textual information.

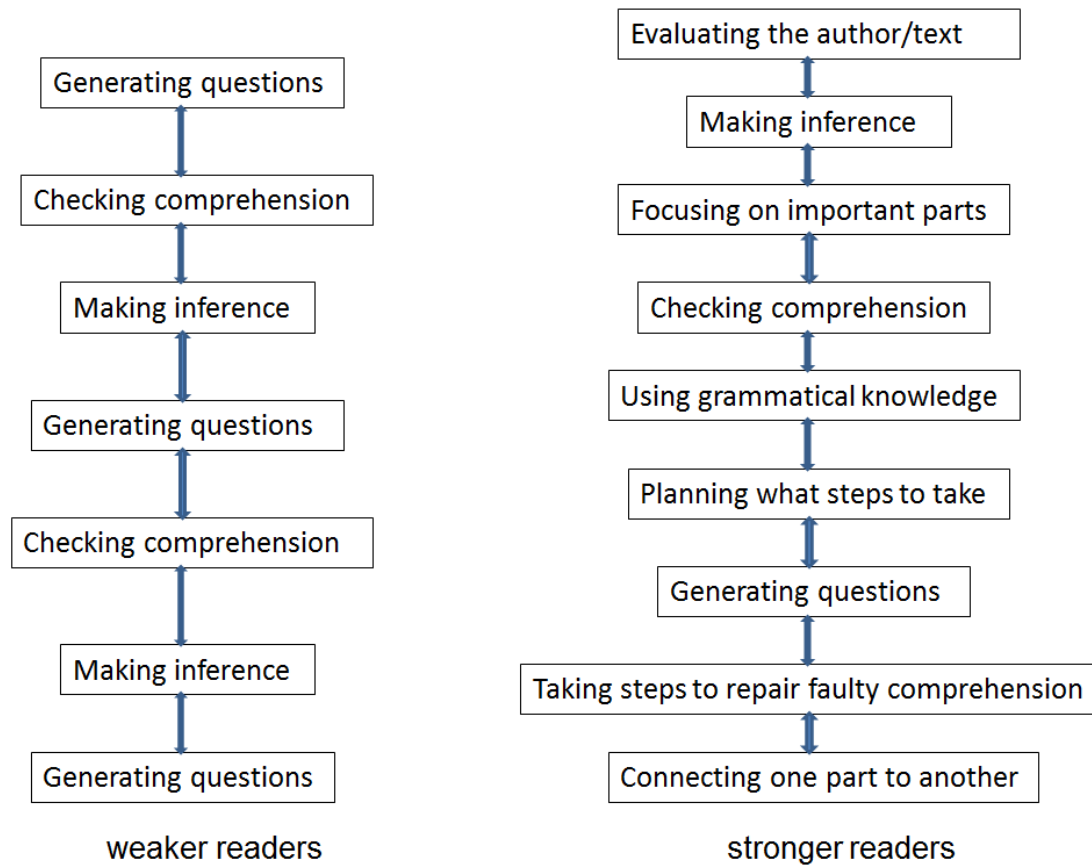


Figure 6.2 Syntactic processing patterns between weak and strong readers

In the right-hand column of Figure 6.2, the stronger readers' syntactic processing pattern is illustrated. The main characteristic of this pattern is its bigger repertoire which encompasses all three sub-entities of cognitive processing: TBS, SMS, and CMS. The wide range of TBS and CMS suggests the important roles that strategic knowledge and language proficiency play in academic reading. It shows that knowledge of strategic reading – cognitive resources – does compensate for participants' deficiency in language processing. Although the stronger readers demonstrated similar cognitive processing to the weaker readers, so far as the strategies of "generating questions", "making inferences", and "checking comprehension" are concerned, the resourcefulness of the stronger readers at the levels of textbase understanding and monitoring somehow helped them grasp the key ideas in this sentence. This manifests shifts between various strategies in accordance with processing need, such as, "using grammatical knowledge",

“repairing faulty comprehension”, “focusing on important parts”, “connecting one part to another”, and “planning what steps to take”. The wide repertoire of TBS and CMS consequently made it possible for some of them to engage in situation model construction, like “making inferences”, “evaluating the text” and “critiquing the author”. The frequency of their SMS deployment, even though it is comparatively low, signifies a transition in their reading towards higher level processing. It may also indicate the beginning of reading shift from ‘learning to read’ to ‘reading to learn’.

Nevertheless, their frequent employment of TBS also suggests that their cognitive attention was largely drawn to language processing. Their competent knowledge of textbase strategies, unfortunately, lags behind the academic requirements for their coursework reading, in that critical reading needs more cognitive engagement in situation model construction.

Because both groups had yet to achieve automatic processing, owing to their over-reliance on TBS, there was consequently no significant difference in their deployment of state SMS in on-line reading. Their TBS-oriented strategy use supports Zhang’s finding (2001; 2010) that they were still at a developing stage both in terms of their English language proficiency and knowledge of strategic reading. If they had had less cognitive workload when understanding text meaning, it is likely that more cognition would have been applied to situation model construction.

6.9 Summary

The above analysis offers us an insightful picture of Chinese students’ employment of state strategies. Unlike their trait strategy use, the quantitative analysis indicates that there was no significant change in their state strategy use. But between the successful and the less successful students, there existed significant differences with regard to their deployment of textbase strategies, situation model construction strategies, and

comprehension monitoring strategies, despite the fact that both groups did not manifest significant changes over time. Compared with the less successful students, the successful ones were capable of engaging in more situation model construction strategies and comprehension monitoring strategies, but fewer textbase strategies in their on-line reading.

The qualitative analysis, on the other hand, provides us with detailed information about the context of state strategy use. The case studies suggest an intertwined relationship between the individual cognitive paths and the other elements involved in the developing process, such as language proficiency, knowledge of strategic reading, and personal factors. In addition, it is also revealed that although weak readers are usually assumed to be text bound due to their English language deficits, they could frequently demonstrate higher level processing as well, as did Case1. The unique features of Case1 are that, for one thing, her choice of situation model construction strategies was mainly confined to one strategy: “making inferences”. For another, this strategy was used more like a comprehension gap filler, rather than as a means to infer the hidden messages in the text. Because the inferences made in such a context were often associated with meaning guessing, this strategy was usually accompanied by another strategy: “checking comprehension”, an index of uncertainty in comprehension.

Furthermore, analysis of the syntactic parsing shows that both the weaker and the stronger readers demonstrated over-reliance on textbase strategies. The weaker readers tended to be inhibited both by their language processing and their limited choices of strategies. Comparatively speaking, the stronger readers definitely displayed a wider repertoire of reading strategies when they encountered reading difficulties. The TBS-oriented combinations of state strategies suggest that these readers had not reached automatic processing in their reading. This is consistent with their perceived reading difficulties: they believed that unknown words and complex sentence structures

presented problems for them all year round (see Figure 5.2, which is pivotal to my discussion from here on). From a cognitive perspective, both trait and state, this gives an explanation of why their employment of textbase strategies did not demonstrate significant development during their master's study.

Clearly, the development of their state strategies fails to match that of their trait strategies. Unparalleled progress between these two types of strategy status indicates the multifaceted nature of strategic reading in an academic context. At Time1, the participants might not have realised this need to employ situation model construction strategies in their academic reading; while at Time2, how to engage in critical reading in their coursework study had become a common concern among them (see 5.5.2 in Chapter 5). This change, in their recognition of the need to engage in critical reading, largely accounts for the significant development in trait strategies over time. Nevertheless, the above analysis shows that the development of state strategies was greatly restrained by two factors: English language proficiency (both for strong and weak readers) and knowledge of strategic reading (for weaker readers only).

Although state strategies are highly fluid and transitory, as the above analysis demonstrates, the case studies show that the development of state strategies was closely associated with some personal factors, such as their attitudes to accommodating to the UK HE context; their determination to succeed; and their willingness to adopt new reading strategies in their coursework study. It was a complex process, in which both cognitive and socio-cultural elements were intertwined to affect the way they read.

In all, the combination of quantitative and qualitative analyses in this chapter enables us to discern the overall development of Chinese students' state strategy use, as well as the detailed context in which these strategies are used. In the next chapter, I will continue to investigate the socio-cultural factors involved in this developing process, and try to

determine how these factors are related to these students' choice of strategies in their academic reading.

Chapter Seven: Investigation of Socio-cultural Factors

When thinking about what effects study abroad might have on second language learning ... We need to more fully explore some of the qualitative aspect of learning afforded by a particular context... We need to ask in what ways the learner is prepared for the special challenges presented by a specific learning context. We also need to consider how those things a student brings to a learning environment change as a function of the experiences afforded by that learning environment (Segalowitz et al. 2004:15).

Data analyses in the previous chapters have offered us a mixed and rather complex picture of Chinese students' academic reading in terms of their choice of strategies. The quantitative analysis indicates that their trait strategy use demonstrates significant changes between Time1 and Time2 in a task-free situation, especially in relation to their deployment of situation model construction strategies. However, these statistical results tend to "denature" the learning phenomenon (Atkinson, 2002), in that little is known about the individual and contextual factors that contribute to such changes. The verbal protocol analysis, on the other hand, provides an in-depth examination of individual students' state strategy use in a task-specific condition, but fails to detect any significant development over time. The imbalanced development between Chinese students' trait and state strategies needs to be explored further, especially with regard to why and how their strategic reading shows signs of such distinctive development. Although the case studies in Chapter Six showed that students' choice of state strategies was, apart from their English language proficiency and knowledge of strategic reading, closely interplaying with other personal factors (such as their willingness to accommodate to the new learning environment and their desire to succeed), these contributory factors need to be backed up by other data sources in order to explore the interrelationship between their strategy use and the contextual impact.

As Segalowitz et al. (2004) argue above, studies on international students should focus on the qualitative aspect of learning with regard to the following two considerations: firstly, how the students are prepared for the new academic challenge; secondly, how the things

that the students bring to the new learning community change as a result of environmental mediation. This developmental perspective is regarded as an “attempt to honor the profound wholeness and situatedness of social scenes and individuals-in-the-world” (Atkinson, 2002:539). In this study, in order to explore the ‘wholeness and situatedness’ of Chinese students’ academic reading, it is crucial to know what they have brought with them to the UK university setting, and how these things change during their master’s study. All these will help contextualise the reading development of the individual students discussed, and offer clues about the different development of their trait and state strategy use over time.

In order to explore the socio-cultural factors involved in decision-making in the students’ academic reading, in this chapter, I will use data collected from focus groups and interviews. The reason for combining these two methods in this study is that they enable me to focus on different aspects of their academic reading owing to the specific strengths that each of them has. This is important given the fact that the data were collected in a university setting (detailed discussion on this follows in 7.1 and 7.2). Because Chinese international students arrive in the UK with their own culture and social values, what they have established in their past learning experience is likely to have a lasting effect on their academic study. Therefore, in data analysis, environmental mediation was examined in a developmental way which encompassed two learning communities: China and the UK. Furthermore, the mediation tools were categorised in the light of the socio-cultural perspectives discussed in Chapter Three, namely, institutional mediation, mediating agents, and mediating objects. These tools were supposed to be not only associated with the types of reading strategies they used, but also with the frequency of strategy use in their reading. In the following sections, I will first justify using focus groups and interviews as research methods in data collection. Then I will briefly introduce the participants and the procedures used in data collection before carrying out data analysis.

7.1 Rationale for Using Focus Groups

In this study focus groups were used to investigate the environmental factors involved in Chinese students' decision-making in their academic reading. The rationale for using focus groups is that group discussions following a set of prepared questions in a non-threatening environment help elicit information about participants' feelings, experiences, and attitudes (Krueger, 1994; 1998; Vaughn et al. 1996; Kitzinger and Barbour, 1999; Smithson, 2000) that cannot be captured by quantitative analysis. It is assumed that by engaging in lively group interactions, people are more relaxed about exchanging their personal experiences (Morgan, 1997), so that the multivocality of participants' points of view can be heard and displayed to the moderator (Madriz, 2000; Myers, 1998).

Since the format of focus groups is based on the collective experience of group members' brainstorming (Dörnyei, 2007:144), the focused task *per se* determined that the agenda in this study was experientially oriented. Calder (1977) maintains that experiential tasks focus on the "natural attitudes" of group members from a predetermined population toward their shared life experiences, preferences, and behaviour. In this study all the tasks were aimed at investigating Chinese international students' English reading in two learning contexts: China and the UK (for the specific questions used, see Appendix 11).

As for focus groups participants, Fern (2001:8) claims that it is easier to explore the commonalities of the population of interest if the participants share some key features. At Time1, all the participants except one were recruited from the same programme. At Time2, the number of participants was reduced to four, owing to the pressure of assignment deadlines. But these remaining four participants were all classmates.

In running successful focus groups, the moderator must play a crucial role in keeping the interactions going. In this study, the fact that I was from the same population as the participants – I am Chinese, and am studying at the same university as them – smoothed away many language and cultural problems which might otherwise have arisen in running an experiential-oriented focus group. Furthermore, my past university teaching experience in China and my current student status also provided me with solid background knowledge of how to communicate with the participants and what questions to ask about their reading situation during the interactions. In addition, I positioned myself both as a moderator and as a student, aiming to establish an equal relationship with the participants. I also took a stance that a certain level of self-disclosure (Chelune, 1975) increases the chances of receiving similar intimate information from the participants (Fern, 2001:103). For instance, when one participant mentioned about reading product information in supermarkets, I disclosed my embarrassing experience that the hand cream I thought I had bought turned out to be handwash, owing to my own careless reading of product information. Of course, this led to some amusement among the participants, and created a relaxed atmosphere, helping to generate more dynamic and more spontaneous interactions.

Unlike other research methods, a focus group does not seem to have clear-cut pros and cons. For instance, the relaxed setting encourages more disclosure of information from the participants (Madriz, 2000; Puchta and Potter, 2004), but it is also likely, in such a setting, that people tend to exchange their opinions, rather than challenging each other (Morgan, 1997:20). This is even more likely to occur when the composition of the group is collectivism-oriented, like the Chinese, who generally value in-group homogeneity (Fern, 2001:51). Myers (1998) points out that there is always a danger that such homogeneity

could [affect] the way participants expected agreement and disagreement – not so much because they [have] something in common, but because they soon [SEE] THEMSELVES as having something in common (p.89).

On the other hand, the unnatural setting with a prepared agenda often yields insightful data which otherwise would not be accessible in a straightforward interview (Morgan, 1997:19; Madriz, 2000:836). In addition, focus groups were an economical way of collecting large amounts of data over limited periods of time (Puchta and Potter, 2004; Morgan, 1997) in this study. Such information enabled me to explore the socio-cultural factors involved in their strategic reading in a developmental way, between China and the UK, and between Time1 and Time2.

Compared with focus groups, one-to-one interviews are considered to produce more in-depth data, given the same number of individuals (Morgan, 1997:19). In the next section, I will justify using interviews as another part of my qualitative research method in data collection.

7.2 Rationale for Using Semi-structured Interviews

In this study an interview is defined as a one-to-one verbal interchange, either face-to-face, or on the telephone, in which the interviewer tries to obtain the interviewees' perspectives on their lives, experiences, or situations which are pertinent to the phenomena of research interest (Taylor and Bogdan, 1984; Kvale, 1996; Burns, 2000).

Interviewing has been a popular research method to collect data in learner strategy studies (O'Malley and Chamot, 1990; Li and Munby, 1996; Gao, 2003; Phakiti, 2003; Zhang, 2001, 2010) because it makes it possible to "investigate the developmental process of strategy use over time, via participants' own retrospective accounts" (Gao, 2003:44), and because "the researcher can use the interview data to arrive at useful explanations for some quantitative findings" (Phakiti, 2003:37). It is robust to use

semi-structured interviews in this study in that the interviewees' account of their English reading added an extra dimension to my quantitative findings: the unparalleled development of their trait and state strategy use.

The main disadvantage of using interviews is that they are time-consuming. In addition, there may be a "social desirability bias" among the interviewees, who may assume that certain answers would be better received than others. It is also likely that some interviewees would try to present themselves in a better light, while others might either be too shy or too verbose during the interview (Dörnyei, 2007:143-4). In this study, since interviews were used as a supplementary to think-aloud, by the time the interviews were conducted, a rapport had already been built up between the interviewees and me. This trusting relationship enabled the interviews to be conducted in a friendly and natural way, which greatly minimised potential weaknesses.

In this study, conducting both individual interviews and focus groups was crucial for answering Research Question (2): What socio-cultural factors are involved in [the participants'] choice of reading strategies? How are these factors related to their strategy use? While focus groups could collect large amount of data relating to Chinese international students' English reading, the relatively non-threatening context of individual interviews was especially vital to gaining access to the experiences of those students who had very low self-esteem as a result of their unsatisfactory academic performance.

Another reason for combining these two methods was that they were carried out in a university setting. According to Michell (1999:37), when participants are classmates, lack of anonymity means that what has been discussed in a focus group may be reported and passed on to others through peer group networks. The conflict between public and private considerations can significantly constrain the amount of information disclosure.

But such weaknesses do not exist in interviews. The complementary relationship between interviews and focus groups is well illustrated below by Kitzinger and Barbour (1999:5):

Interviews are more effective for tapping into individual biographies, but focus groups are invaluable for examining how knowledge, ideas, story-telling, self-presentation and linguistic exchanges operate within a given cultural context.

In order to neutralise the respective weaknesses and to maximise the strengths of these two methods, focus groups and interviews were both used in this study. In the next section, I will introduce the specific procedures that were involved in data collection.

7.3 Procedures

Both the focus groups and student interviews were carried out twice among the same participants in one academic year. All these participants except one filled in the questionnaires twice. In order to avoid cognitive load on the participants which otherwise might potentially distort the validity of the collected data, those who took part in focus groups were not included in think-aloud sessions or in interviews.

The interviewees fell into two groups: 15 think-aloud participants and 8 lecturers. The students' interviews were conducted immediately after think-aloud, both at Time1 and at Time2, with a dual function. Firstly, the interviews served as a subordinate part of the think-aloud approach in order to clarify some details of participants' verbalisation. Secondly, they were part of the mixed methods. The interviews followed a set of questions pertinent to their academic reading, so that comparable data across the interviewees could be obtained (Dörnyei, 2007:135; Burns, 2000:424). Nevertheless, I was also flexible in following the interesting points which emerged during the interviews. For example, one participant during the interview mentioned that he had trouble understanding long sentences during think-aloud. That instinctively triggered my

curiosity about that student's English learning at university in China, even though this was not covered in the question list. This participant said that in university his English teacher never taught them grammar, because they were supposed to have learnt it in secondary school. Even when students asked specific questions about grammar, they would be always sent to read the grammar books. Since the interviewee did not understand English structures in secondary school, and had failed to access appropriate help at university, he still had trouble understanding long sentences while he was studying in the UK. What is worse, he found that there were too many long sentences in his coursework reading.

The lecturers' interviews were conducted in the second semester to obtain a complementary perspective on Chinese students' academic reading. Among them, two Chinese lecturers were interviewed by telephone in Chinese, so that they could fully express themselves. The six lecturers from the Business School (two professors, three lecturers, and one in-session English language teacher) were interviewed in their offices. All these lecturers were teaching the same cohort of Chinese students that I was studying. English was the medium of these interviews.

Recruiting participants for the focus groups was very different. At Time1, eight participants (three males and five females) were recruited in various ways. One student was recruited through the questionnaires, in which he had indicated that he would like to take part in this research. This participant also brought a friend along to the first focus group, at my request. The remaining students were from an in-session English class. Among them, seven of the participants were from the Logistics And Operations Management (LOM) programme, and one from the International Transport programme.

The first focus group was conducted in a studio to ensure adequate sound recording. Refreshments were prepared in order to create an inviting and relaxing atmosphere. My

past experience of English teaching in university in China and my self-disclosure strategy enabled good communication with the participants. Indeed, at Time2, I had been accepted as a friend by the four remaining participants from LOM. This time the focus group was held in an office. Although the other four had failed to turn up, it still turned out to be a very dynamic group discussion, and the prepared agenda was fully covered. Chinese was spoken during the whole session at both times, so that none of the participants would have any problems expressing themselves. An MA Chinese student from ENCAP (e.g. from a different school in Cardiff University) volunteered to take notes at the first focus group to make sure that I could correctly match voice to each participant on the recorded data during transcribing.

Having introduced the procedures of data collection, I will, in the following section, focus on data analysis in line with socio-cultural perspectives, in an attempt to explore the intertwined relationship between the learning context and Chinese students' strategy use in their academic reading.

7.4 Data Analysis

Following the emerging trend in SLA which stresses the socio-cultural impact on language learning, the following data analysis was mainly based on Vygotskian social cultural theory (SCT), which maintains that social interaction and cultural institutions are essential to an individual's cognitive growth and development (Donato and McCormick, 1994:453). In particular, my analysis bore heavily on the concepts of mediation, genesis approach, and activity theory. These three concepts were used as the primary theoretical framework for exploring the factors which affected Chinese international students' choice of reading strategies in a historical and developmental way.

Within socio-cultural perspectives, culturally rooted mediation is related to the transformation of learners' innate mental functions (Lantolf and Pavlenko, 1995:109;

Lantolf and Thorne, 2006:28), such as selective attention, logical memory, rational thinking, and monitoring. Donato and McCormick (1994) claim that the emergence and development of individual learners' learning strategies is a by-product of goal-directed situated activity. It is a process in which learners are mediated and apprenticed into competent membership of the community of practice (p.456). Gao (2006) argues that contextual impact is closely associated with the frequency and types of strategy used among Chinese students (p.58). In Gao's study (2006), three mediating elements are singled out to examine the environmental impact on the development of Chinese international students' vocabulary strategy use, with regard to language (discourse), objects (assessment), and agents (teachers, language tutors, students, and parents).

However, it is probably because Gao (2006) re-analyses his previous data in this study that he fails to integrate discourse impact into a wider context of institutional influence. Institutional mediation, according to Lantolf and Thorne (2006), refers to the "normative and expected conduct, as well as institutionalization of dimensions of everyday practice" (p.234). In an educational context, the institutional impact is overwhelming, largely manifested by what is emphasised and valued throughout the education system. It is the interactions between what are expected of the students in terms of academic requirements and learning culture and the students' effort to meet such demands that gradually give rise to the students' unique choice of strategy use. To some extent, what Gao (2006) categorises as a discourse tool – the impact of discourse on students' vocabulary learning – constitutes only part of institutional mediation. This suggests that Gao's (2006) analyses have been confined to a specific area of institutional mediation. This might have led to a situation in which other parts of interplay between institutional mediation and Chinese students' strategy use have been neglected. In this study, in order to explore fully the impact of socio-cultural factors on Chinese international students' strategic reading, the institutional tool will be adopted in data analysis, together

with two further mediation elements: agents (teachers and students), and objects (reading tasks).

In the following analysis, I will focus mainly on this mediating process, and examine the interplay between the environmental influences and Chinese students' cognitive development in strategic reading.

7.4.1 Institutional Mediation

Institutional mediation mainly refers to the impact generated within an educational context of academic requirements. Knowledge of Chinese international students' two distinctive learning communities (i.e. China and the UK, see Chapter Two) helps us understand the complexity of their strategy use at three levels: what takes place? why does it take place? and how is it carried out? (Bødker, 1997:150-1)

During focus groups, the issue of teaching and learning for the test, in particular, College English Test Band 4 and Band 6 tests, was raised several times by the participants when they were initially asked about their English reading in China. Participant W thought that her university focused only on helping the students pass the Band tests:

((tr.:I think college English teaching in China now basically focuses on the Band 4 test. Once the students have passed, how to continue the teaching was absolutely out of the question, especially for us science students)) (Time1: focus group).

It was disclosed that the universities (from which the participants graduated) set a main objective of having a high passing rate among their undergraduates. This uniform goal, not surprisingly, would be reflected in English teaching and learning. As a result, CET preparation had dominated nearly everything relating to English study at university.

((tr.:We, in my case, the first thing after we entered university was to take exams to grade your English levels. After that, for example, we reached level B, so we were allowed to take

the Band 4 test in the first year ... the first year was very busy ... we were preparing intensively for the Band 4 exam. Once we passed the Band 4 test, since we were science students, unlike the English majors, there were no proper English classes afterwards)) (Participant W, FG1)⁷.

Because most universities care so much about their ranking in Band 4 results each year, this national test has generated a powerful washback effect in terms of teaching management, syllabus design, teaching objectives, and English learning, as discussed in Chapter 2. The intensified test preparation in and outside English classes could well have determined that the strategies these students developed were mainly test-oriented: namely, how to find the correct answers without necessarily understanding the text (Cheng, 2008). As a by-product of such practice, their deployment of strategies would then have been largely confined to gaining 'atomistic knowledge about English' (Stanley, 2011); it would have had little to do with deploying situation model construction strategies, such as reading the implicit messages, and making their own evaluations.

Looking back at her efforts to prepare for the Band 4 test at university, Participant L claimed at Time1 that she hardly learnt anything in her university English class: "I learned English only in middle school and high school... I feel my English became poorer in university." In Participant D's view, the two-year period of university English learning was far from enough to prepare students for studying abroad: "If you have only learnt English in your first two years at university, coming here, I feel, you will get completely lost, especially in your study" (FG2). Weir et al. (2000:2) argue that the exam-oriented teaching and learning in China fail to develop students' language skills and strategies so that they could become competent L2 readers of English academic articles. Furthermore, we can assume that little attention has been paid in English teaching at tertiary level to helping students with their transition from 'learning to read' to 'reading to learn'. Consequently, upon their arrival, international students' English reading proficiency

⁷ FG1 refers to focus group at Time1; FG2 refers to focus group at Time2.

largely remains at the level of 'learning to read', characterised by textbase strategies (see 6.8).

Compared with the compulsory English teaching in the first two years at university in China, academic English learning in the third and fourth year varies from university to university. In some universities, passing the Band 4 test meant the end of English teaching. However, at this stage, if students wanted to continue their English study, they could still choose to take all sorts of English exams.

((tr.: In the third and fourth years, there were not any classes focusing on Business English. That's it. We mainly studied on our own. If you were interested in it, you would continue to learn. You would try to pass all sorts of English tests.)) (Participant F, FG1)

In Participant F's view, learning English meant taking exams. Such a perception of English learning was shaped, to a great extent, by the education system he had experienced in China. It is true that the motivation to take exams would have mobilised his effort to learn more English. But it would also have constrained his choices of strategies as well, as discussed above. Given the prevalent format of multiple choice in the reading comprehension test in China (Pang, 2008), it is quite possible to discover the correct answers without fully understanding the text (Cheng, 2008; Cheng and Gao, 2002), let alone getting engaged in critical reading. The strategies practised again and again by students were mainly testing strategies which helped them pass the tests, and get high scores (Guo, 2006). Once the exams were over, English learning drew to a halt: "everything was finished after the exam, once we finished ticking the answers, handed in the paper, then job done. It was impossible to fully understand the article" (Participant Y, FG1).

After they arrived in the UK, this test-dominated teaching and learning disappeared. Instead, they were expected to be critical and original in their coursework study. This

indicates that the strategies in which they were competent in China would no longer work in a UK university setting.

It's such a complete experience that one cannot simply think, I am a good student. I'll go, and I'll do all I've always been doing, but now in English instead of whatever first language is. (J, in-session English teacher, IV⁸)

The biggest challenge was inevitably the one which they had never practised in their previous study:

((tr.: Before, I would never think about whether this idea is right, whether you agree or disagree with it. Never! Now you have to think about it ... It seems in China we don't have such a concept. Whatever the books say is right. Authoritative. Basically, all the teachers are authoritative. Books are authoritative. Never, we never have to do)) critical thinking. ((tr.: Never have such an idea.)) (Y, IV2)

Professor P from Business School thought that such non-critical approaches among Chinese international students arose from Chinese culture, where respect for teachers was highly valued, rather than challenging and criticising them:

I think they have been brought up in a culture where the teacher is very high. And they have great respect for the teacher, and for the professor. And if the professor has written something which has been published, they don't feel they can criticise this. They could as much accept it. That's right. It must be right. Professor wrote it, it must be right. (Professor P, IV)

If the above account underpins the interplay between non-critical thinking and academic culture in China -- encapsulated as respect for teachers and acceptance of published works -- Professor L from the Business School thought that Chinese students' "lack of a critical approach to things" was also related to other factors that "they don't have the chance to read enough", and "they are reading too slowly". Slow speed, a sign of non-automatic processing, suggests inadequacy in reading around the subject in their study. It also suggests a lack of necessary background knowledge which is essential to

⁸ IV: interview. IV1 refers to interview at Time1, and IV2 refers to interview at Time2.

facilitate understanding and to engage in critical evaluation during reading. For these two reasons, Professor L claimed that Chinese international students were “the least critically minded” of all his students.

The above accounts reveal the conflict between academic culture in China and in the UK. In particular, respecting and accepting what is said -- a popular practice in their previous learning environment -- is much less desirable in the UK HE setting, as suggested in Chapter Two. To be critical and evaluative is considered to be a basic learning skill in Western academia. In contrast, as a by-product of the Chinese education system, Chinese students have been socialized to be respectful, eager to learn, but not critical. In academic reading, this is manifested as little cognitive engagement in situation model construction. Students’ deployment of reading strategies would be mainly at the level of textbase understanding. In addition, the reading speed of 70 wpm required in Band 4 (see Chapter 2) largely contributes to the slow reading among the students. Given the powerful washback effect, the Band 4 test delivers a message to the test-takers about what the English reading rate should be. The low requirement in reading speed is directly associated with word-by-word reading, hence the deployment of textbase strategies.

The following interview at Time2 further mirrors disparities between the two education systems. In response to the question regarding how she engaged in critical reading in her coursework study, Interviewee L, unlike her peer students, kept saying “This was easy”. She argued what she needed to do was simply state the advantages and disadvantages of the issue *per se*. It seemed that she might either have misunderstood the question, or misunderstood the concept of critical reading. Therefore, the topic of critical reading was raised again. This time the question was worded more directly.

Jie: Ok, coming back to the previous question. When you are reading, do you ever say to yourself: this writer is not right, I don't agree with this point of view. Do you have such mental processing during reading?

- L: Rarely. Very rarely. Because how? Those are academic essays, academic articles! Maybe under consciousness, I respect them. I admire them. Maybe later I may say this is bullshit! But now, no! Seldom!
- Jie: So now you feel it is difficult to say: oh this is not so good.
- L: No, no. Seldom to say that. Yes, I accept it. And I can compare with other opinions.
- Jie: So you still accept it, but it is difficult to say: this is not right. I doubt it.
- L: I cannot, I can't say that because I think I am not qualified. ((laugh)) I am not qualified, in terms of academic knowledge. You mean saying, be brave to say bullshit to academic pieces is a kind of real being critical? You mean that?
- Jie: Yes.
- L: Alright, so I am not really critical, for now. Yes. (IV2)

Clearly there was a misinterpretation of the meaning of critical reading by Interviewee L. To her knowledge, critiquing others was simply presenting a list of pros and cons. Unfortunately, critical reading required her to take one step further: to justify her list of pros and cons. To some extent, she represents a large proportion of Chinese international students, who genuinely believe that one needs a certain level of qualification in order to be critical. In their view, it is absolutely beyond their imagination to discover the weaknesses in published papers: "In academic articles, all the authors have acknowledged their weaknesses in the writing. How can we find out more weaknesses?" (Interviewee H, IV2)

The effect of Chinese institutional impact is very powerful and long-lasting. Although the students were influenced by Western academic culture during their stay in a UK university, their previously deep-rooted conceptions of learning culture could not be easily altered. This helps explain why they perceived that they had become far more critical in their academic reading than they had in practice, with the self-identification of trait situation model construction strategies in the questionnaires manifesting significant changes over time, while their actual cognitive processing -- their use of state situation model construction strategies in the think-aloud -- did not.

7.4.2 Mediating Agents

Participants' accounts further reveal that institutional mediation was carried out by mediating agents, such as English teachers; language tutors at test preparation schools; and the students themselves. These mediating agents directly or indirectly shaped the students' knowledge of strategic reading, as well as their choice of reading strategies.

Since the participants in the focus groups (mainly at Time1) had different academic backgrounds in their undergraduate study in China, their previous learning experiences of English reading varied immensely. Participant C studied English as a major in China, the only one among the eight participants. She was a 'skilful' reader in that she was aware of the coordination between reading strategies and reading purposes. However, none of the strategies she mentioned in the following account, like skimming, scanning, paying attention to capital letters, and numerical data, were associated with situation model construction.

((tr.: we learned the methods which help to read quickly within a time limit, such as skimming and scanning. I have learned all these methods. And I found them very useful, especially when I took exams. In addition, these methods are very effective when I am searching through articles ... But you have to consider your specific situation (.), and your personal situation in using them. For instance, if I am preparing for exams now, I will use these methods, such as reading subtitles, being sensitive to numerical data, paying attention to the (.) capitalised words. These methods help answer the questions quickly. If I am going to analyse one article, I will definitely not use the same methods.)) (Participant W, FG1)

For the science students in China, their university English learning was very different from that of Participant C. In Participant D's university, "there weren't any classes focusing especially on reading" (FG1). For Participant Z and Participant Q, their account of their previous university English learning experience was extremely disappointing, if not a disaster for them:

((tr.: I often missed English classes, because the teacher was too boring. The teacher just had a book in his hand, and taught by the book. All the time! He didn't care about what responses the students made. He focused only on his book in the class. It was really a boring process.)) (Participant Z, FG1)

((tr.: As for Extensive Reading, it was really (.), basically we didn't know what he was talking about, since his spoken English was extremely unclear. Because he was transferred from physics teaching to English teaching, we had no idea what he was teaching. The result was that it was too vague; we just did not know what he was talking about in class. Consequently, we had to teach ourselves.)) (Participant Q, FG1)

It can be inferred from these accounts that such English teaching could hardly have helped students improve their language skills, let alone their strategic reading. For those who wanted to learn English, and also those who wanted to study abroad -- like Participant Z and Participant Q -- they started to teach themselves in their own ways. Participant Z practised English reading by going through English websites, while Participant Q read *China Daily* (an English language newspaper in China). The most frequently used strategy in Participant Q's reading was looking up every new word when she encountered it: "I had to look them up from a dictionary again and again, which was extremely time consuming. It was very frustrating too, and you just did not know the words". Such English reading, consciously or unconsciously, is shaped by the grammar-translation teaching method that their English teachers used in class. It is mainly characterised by bottom-up processing, that is, by word-by-word understanding. In their view, English reading meant trying to understand every word, every sentence, and finally the text. It was an accumulation of these linguistic units. The following experiential narrative from Participant W vividly described her text-bound reading:

((tr.: When we were writing a thesis, the supervisor gave us some English references. When we had finished half of one article, we just felt too frustrated to continue. One reason was that some sentence structures were very complicated, especially when two things were being compared. In this case, two things would be associated together, and the comparison would be made in a very complicated way. If the writer had talked about one thing at a time, you probably would have understood it. But because the structure was too complicated, he wanted to talk about the issue briefly, then we got lost. Bit by bit, you found you had more new words in the article. You had to spend more time looking up a dictionary. Then you would start from the beginning. Gradually, you could not focus on what you were reading and had to stop halfway. What's worse, when you came back the next day, you had completely forgotten what you had read previously, and you would skim it quickly. It was an extremely slow process.)) (FG1)

To explore how academic English (in the third and fourth year) was taught in China, I interviewed two ex-colleagues in China on the telephone. Both of them mentioned similar practices in their teaching.

((tr.: The objectives of academic English teaching are mainly about comprehension and academic vocabulary. Usually, we would choose several chapters from an English book, and then let them translate into Chinese. This is to make sure they have understood the article. After that, they have to do some comprehension exercises, like True/False tests.))
(L, Lecturer in China, IV)

The above excerpt indicates that academic English teaching in China still focuses on bottom-up processing, with no training given to students on those strategies which are essential in academic reading in the UK, such as integrating different information sources, evaluating the text, and critiquing the authors. In addition, the intensive practice of translation not only consolidates students' word-by-word reading, but also reduces the amount of English reading to a minimum. Such learned habits have such a strong impact on their future study that it takes a long time for them to change them, as with Case3 in Chapter Six. It was suggested there that the reversed development of Case3 in her academic reading largely arose from her stubbornness in continuing to use textbase strategies, simply because she had practised them in the past and was familiar with them.

Although there was little instruction on strategic reading in university English teaching, nearly all the international students had training on testing strategies in the exam-prep schools when they were preparing for IELTS / TOEFL before coming to the UK. The similar experiences of two participants -- Participant Q from mid-China, and Participant Y from Southern China -- again shows that "the exam has united Chinese learners in different geographic areas into one inter-connected test-preparing community" (Gao, 2006, p.62).

- Q: ... I am still using the same methods which I have learnt during IELTS preparation. Exactly the same methods.
- Jie: What are the methods? I never sat IELTS. Would you like to teach me?
- LL: laugh.
- Q: This is very complicated.
- Y: Try to locate the point in the text to which the question refers. Once you find it in the text, it means you've got it.
- Q: I did not follow that set of methods strictly. I also have my own methods. I refined them based on that one.
- Jie: You still find it very effective now?
- Q: Yes. Before I started to prepare for IELTS, I had no idea, no idea at all, none of my English teachers – intensive, extensive, or listening – ever taught us any effective methods. And after their classes, I did not know what they had taught us. No idea. By preparing for IELTS, I learnt a lot. That's why I still use the same methods. And I haven't added any new ones.

As Participant Y said, the testing strategies helped locate the text information. What a test-taker needed to do was find the question stem in the text. "You did not have to understand what the article was about at all" (Participant Y, FG1). Such answer-hunting processes during a test were essentially a 'spot-the-text' game: "IELTS does not test your reading comprehension, it tests your eyesight" (Participant F, FG1). The test-oriented strategy offers clues on why some participants felt that there was no need to fully understand the text before answering the questions, which supports the findings in Cheng and Gao (2002). Because these students did not learn anything about strategic reading in their university English class, these testing strategies naturally constituted their main reading strategies when they started their master's study in the UK.

Although some learners were capable of modifying these strategies, based on their personal situation -- like Participant Q -- the testing strategies would not be of much help in their academic reading in the UK. In order to help Chinese international students meet the new academic requirements, some lecturers in the Business School deliberately integrated critical thinking into their teaching objectives:

I can see this is largely influenced by the way we teach, actually. If you just deliver standard lectures, their ability to develop this critical reading skill will be very limited. But if you design the course in a way that you try to steer them towards the direction, they do improve. Compared with the very beginning, let's say week one or week two, towards the end you can see that the majority of them do understand what we mean by critical reading. And they

do give or provide their own thoughts, and demonstrate their own analyses of evidence (Lecturer W, IV).

Even so, great variations exist in Chinese students' attitudes towards such help: "Even though you have been told, you still doubted it" (Participant D, FG2). Professor P believed that this slow adaptation arose from cultural impact: "some of them are reluctant because of the culture, even to [countenance] it" (Interview). Given the same help and facilities provided to all the students, it was those who could take on board their lecturers' help positively and actively that made progress in their study, such as Case2. Those who were slow to accommodate were unlikely to gain much critical cognition in their academic reading. They would be like Case3, continuing to read in a bottom-up way, and ending up with textbase understanding.

The above analysis indicates that the impact on the learning process is bilateral. On the one side is the lecturers' scaffolding provided to all students. On the other side is the students' choice of whether to, and how to appropriate such help. This suggests the important role that Chinese students themselves played in their academic learning, in that they too were acting as powerful agents. Their reading strategies deployed in their coursework study were closely related to personal factors, such as their attitude to adjusting to a new learning environment, their awareness of new academic requirements, and their determination to practise these strategies in their coursework reading. The following narrative from Interviewee Y shows how an individual student reacted to a teacher's feedback on her assignments:

Critical thinking ((tr.: is very important indeed. I feel writing assignments here, the teachers really focus on your)) arguments, ((tr.: if you failed to)) argue ((tr.: this piece of article, then they would not let you pass. You have to write something about, for instance what you agree about, and what you don't agree about. That is to say, you have to)) argue ((tr.: about something. Only in this way, have you a chance to)) pass. ((tr.: I think, writing in this way can help you improve your way of thinking, rather than accepting others' ideas at face value.)) (Interviewee Y, IV2)

This participant's readiness to get involved in critical thinking resulted from her teachers' assignment feedback. Her personal willingness to accept such help paved the way for her successful academic performance. Again, this explains why academic success is never uniform, even though all the students are exposed to the same teaching facilities, and are provided with the same scaffolding.

7.4.3 Mediating Objects: Reading Tasks

Another factor relating to the students' reading development was the reading resources which were available to them. In China, English reading materials are not only limited, but also often out of date. The fact that Participant L even brought her middle school English textbook to the UK gives us some idea of how severe this situation is. Limited English reading materials were therefore a significant factor in inadequate English reading practice among the students. As Participant F admitted: "we did not read enough" (FG2). Under such circumstances, it seems legitimate that students in China wanted to make the most of reading texts by going through every word. Intertwined with the mediation of the grammar-translation method in English teaching, word-by-word reading became a shared perception as the most appropriate way to read, followed by sentence structure analysis. As a result, everything involved in reading centred on learning new words, and decoding the meaning of every word:

((tr.: ...we were reading carefully, that means reading the details, no matter whether a paragraph was useful or not. We just read everything. We tried to understand what the author was talking about. ... Probably a sentence wouldn't mean anything, but you still read it. And you wouldn't feel comfortable unless you had translated it into Chinese.))
(Participant D, FG2)

Allied to such conscientious commitment was the prevalent concept that reading was for remembering the content. As revealed in the following interaction between Participant F and Participant Z, reading slowly contributed to remembering the content:

- F: ... If we read it quickly, we would have no idea of what we had read. Therefore, we had to read it very very slowly (.).
- Z: I think sometimes it is the same even when we are reading Chinese. If you read very quickly, you would soon forget what you have read. (FG1)

The misconception that reading is for remembering the content might be manageable when the students are not required to integrate different information sources in their study, and when reading resources are scarce in China. Nevertheless, this did not work in their master's study, in that they were required to read to learn, and had a much greater amount of literature to confront. Out of habit, some of them (Participant D, for instance) kept delaying reading references because they thought they would forget in the exams what they had read. As a result, they had to give up their reading task in the end, owing to the huge amount of tasks that they had accumulated. This suggests, from another perspective, that the text-bound processing strategies developed in China became severely inadequate for academic reading in the UK. It not only made the reading tasks impossible, but also restricted the potential progress that Chinese international students could have achieved.

Given their limited exposure to English academic articles and their learned reading habits in China, it is not surprising that these students found academic reading difficult upon their arrival in the UK, especially when confronted with Western academic writing styles. In an attempt to overcome this difficulty, the students often used Chinese references as a coping strategy so that they could at least get a rough idea of the text meaning.

((tr.: You understand the sentential meanings, but you cannot comprehend the main ideas of the whole passage, or what the chapter is about. This is probably because of their writing. The westerners probably cannot focus on one point. They write loosely, all the time, in a roundabout way. People say that Chinese write in an indirect way. But at least we Chinese would focus on the main points in the end. As for English writing, we have no idea where the main points are. Sometimes, we have to read it two or three times. And still we have to turn back to Chinese references. Only in this way can we get a rough idea.)) (Participant Y, FG1).

Compared with English reading in China, the biggest difference was that reading tasks in the UK seemed to become insurmountable:

((tr.: The weekly reading list the teachers give us is so long, and usually we have an enormous amount to read. You can hardly imagine that we would read so much on our own in China, and in such a short time.)) (Participant Y, FG1).

Although Participant Y was a skilful reader in Chinese reading -- “I can do jump reading ... If the paragraph is irrelevant, I would skip it”, she could not apply these strategies to her English reading: “But I cannot do this when I read English”. Her laborious decoding at language level made her feel extremely frustrated in the UK: “Since my vocabulary is very limited, sometimes I find my mind is not focusing on my reading ... I feel it difficult to build up my confidence” (FG1). This suggests that her cognitive processing had been primarily occupied at the lower level of textbase understanding. She was handicapped both by her deficiency in the English language and by her limited choices of reading strategies. Due to the limited materials available in China, using background knowledge was ruled out in her reading, especially at the beginning of the academic year.

Meanwhile, because all the reading tasks in the UK were closely related to coursework essays, Chinese students were forced to read English articles, even though they did so in a passive and uncomfortable way. They learned to search the references, then approached their essays by reading ‘extensively’ in a way that they had never done before in China. As they read more in their coursework study, they gradually realised that “[in China] reading means ‘testing strategies’, [but] here you gain knowledge through reading” (Participant R, FG1). And a new set of strategies were required for their coursework tasks: “we not only ask questions for ourselves, look for articles, but also judge the answers on our own. If it is not right, we have to try again. That means we are also double checking our work” (Participant Y, FG1).

At the second focus group, they all felt they had made progress in their reading: “((tr.: I think everybody, whoever they are, is able to locate the key points easily. After all, English structure is rather obvious))” (Participant D, FG2). However, as we have seen, their emerging strategies were mainly about textbase understanding, such as using text structure, paying attention to the key points, and scanning. They had yet to achieve higher level processing. The effort to meet the demand in the UK HE context, in particular, the huge amount of reading tasks, gave rise to their unique choice of reading strategies, as well as to a different course of development in academic reading.

However, as international students, they were constantly faced with the temptation to read in L1 rather than in L2. Compared with their initially painstaking word-by-word English reading, reading Chinese was easy and quick for them. Upon their arrival, reading Chinese references was justified by the lack of relevant background knowledge among the participants who had come to the UK to study a new programme, like Participant Z and Participant C. They considered this approach to be a shortcut to catch up. Nevertheless, the more they read Chinese references, the more reluctant they would become to switch to English ones. At the second focus group, Participant Z admitted that his coursework reading had been largely limited to Chinese references: “I chose some Chinese references to read”, simply because it was impossible to finish the tasks required by the teachers. As for the other participants, if they had a choice, they would not choose to read English either. The following narrative tells how uncomfortable Participant D felt in reading English:

((tr.: actually now I still find it a bit uncomfortable reading English, unlike reading Chinese ... Because when I read an English article, I still need to read it again and again. Only in this way, I can, I am able to understand it properly, to know what it is talking about. Uh, probably it is because, how to put it, because we haven't read enough.)) (Participant D, FG2).

Given the demanding reading tasks in their coursework study, there emerged a unique learning phenomenon among Chinese international students, which helped them make impossible tasks possible, namely, the formation of study groups on their own initiative. Each group was made up of four or five students. They split their reading tasks, and exchanged, on a regular basis, their understanding of the materials they had read. This practice was extremely popular in the second semester. Meanwhile, there were also some students who simply gave up on the reading tasks, and stuck to their old strategies from China: memorising the notes or handouts in class. Inevitably such practice was perceived by their lecturers:

I don't think they all read everything. I think between them, they probably read everything. And I think they have to be working in groups. So they have a study group. They will make a study group, maybe four or five students. If there are ten items on the reading list, they will read two each, and they will discuss them, and share their notes and ideas. I don't think they all read everything. That's my impression. (Professor P, IV).

So what consequences did such reading groups have for their deployment of reading strategies? For one thing, dividing the big reading tasks into smaller ones is very likely to strengthen their perception of careful reading: understanding the text (meaning) properly by means of textbase strategies. The emergence of the spontaneous study groups suggests that these students encountered similar challenges in their coursework study. They were hampered by deficiencies in their English reading, such as vocabulary size, background knowledge, reading speed, as well as knowledge of strategic reading. Although they were making progress with their reading, they still felt more comfortable coping with smaller tasks.

To some extent, the reading groups reflect the impact of cultural collectivism on these students. Since they could not read all the materials, it seems that they sought the assurance of having a concerted agreement on what they were required to read. The main agenda of their regular meetings focused on how to get a rough idea of all the

materials which they had not read. Basically, what was related by their fellow members would be accepted unconditionally and unquestioningly, without any critical or evaluative judgement.

So, both from linguistic and cultural perspectives, the phenomenon of reading groups signifies a negative impact on their reading development. Instead of pushing themselves in coursework reading, most of them stayed in their 'comfort zone', by cutting out three-quarters of their reading load, so that they were able to stick to word-by-word reading in what they actually did read. Such a 'shrinking' practice in English reading inevitably resulted in limited progress, especially regarding the transition from employment of state textbase strategies to state situation model construction strategies.

Nevertheless, this does not mean that there was no evidence of engagement in critical reading among them. Some interviewees (IntervieweeA, IntervieweeD, and IntervieweeHZ) mentioned their critical reading in the second semester, because they had gained some background knowledge in the subject field. Their confidence was established by "extensive reading", which enabled them to compare and make their own judgement on the issues that they were reading about. In their view, the first semester was very difficult, because they were struggling both with English language and the domain knowledge. As indicated in the following interview excerpts, things began to make sense in the second semester:

((tr.: Since I have read some other articles about this issue, I have already had my own understanding of it. So when I read an article)) arguing ((tr.:about this issue, I would associate it with other sources. I would ask: is it true? is this right? I would have my own comments. Sometimes I would also accept what is said in the article when I feel it is right. This depends. But definitely I would question, rather than just read and accept.)) (Interviewee A, IV2)

((tr.: I think first of all you have to)) understand, understand, ((tr.: and try to read more. Only in this way do you stand a chance to be)) critical, ((tr.: otherwise it's absolutely out of the question. Because when you are reading an article, the first step, the main)) purpose ((tr.: is to)) understand, ((tr.: it is very difficult to be)) critical. (Interviewee D, IV2)

The key messages embedded in these two participants' accounts echo the concept in the processing framework constructed in Chapter Three: that is, processing at the level of situation model construction is based on solid textbase understanding. If the reader's cognitive processing is largely occupied with textbase understanding, it is likely that there will not have been much situation model construction. In addition, the above accounts also indicate the importance of background knowledge in critical reading. This background knowledge enabled students to compare what they were reading with other information sources, and to evaluate them. In their situation, the newly acquired background knowledge largely arose from the reading tasks in their coursework study. Consequently, those who had conscientiously read more had progressed more, and they were capable of achieving a "higher" level of processing, such as engaging in critical evaluation.

7.5 Summary

From an emic perspective, the above analysis suggests an intertwined relationship between Chinese students' deployment of reading strategies and their social milieu. When they were in China, their English reading was mainly confined to reading comprehension tests – "Because you only do reading in the tests" (Participant Y, FG1). As a result, their deployment of reading strategies was characterised by testing strategies. In the UK, on the other hand, their coursework reading required them not only to understand the text, but also to give their interpretation and evaluation of it. Changes in the mediating elements consequently gave rise to changes in their reading, with regard to choice of strategies. Consistent with Gao's findings (2006), participants in this study showed that their choices of reading strategies were largely subject to environmental impact, namely, institutional mediation, mediating agents, and reading tasks.

As international students, they arrived in the UK with their own background. Mediation generated in their previous learning environment did not vanish straightaway upon their arrival. Instead, it appeared to have been deep-rooted, and continued to affect them in their master's study. To some extent, their deployment of reading strategies in the UK was a by-product of their two distinctive learning experiences: education in China, and education in the UK. Although the influence from the UK HE setting was powerful and overwhelming, the impact of their previous education was always present, either to facilitate or restrain their accommodation to the new learning environment.

Meanwhile, Chinese students themselves were also powerful agents in this changing process. The significance of learning is closely related to their participation in the new community; therefore, it never affects different students to the same degree or in the same way (Lantolf and Pavlenko, 2001:146). The development of their academic reading largely depends on factors such as whether they have positive or negative responses to the new requirements, and whether they can appropriate the help offered in the new learning community to maximise their learning opportunities, as discussed in the previous chapter.

It is also noted that there are other factors which were affecting their academic reading: for instance, the fixed one-year length of master's study in the UK. Because of their short stay in the new learning environment, everything was new to them. These students could hardly rely on their previous learning experiences to help them here. For example, they did not know how important the reading list would be in their study. They wondered whether reading these articles would make any difference in the year-end exams. Since English academic reading was not easy for them, especially to those who had the misconception that reading was for remembering, some of them just took the attitude of ignoring their tasks, or waiting until exam time to cram in as much reading as possible. As a result of the reduced amount of reading practice, there was actually a slowing down in

the process of building up relevant background knowledge, such as academic vocabulary, and familiarising themselves with English syntactic structure, and domain knowledge (as disclosed in the questionnaires in Chapter 5). The above analysis suggests that having subject background knowledge turns out to be one of the key elements contributing to the transition from using textbase strategies to situation model construction strategies. With all these uncertainties, most of these students turned to easier alternatives, such as reading handouts or Chinese references, or forming reading groups to split up the reading tasks. It is not surprising that at Time2, Participant D said that if postgraduate study had lasted for two years, they would have gained a lot in the second year as a result of their first year experiences.

In all, qualitative analysis in this chapter has provided explanatory information to complement the quantitative findings, with regard to participants' development in trait and state strategies. Analysis from the students' perspective helps explain why there emerged an inconsistent development in these two different statuses of strategy use. It can be inferred that their trait strategy use was more subject to environmental mediation, and that the students' socialisation constituted the main determining factor in the strategies that they had available to them. On the other hand, it may take a longer time for the mediation to be reflected in their real cognitive processing: their employment of state strategies. After all, critical reading is not only related to socio-cultural mediation, but is also heavily reliant on competent textbase processing.

Chapter Eight: Conclusions and Discussion

This longitudinal study was designed to examine how a Western academic context influences Chinese international students' strategy use over time. One of the significant features of this study is that it combines both cognitive and socio-cultural perspectives into strategy research, and addresses the interrelationship between the learning environment and Chinese students' strategy use in their academic reading. In previous studies, students' strategy use is linked implicitly to their learning environment based only on qualitative analysis: for instance, the portfolio in Donato and McCormick's (1994) study; classroom observation in the study of Takeuchi et al. (2007); and discourse analysis in Gao's study (2006). In this present study, both qualitative and quantitative analyses were employed, which not only situated Chinese students' reading development into a specific socio-cultural context, but also explored the direct impact that the socio-cultural factors had on these students' deployment of reading strategies (examined by questionnaires and think-aloud).

In addition, this study explores two distinctive dimensions of their strategy use: trait strategies in a task-free situation, and state strategies in a task-provoked situation. The findings of these two types of strategy status offer us an in-depth understanding of the complex nature of academic reading. Furthermore, this study challenges the simple notion of cognitive and metacognitive processing, and investigates the multifaceted aspects of strategy use in terms of textbase, situation model construction, and comprehension monitoring. It is argued that changes in the use of these strategies over time are related to Chinese students' reading development, especially with regard to their use of situation model construction strategies. In this study, students' deployment of situation model construction strategies, in relation to the other strategies -- textbase strategies and comprehension monitoring strategies -- is considered to be an important sign of reading competence.

In Chapter Three, I constructed a processing framework for academic reading. The essence of this framework is that it emphasises the causality between environmental mediation and readers' decision-making during reading, especially in regard to whether critical reading is encouraged, or cognitive processing remains mainly at the textbase level. This framework was used as the theoretical basis in designing this triangulate study, which employed questionnaires, think-aloud, focus groups, and interviews for data collection. Based on quantitative data analysis and an in-depth investigation from qualitative analysis, I can now answer my central research questions (RQs) in this chapter, namely:

1. How does Chinese international students' academic reading develop over time in terms of their deployment of reading strategies in one-year master's study?
 - a. How do their trait strategies develop in the course of one-year master's study?
 - b. How do their state strategies develop in the course of one-year master's study?
2. What socio-cultural factors will be involved in their choice of reading strategies?
How are these factors related to their strategy use?

In addition, the issue of whether self-regulation should replace traditional measurements of learning strategies will be addressed, in accordance with the findings in this study. Since this new template proposed by Tseng et al. (2006) is related to Dörnyei's (2005) argument about the distinction between *learning* and *learning strategy use*, it is argued that findings in this study, in particular, Chinese students' deployment of trait and state strategies, may shed light on this argument. At the end of this chapter, I will comment on the limitations of this study, as well as to its implications, such as the need to provide the interventions that Chinese international students need most, and how English teaching and learning in China could be developed in a way that is able to help these students transfer from 'learning to read' to 'reading to learn'.

8.1 Answers to RQ1: How does Chinese international students' academic reading develop over time in terms of their deployment of reading strategies in one-year master's study?

As far as RQ1 is concerned, this study explores Chinese students' strategic reading in two different situations: their deployment of trait strategies in a task free situation (RQ1a) and their state strategy use in a task-provoked situation (RQ1b). The seemingly inconsistent results from these two sets of data analysis – questionnaires and think-aloud -- indicate the multifaceted nature of academic reading. Findings of Chinese students' trait and state strategy use reflect two distinctive dimensions of their cognitive processing.

The significant development of trait situation model construction strategies provokes our awareness of an interesting reading situation. Without significant changes in textbase strategies, this result is in contradiction to the cognitive mechanism proposed in the processing framework for academic reading, in which readers' textbase processing is considered to be the primary condition of their employment of situation model construction strategies. When readers' cognitive resources are mostly occupied at the lower levels of textbase processing, such as word meaning guessing, syntactic parsing, and meaning construction, it is unlikely that they are able to engage in more higher level processing at the same time. This is because human working memory cannot cope with so much input information simultaneously owing to its limited capacity. To expect significant changes in the use of situation model construction strategies, readers have to achieve fluency at language processing. Only in this way can their cognitive resources be freed at textbase level, and be directed to situation model construction.

One possible explanation for the imbalanced development between trait textbase strategies and trait situation model construction strategies is that such cognitive

variations might arise from the underpinned construct of trait strategy. In so far as Chinese students' trait strategy use reflects their habitual cognitive processing in a task free situation, their employment of trait strategies is more 'detached' from the elements which are involved in real cognition in on-line decision-making. That is to say, without the 'real' participation of their English language processing proficiency, their knowledge of strategic reading, and the specific reading purposes, their trait strategy use provides us with information only about their cognitive processing in a task-free situation.

Another possible explanation is that the significant development of trait situation model construction strategies may be triggered by the striking contrast between the two learning contexts: China and the UK. As a by-product of their education experience in China, Chinese students' knowledge of strategic reading is mainly confined to textbase processing upon their arrival in the UK, namely, the employment of textbase strategies. During their study in the UK, the new academic requirements make them realise that understanding and learning new knowledge is only part of what they are expected to do. More importantly, they are required to be critical in their academic reading. Because of the differences in the two education systems between China and the UK, in particular, academic requirements with regard to critical reading in their coursework study, these students would arguably have put more effort into meeting the new requirements in their study. As a result, any cognitive effort made in this regard may be perceived as a great achievement, given the fact that they hardly had any training before coming to the UK. Consequently, their perception which underpins the construct of trait strategy leads to a unique change over time, in which the development of trait situation model construction strategies turns out not to be restrained by trait textbase strategies.

Furthermore, the significant development of the three individual strategies (two trait situation model construction strategies: "integrating information with other sources", "making inferences", and one trait textbase strategy: "skimming") offers us a

complementary view of Chinese students' trait strategy use. Since "skimming" was the only textbase strategy that displayed significant change between Time1 and Time2, this implies that these students' general language processing ability changed little in their academic reading.

If Chinese students' reading had followed Stanovich's (1980) compensatory interactive model, their deficiencies at language processing would have been compensated by their higher level processing (such as background knowledge). Unfortunately, these students happened to have little background knowledge to facilitate their language weaknesses, owing to their limited English reading practice in China. And this situation became much worse when it came to academic reading, especially for those who started a new programme in their master's study. The shared misconception that English reading means word-by-word understanding suggests that there had been little chance for them to practise skimming in their previous English learning. Given their textbase-dominated reading processing, it is unlikely that, upon their arrival, these students would show much engagement in higher level processing (such as "integrating different information sources", and "making inferences").

However, the new academic requirements and the reading tasks in UK universities gradually affected their way of reading, leading to significant change in their employment of "skimming". In addition, reading around their subject consequently led to the significant deployment of "integrating information with other sources" and "making inferences". Unfortunately, because of their 'shrinking' reading practice (split reading tasks and Chinese language reference reading), their perceived reading difficulties in Figure 5.2 suggest that they failed to make rapid progress with their English language processing, and also failed to build up the necessary subject background knowledge.

With their cognitive effort preoccupied with language processing and with their being incapable of compensating for such deficiencies from their background knowledge, these students could display only a low level of interaction between textbase processing and situation model construction, in particular, between “skimming” and “integrating information with other sources” and “making inferences”, rather than between “using the main ideas” and “critiquing the authors” and “evaluating the text”, as used by the advanced readers in Feng and Mokhtari’s (1998) study.

This textbase-oriented processing shows that, as with the participants in Zhang’s (2010) and Phakiti’s (2008) studies, Chinese students in this study were also at a developmental stage in terms of their English proficiency and their knowledge of strategic reading. Their perceived reading difficulties strongly indicate a delayed development in their language processing ability. If these language problems had been solved before their master’s study, it is very likely that they would have demonstrated a higher level of interaction with regard to the transition from textbase strategies to situation model construction strategies.

On the other hand, the non-significant changes in Chinese students’ state strategy use over time, together with the non-significant changes in state textbase strategies, state situation model construction strategies, and state comprehension monitoring strategies, appear to fully support the concepts embedded in the processing framework for academic reading proposed in Chapter Three. On both occasions, the high proportion of state textbase strategies (TBS1 32.8%, TBS2 33.5%) indicates their cognitive engagement in textbase processing. This task-provoked deployment of textbase strategies appears to match their perceived reading difficulties, especially the all year round English language problems: too many unknown words and complex sentence structures (see Figure 5.2). The fact that 33% of their cognitive effort was allocated to language processing both at Time1 and Time2 shows that these students were faced

with long lasting problems in understanding text meaning. This explains why their state strategies failed to demonstrate significant changes over time, and why there was not a transition in their state strategy use from textbase strategies to situation model construction strategies.

Meanwhile, protocol analysis provides us with insight into their dynamic and transitory state strategy use. Case studies show how the development of these state strategies also interplayed with personal factors, such as willingness to try new strategies, determination to succeed, and a positive attitude toward the new academic requirements. Although the three students in the case studies displayed their own individualised developing courses in their academic reading, the longitudinal changes in their state strategy use, in particular, the inter-relationship between state textbase strategies, state situation model construction strategies, and state comprehension monitoring strategies, again support the inter-dependence of textbase processing and situation model construction. Apart from this, the case studies also enable us to engage in an in-depth exploration of their on-line decision-making, especially with regard to when, what, and how their state strategies were used. The changes in reading in Case2 and Case3 (though in a reverse way) show the importance of textbase processing in their deployment of situation model construction strategies. In contrast, Case1 displayed trait-like situation model construction strategies – mainly “making inferences” -- at Time2, which was mostly triggered by language difficulties. Since her employment of situation model construction strategies was often disconnected with text meaning understanding, her situation model construction strategies were fundamentally different from those of Case2 and Case3. The cognitive variation displayed in Case1 gives us new insights that challenge quantitative analysis of only counting the frequency of students’ strategy use, and also challenge the notion that employment of situation model construction strategies is associated with higher level processing. The contextualisation of state strategy use, to

a great extent, complements quantitative results, which otherwise might have hidden the differences in students' strategy use.

Furthermore, the textbase-oriented syntactic parsing also offers insights into the levels of cognitive processing and the repertoire of state strategies. The shared processing pattern -- "generating questions while reading", "checking comprehension", and "making inferences" -- suggests the same processing difficulties that all participants encountered in their reading. Usually, their deployment of "generating questions while reading" signalled their uncertainties about linguistic meanings. This was often intertwined with another cognitive attempt: "checking comprehension" to make the most of their disrupted information input. For some students (e.g. Case1), this strategy combination also interspersed with "making inferences", which mainly focused on meaning guessing to compensate for English language deficiency.

Although a few stronger readers managed to engage in critical evaluation, their repertoire of strategies, such as "generating questions while reading", "using grammatical knowledge", "connecting one part with another", "taking steps to repair faulty comprehension", "checking comprehension", suggests that their cognitive effort still largely remained at textbase level. For this group of students, English language deficiencies, in particular, syntactic parsing, constituted the key factor that demanded cognitive attention which otherwise could be directed to situation model construction. As for the weaker readers, given their limited choices of reading strategies (which are mainly limited to the three shared strategies), they seemed to be hampered both by their inadequate knowledge of strategic reading and by their English language deficiencies.

All these findings point to the imbalanced relationship between state textbase strategies and state situation model construction strategies in Chinese students' academic reading. Their over-reliance on state textbase strategies indicates that their English language

processing was still competing for cognitive attention with higher level processing. Even though they were fully aware that they should be engaging in critical evaluation in their reading -- demonstrated by their significant development of trait situation model construction strategies -- the impediment caused by language processing simply prevented a corresponding development in their state situation model construction strategies.

In this study, Chinese students' state strategy use is very different from that of Feng and Mokhtari's (1998) participants, who displayed both automatic processing and frequent deployment of situation model construction strategies. As suggested by the literature review, Chinese readers' deployment of strategies is closely related to the time length of their stay in English speaking countries, as well as to the extent of their exposure to Western culture. Since master's study in the UK only lasts one year, it is more likely that students in this study show signs of development towards but not attaining the cognitive processing demonstrated by Feng and Mokhtari's (1998) participants, such as significant development of trait strategies, trait situation model construction strategies, and the three individual trait strategies.

However, findings in this study turn out to be contradictory to Li and Munby's (1996) results, mainly regarding the participants' deployment of situation model construction strategies. Li and Munby's (1996) findings show that "using background knowledge" constitutes the only situation model construction strategy used by the two participants, while Chinese students in this present study displayed significant development of their trait situation model construction strategies, as well as engagement in critical reading in state strategy use, such as "evaluating the text", and "critiquing the authors". This is interesting because, for one thing, the two participants in Li and Munby's (1996) study are arguably stronger readers than those in this present study, given their high TOEFL scores. For another, the two participants were in their second year of master's study

when the data were collected, which indicates a longer exposure both to the English language and to Western academic requirements. These two elements – competent English language proficiency and longer mediation of the new learning environment -- suggest that their strategy use should have demonstrated more similarities to that of Feng and Mokhtari's (1998) participants.

One possible explanation for the discrepancies might be the differences in the underlying reading constructs. In this study trait and state strategies are distinguished and examined in two reading situations, while findings in Li and Munby's (1996) study present an overall reading situation which actually encompasses both participants' trait strategy use (generated by journal writing and interviews) and state strategy deployment (by think-aloud). Their generalisation of two different types of strategy status may have led to fuzziness, resonating with Dörnyei's (2005:164) argument about mixing up the processes of *learning* and *learning strategy use*. As the findings in this present study show, the imbalanced development of Chinese students' trait and state strategies mainly arises from the conceptual differences between them. That is to say, students would demonstrate different types of cognitive processing for different tasks in different situations.

Another explanation might be the difference in the number of participants and research methods. In this study, mixed methods were used which included both qualitative and quantitative methods, and there were three groups of participants taking part in questionnaires (70 students), think-aloud and interviews (15 students), and focus groups (8 at Time1, 4 at Time2) twice respectively. In contrast, Li and Munby's (1996) qualitative study mainly focuses on two participants. Therefore, their findings mainly relate to these two 'A' students' strategic reading, while the findings in this study are more generalizable, given the fact that more participants are involved, and different cognitive dimensions are examined.

Meanwhile, it is also noted that there are similarities between the postgraduate students' textbase-oriented state strategy use in this study and the undergraduates' textbase-dominated trait strategy use in Poole's (2005) and Zhang's (2010) studies. Although Poole (2005) and Zhang (2010) do not distinguish trait from state strategies, the instruments used in their data collection (questionnaires and interviews) indicate that their focuses are on participants' trait strategy use. In the present study, the master's students' over-reliance on state textbase strategies suggests that they were still reading in a similar way to how they used to read in China. Nevertheless, the higher level processing demonstrated in their state strategies – such as, “evaluating the text”, and “critiquing the authors” – distinguishes them from the undergraduates, in that such critical cognition occurred only in their academic reading in the UK.

Changes in their state strategy use (especially the emerging critical reading), though not statistically significant in magnitude within the six month period of this study, suggest the adjustment that Chinese students make to their academic reading in the UK. Since English reading in China is characterised by the features of ‘learning to read’, their reading focuses primarily on meaning understanding and English language learning, largely relating to learning new words, analysing sentence structures, and translating sentences into Chinese. In contrast, in the UK, master's study implies a new stage of ‘reading to learn’. Their coursework reading requires them to engage in personal interpretation (or situation model construction) based on their understanding of the text. Unlike trait strategy use, their state strategy use has to integrate with other elements, such as their English language proficiency, their repertoire of reading strategies, and reading purposes. To a great extent, it is their deficiencies in language processing that have restricted the development of their state strategy use.

Nevertheless, the imbalanced development of Chinese students' trait and state strategy use seems to be unaligned with the concepts of trait and state, in that the habitual and stabilised trait strategies display significant changes, while the dynamic and transitory state strategies remain unchanged over time. This implies that these students' perception of how they read appears to allow them to adapt more quickly to the new academic requirements than does their use of state strategies. As with Phakiti's (2008) findings, this is probably because these students were still at a developmental stage in terms of their knowledge of English, their knowledge of strategic reading, and their academic expertise. Although master's study signifies a new stage of 'reading to learn', they were, at the same time, also having to do catch-up in 'learning to read', with more effort on understanding the text meaning. Consequently, their academic reading encompassed both 'learning to read' and 'reading to learn'. It is such circumstances that lead to the unique development patterns between their trait and state strategies. The significant development of trait strategies, especially trait situation model construction strategies, may arise largely from the students' desire to meet the requirements of 'reading to learn'. Unfortunately, being inhibited by 'learning to read', their deployment of state strategies failed to change significantly at Time2.

8.2 Answer to RQ2: What socio-cultural factors will be involved in their choice of reading strategies? And how are these factors related to their strategy use?

As far as RQ2 is concerned, three types of mediating elements -- institutional mediation, mediating agents, and mediating objects -- intertwine to determine Chinese students' choice of strategies in their academic reading. The impact of these mediating elements is manifested in terms of what types of strategies they use and how frequently they use them. According to the processing framework for academic reading established in Chapter Three, although socio-cultural factors interact directly with situation model construction, their impact on reading is mainly related to the levels of processing, in

particular, whether readers' cognitive processing remains at textbase level to take the face values of a text, or readers show engagement in personal evaluation during reading. In this study, the impact of the socio-cultural factors is more complex and hybrid in that Chinese international students are in a position where they not only have to face and adapt to the new environmental mediation in the UK, they also have to constantly negotiate with their deeply ingrained home culture. This accommodating and collaborating process is consequently reflected in their adjustment of cognitive processing in academic reading.

Although these students are studying in the UK, what they have brought with them from China seems to have a long-lasting effect on their choice of strategies. The impact of these mediating elements is primarily demonstrated as textbase processing throughout their previous school education, with little emphasis being placed on situation model construction. Even so, findings on their trait and state strategy use in the UK strongly suggest that their deficiencies at text level processing have largely contributed to the slow transition from their deployment of textbase strategies to situation model construction strategies. The mismatch between the environmental mediation and students' cognitive development has put these students at a disadvantage both in terms of text meaning understanding and critical evaluation upon their arrival in the UK.

From the perspective of institutional mediation, it can be seen that the test-dominated education system in China has largely restricted the repertoire of the students' reading strategies. The powerful washback effect determines that what these students learn and frequently practise in class is mainly testing-oriented strategies. Furthermore, the low requirements in the test constructs tend to deliver an unrealistic message to both test-takers and English teachers pertinent to English reading, as is the case with reading comprehension in CET Band 4, for example. As one of the high stakes tests at tertiary level in China, its reading construct requires a reading speed of 70 wpm, which is only

about half the speed of Carver's (1984, 1992, 1997) slowest (first) gear: reading to memorise (130 wpm). According to Raouf's theory, the fifth gear (the fastest reading speed) is when readers engage in scanning (600 wpm). The slow reading speed might be appropriate for the teacher's grammar-translation method, but it leads to limited strategies in students' reading, which relies heavily on "looking up into a dictionary", "translating into Chinese", and "using grammatical knowledge". The fact that the readability index of Band 4 reading passages (with an average Flesch readability index of 57.7) is easier than what is required of year-six pupils in school in English speaking countries indicates the huge gap between Chinese students' knowledge of English reading and what they are expected to achieve in their master's study.

In addition, limited English reading materials in China also contribute to students' delayed development of language processing ability. Although their English reading is characterised by bottom-up processing, inadequate English reading practice relating to limited resources results in a situation where some strategies are hardly practised in their undergraduate study, such as "using rhetorical structure", "skimming" (which shows significant development over time), "scanning", "focusing on the important parts", and so on. Eventually, these students started to experience a series of reading difficulties in their master's study, such as too many unknown words, complex sentence structures, unfamiliarity with academic rhetorical structures, lack of background knowledge, etc. (see Figure 5.2). Syntactic parsing analysis shows that at Time2, the weaker readers' choice of strategies was largely confined to three strategies: "generating questions while reading", "checking comprehension", and "making inferences". From a historical and developmental view, these students' limited choice of reading strategies can be directly traced back to their limited reading practice in China.

In a similar vein, the impact of the mediation in a UK HE setting is shown in Chinese students' cognitive processing. The significant development of their trait strategies – in

particular their trait situation model construction strategies – suggests that they were fully aware of the need to accommodate the new mediation into their academic reading. But, on the other hand, their state strategies seem to have been less affected, and are more subject to influences from their previous learning environment. Owing to the inappropriate mediation they had in China, the fact that their state strategies fail to show significant development in the UK does not mean that their state strategy use is immune to the new environmental impact. It might be the case that their state strategy use, especially their deployment of state textbase strategies, needs a longer period of mediation to show significant development. Only when they have achieved significant progress with their state textbase strategies is there a chance that a corresponding development will occur in their use of state situation model construction strategies. Because of the conceptual differences between trait and state, these two cognitive entities consequently display different collaboration with the environmental mediation.

In all, this study has established the essential role that socio-cultural factors play in Chinese international students' academic reading. The complex reading context that these postgraduate students are situated in resembles Atkinson's (2002) rainforest metaphor (see 3.1.1). Cognitively, findings in this study suggest an imbalanced development between these students' trait and state strategy use. But only when these results are combined with the mediating elements that these students are exposed to can we get a deeper and more comprehensive understanding of why different development occurs in their strategic reading. It is these intricate factors that help us appreciate the 'wholeness' of their reading development.

8.3 Self-regulation or Traditional Strategy Constructs

The template for self-regulation proposed by Tseng et al. (2006) targets mainly "the learner trait of self-regulatory capacity rather than survey specific behavioural habits" (p.84). Although this 'new' construct was originally designed to assess learners'

vocabulary strategies in terms of commitment control, metacognitive control, satiation control, emotion control, and environmental control, Tseng et al. (2006) claim that this template can be also applied to other learning domains. In their view, testing learners' self-regulatory capacity offers a solution to avoid the conceptual fuzziness in strategy research, in particular, the over-generalisation of two learning processes: *learning* and *learning strategy use* (Dörnyei, 2005:164).

Nevertheless, the concept of self-regulation, although based in educational psychology, is considered to be interchangeable with that of metacognition (Dörnyei, 2005:192). In this study, both trait and state strategies focus on Chinese students' *cognitive* processing, therefore, as suggested by Phakiti's (2008) findings, it was expected that high correlations would occur between cognitive and metacognitive (or self-regulation) strategies. The fact that significant correlations were obtained both concurrently and longitudinally between them supports the assumption that these two entities were both investigating Chinese students' academic reading, but in two different dimensions: trait cognitive strategies and trait metacognitive strategies.

If readers' cognitive processing had been examined in this study only by means of self-regulatory learning strategies, as Tseng et al. (2006) argue, the findings would have been only about Chinese students' management of emotion, learning environment, metacognition, and so on. There is no doubt that these self-regulatory strategies are closely intertwined with their deployment of reading strategies, for instance, when they find it difficult to concentrate during reading, their processing will arguably struggle with text meaning understanding. Zhang's (2010) findings suggest that Chinese undergraduates' metacognitive knowledge of English reading is directly linked to their reading proficiency. Even so, these self-regulatory learning strategies provide us with little knowledge about their cognitive processing during reading, let alone about their levels of processing, the orchestration of their reading strategies, or the dynamics of their

state strategy use. If strategy research were to change direction to focus on self-regulation, the context of readers' cognitive processing would be discarded and unexplored. Furthermore, without the knowledge of readers' English language proficiency, their knowledge of strategic reading, and of their reading purposes, it is unlikely that these international students would benefit more in their academic reading if help was provided only by focusing on self-regulatory learning strategies.

It is noted that this new template on self-regulation arises from the debate about the incapability of distinguishing between the processes of *learning* and *learning strategy use* (Dörnyei, 2005:164) in strategy research. The issue that Dörnyei (2005) raises here is that these two different types of strategy status have been muddled. It can be inferred, within the context of strategic learning, that Dörnyei's (2005) idea of *learning* is similar to the trait concept which is about the stabilised and routine-based learning process, while *learning strategy use* might be associated with the specific situation in which state strategies are used. Unfortunately, Tseng et al. (2006) use the concept of trait in their template construct, but they fail to take one step further to apply the concept of state. Otherwise, the fuzziness between these two distinctive cognitive entities could have been resolved.

As the findings in this study suggest, Chinese students' deployment of trait and state strategies represents two different dimensions of their strategic reading. Since their trait strategies are about their perception of everyday coursework reading, these strategies, although habitual and stabilised, seem to be more adaptable to the new learning environment. As for their state strategy use, it requires the involvement of their English language proficiency, their knowledge of strategic reading, as well as their attitudes toward their postgraduate study. Having so many factors called into play in their decision-making, their state strategy use is considerably restricted by these elements; hence its development is not as obvious as that of trait strategies in a one-year's study.

What once happened to anxiety study – with its conceptual fuzziness and ambiguities -- is very similar to Dörnyei's (2005) argument about *learning* and *learning strategy use*, because, in both cases, two different variables are/were used to describe one general situation. If the concepts of trait and state have solved the fuzziness and ambiguities in anxiety research, hopefully, the findings in this study have shed light on the differences between the concepts of *learning* and *learning strategy use*. The imbalanced development of Chinese international students' trait and state strategies strongly suggests that there are two distinctive dimensions of their cognition in academic reading. Understanding these dimensions enables us to fully appreciate the complexity and dynamics involved in academic reading. As Phakiti (2008) contends, distinguishing readers' two different cognitive dimensions -- trait and state – signifies a way forward in strategy research.

8.4 Some Limitations of this Study

There are several inherent limitations which have arisen from the research agenda: examining the development of Chinese international students' trait and state strategy use. The first limitation relates to interpreting the relationship between trait and state in an academic reading context. As we know, the concepts of trait and state originate in anxiety study, but in the context of academic reading, are these two types of strategies sufficient (enough) to be set alongside each other to represent two separate aspects of readers' strategic reading? What does it really signify when readers say what they normally do during reading? Is there an underlying 'real truth' that strategies may or may not be adequately tapping through the use of these concepts? If so, how else could it be tapped more reliably, if at all?

Another inherent limitation arises in data collection. Since data were collected twice (at Time1 and Time2) in order to examine the changes in Chinese students' strategy use,

Time1 data collection might have resulted in more self-awareness among the participants in their academic reading, so that this in itself could have influenced data collection at Time2. If so, how could this problem be solved in future research, especially in longitudinal studies where data need to be collected more than once? In addition, the fact that both my participants and I are Chinese may have affected the collected data, namely, is it possible that the participants might, consciously or unconsciously, emphasise their identity and origins by playing up the impact of Confucianism when I collected data? What would have happened if the data had been collected by a UK English native lecturer with no Chinese background?

In common with Poole's findings (2005), "translating into L1" is one of the most frequently used trait strategies at Time1 in this study. Since questionnaire analysis could not provide us with information about the context of this trait strategy use, it would be significant to examine when and how Chinese students used this strategy in their on-line reading. For instance, did Chinese students use it to facilitate their text meaning understanding when they encountered language processing problems, such as unknown words or complex sentence structures? Or did they translate only some important parts for better understanding, or even for memorisation? At Time2, these students used less translation in their coursework reading. Did this arise from the fact that they had become more tolerant towards unknown words at Time2, as the findings show that language processing problems were always their reading difficulties? Or was it because they realised that they could not afford the time to translate the passages, owing to their mounting reading tasks?

Unfortunately, the method in which protocol analysis was used in this study does not offer us answers to these questions. In order to capture the wholeness of their cognitive processing, all participants were allowed to choose a mixture of English and Chinese in their verbalisation so that they would feel more comfortable to articulate their thoughts

during reading. But this led to a dilemma, in that it became impossible to distinguish the occasions when utterances in Chinese were triggered by difficulties with English from the ones where translation was used for deeper understanding. Because of the limitations generated by the data collection instrument, all these questions had to remain unanswered. Had this not been the case, more insightful knowledge of their reading development would have been obtained. In future research, a different method would be needed to investigate readers' code-switching between L1 and L2, so that more knowledge can be gained about when, how, and why L2 readers turn to L1 during their academic reading.

In addition, the small samples in this study might limit its general application. Although there were 8 participants in the first focus group; 70 participants filling in questionnaires both at Time1 and Time2; and 15 participants taking part in think-aloud on both occasions, these are comparatively small samples, especially so in the second focus group where there were only four participants, and in the protocol analysis where there were just four participants to represent the unsuccessful students. However, with the participants having being chosen randomly, all coming from a recognized learner cohort replicated in many parts of the Western world, and with the combination of qualitative and quantitative analyses, it can be argued that reasonable steps were taken to obtain reliable and generalisable results. However, future research would need more participants in order to achieve greater generalizability.

Furthermore, counting the frequency of strategy use may have limited the robustness of the findings. Yamamori et al. (2003) argue that the idea -- the more the better -- is simply not applicable to strategy research, because high frequency of strategy use does not necessarily have a link with successful learning; more important are the contextual clues that trigger decision-making (p.384). That is to say, more focus should be placed on what, when, and how these strategies are used. In this study, although frequency counting was

used in data analysis, the issue of “the more the better” is largely mitigated by the categorisations of textbase strategies, situation model construction strategies, and comprehension monitoring strategies because such categorisations enable me to examine the multidimensionality of Chinese students’ cognitive processing. Frequency counting relating to the above three sub-entities provides us with important information about participants’ cognition distribution during reading, especially regarding their levels of processing: whether their cognition largely remains at textbase processing, or shows more interaction between textbase processing and situation model construction. In addition, such categorisations help locate Chinese international students’ processing difficulties as they emerge in their academic reading. For instance, it is concluded that language processing deficiency becomes the main factor that leads to low levels of development in their state strategies. This conclusion is mainly based on the fact that about 33% of their strategies related to textbase processing both at Time1 and Time2.

The weaknesses of frequency counting are further mitigated by qualitative analysis which explores the dynamics and fluidity of state strategy use. For example, case studies enable us to know the details of participants’ decision-making, especially relating to the context in which the strategies are used. On the other hand, analysis of syntactic parsing reveals the different combinations of strategies between the weaker and the stronger readers. Protocol analysis, together with the numerical results, presents us with a multifaceted developing pattern of Chinese students’ academic reading, rather than simply counting frequencies of individual strategies.

Another limitation is the potential subjectivity of coding in this study. Because all the data were segmented and coded by me, although the issue of inter-raters’ bias is avoided, there is always a potential weakness of the own subjective decision in coding. What I did was make sure that a consistent decision on the size of segments was made throughout coding (Chi, 1997).

Apart from this, the short period of time between Time1 and Time2 -- six months -- might be a weakness in this study. As a longitudinal study, this period may be not long enough to capture the changes in Chinese students' strategic reading. This is suggested by the findings in this study. Although students' trait strategies show significant development at Time2, answers to RQ2 indicate that their state strategy use may require a longer period of mediation in order to trigger off significant changes in their master's study. Given that master's study in the UK usually lasts for no more than one year, it might be more insightful for future research to follow doctoral students. Data collected over a longer period of time would provide us with more information relating to the stages of reading development, in particular, when students will start to engage in critical evaluation in their academic reading.

In addition, future research may also focus on issues which this study failed to address, such as Chinese students' frequent mispronunciation during think-aloud, which may offer us more clues about their deployment of textbase strategies in reading; the interaction between Chinese (L1) and English (L2) in academic reading. It is revealed in this study that Chinese students were slow to transfer their L1 reading strategies to their L2 academic reading. As one participant said, she could do jump-reading (scanning) in Chinese, but she had to go through every word in English reading. This reading phenomenon might stem from the differences between Chinese and English, and it might also be related to different language proficiencies between their L1 and L2. As findings in this study suggest, their low English proficiency preoccupied much of their attention during English reading. In either case, it will be of significance if more knowledge is gained in future studies.

8.5 Implications and Conclusions

The findings of this study have significant implications for the provision of English intervention in Western universities. For this expanding group of Chinese international

students, English help offered in pre-sessional classes (June to September) and in-sessional classes (during the academic year) could be made more beneficial if teaching objectives were designed to meet these students' special needs in their academic reading, as highlighted in this study. The limited development of trait textbase strategies and state textbase strategies suggests that special attention should be given to the aspect of textbase processing, especially with regard to the reading difficulties revealed in Figure 5.2.

In order to speed up their delayed reading development and help them transfer from 'learning to read' to 'reading to learn' in an academic context, compulsory academic reading in pre-sessional classes becomes essential. This is because academic reading at this stage helps shift some of the initial frustration that participants reported in this study to the pre-sessional English class, such as unfamiliarity with academic rhetorical structures, too much unknown academic vocabulary, slow reading speed, etc. This is extremely important because the earlier such problems are resolved, the greater chance they will have to engage in critical reading in the later stages of their study. In addition, reading around also helps them pick up academic vocabulary, and build up some subject background knowledge. As the findings in this study suggest, these elements could make a big difference in their subsequent reading development in terms of deploying situation model construction strategies. Only after these students have done some catch-up 'learning to read' is instruction in critical reading likely to bring about a positive effect on their academic reading.

However, the case studies also reveal that fear of taking risks in their one year study (Case3) prevents some students from applying new reading strategies to their coursework reading. This means that intervention requires a well designed and systematic teaching plan, which should follow the sequences of reading development. According to the processing framework proposed in Chapter Three, more emphasis

should be placed on practising textbase strategies when students start to read around. Gradually the focus moves to situation model construction as their processing ability improves. During this whole process, strategy instruction should be integrated with modelling, repeated practice, and self-evaluation, until students build up the habit of engaging in such cognitive processing in their coursework study.

In addition, the findings in this study offer implications for English teaching and learning in China. It seems imperative that English syllabus design should be made to balance grammatical knowledge and English language input during students' school education, in particular, English reading practice in and after English classes with a greater range of materials. According to Grabe and Stoller (2002:21), it takes thousands of hours of practice in reading to achieve rapid and automatic processing. If this total amount of English reading practice were allocated systematically throughout students' English learning at school, students like the ones studied here would be far more competent with their bottom-up processing strategies, and would perform far better during their study in the UK. In addition, their frustrations in academic reading would be greatly reduced if they had had access to English academic writings in China.

As Ryan et al. (2009) point out, syllabus and curriculum reform in China needs a corresponding evaluation system. In order to achieve the above reading practice, it would be necessary for new testing constructs to be designed at different stages of English learning. For instance, at the early stages of English learning, in primary school and middle school, greater emphasis should be laid on textbase processing, especially with regard to lexical and syntactic knowledge, text meaning understanding, and reading speed. In university, the test construct should focus on the transition from 'learning to read' to 'reading to learn'. That is to say, while continuing to highlight the importance of language processing, some higher level processing should also be required in the test. In addition, reading materials with an appropriate readability index should be introduced

at this stage: only when the testing passages are close to the levels expected of their English speaking counterparts will the washback effect help English teachers and students readjust their teaching and learning. This will help change the concept of learning English as a subject to using English as a tool in academic study.

In short, the findings in this study could not only help the UK HE sector gain a true picture of how Chinese international students progress in their academic reading during their master's study, but also provide insights into the interventions these students need in the UK. If the right scaffolding could be offered systematically throughout their master's study, it is more likely that they would benefit more, which, for some students, could be a difference between success and failure in their master's study. Above all, by exploring Chinese international students' academic reading, this study also addresses the link between problem recognition and solution finding in the UK HE context:

At most – and it is a considerable ‘most’ – what applied linguists can do ... is to attempt joint problematisation and suggest complementary analytical frameworks that, through process of mediation, may achieve some utility ... in the end, it is for the practitioners ... to acknowledge and decide what matters and what is applicable (Roberts and Sarangi, 1999:366).

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Appendix 1 Chinese College English Curriculum Requirements (2007)

Course objectives and requirements

Beijing: Higher Education Press

Course Requirements are divided into three levels: Basic, Upper, and Advanced, which are presented in the table below.

Requirements: Listening	
Basic	<ul style="list-style-type: none"> -- able to understand lectures given in English; -- able to understand daily talks in English and seminars on general topics; -- able to understand the basic low-speed English programmes of English-speaking countries, and to get the main idea and pick up the main points with a speaking speed of 130 words per minute; -- able to use some basic listening strategies to help understanding;
Upper	<ul style="list-style-type: none"> -- able to understand basic talks and seminars given by people from English-speaking countries; -- able to understand long but familiar topics on the Chinese English language broadcasting services or English TV programmes, with a speaking speed of 150 words per minutes; -- able to understand English lectures on their subject given by foreign experts, and to get the main idea and pick up the main points;
Advanced	<ul style="list-style-type: none"> -- able to understand longer conversations and articles, and also able to understand the main points when the structure of a conversation or article is more complicated, and the views are more implicit; -- able to understand English-speaking countries' radio and TV programmes; -- able to understand English talk in their own subject areas, and to get the main ideas and the supporting details;
Requirements: Speaking	
Basic	<ul style="list-style-type: none"> -- able to communicate in English and engage in a discussion relating to the subject being studied; -- able to talk about daily-life topics with English native speakers; -- able to give a short presentation on a familiar topic, using accurate expressions and correct pronunciation and intonation; -- able to apply some basic conversation strategies to communication;
Upper	<ul style="list-style-type: none"> -- able to carry out reasonably fluent conversations with English native speakers; -- able to employ conversation strategies competently; -- able to express their own opinions, and feelings etc.; -- able to illustrate facts, incidents, reasons, etc., with accurate expressions and correct pronunciation and intonation.
Advanced	<ul style="list-style-type: none"> -- able to engage in fluent conversation or discussion on general or specialised topics; -- able to summarise briefly long and complex texts or talks in English; -- able to read their own papers and participate in discussions at international conferences or in exchanges between experts;

Requirements: Reading	
Basic	<ul style="list-style-type: none"> -- able to understand general English articles with a reading speed of 70 words per minute (wpm); and the reading speed is required to reach 100 wpm when the text is easier and longer; -- able to skim and scan during reading; -- able to read and understand the main ideas of subject-related English articles or newspaper articles on familiar topics with the help of a dictionary; -- able to understand expository articles which are frequently encountered in work and in daily life; -- able to employ effective reading methods in reading;
Upper	<ul style="list-style-type: none"> -- able to understand newspapers and magazines in English-speaking countries, with a reading speed of 70~90 wpm; and the reading speed should rise to 120 wpm when a text is easy and lengthy; -- able to read English literature and understand both the main ideas and the relevant details;
Advanced	<ul style="list-style-type: none"> -- able to read some difficult articles and understand both the main ideas and details; -- able to read newspapers and magazines in English from English-speaking countries; -- able to read subject-related literature with little difficulty;
Requirements: Writing	
Basic	<ul style="list-style-type: none"> -- able to complete some general writing tasks, such as describing personal experiences, personal impressions, personal emotions, and some incidents; -- able to write general argumentative articles; -- able to write a 120-word short essay on a general topic, or by following an outline, within 30 minutes, with appropriate cohesion and choices of expressions; -- able to demonstrate some basic writing skills;
Upper	<ul style="list-style-type: none"> -- able to express personal opinions on some general topics; -- able to write English abstracts for their own papers; -- able to write short subject-related papers; -- able to describe various diagrams; -- able to finish writing a 160 word short essay within 30 minutes, showing cohesion, clear logical order, and accurate expression;
Advanced	<ul style="list-style-type: none"> -- able to write short English reports and essays; -- able to express personal opinions; -- able to write an expository or argumentative article of at least 200 words, within 30 minutes, exhibiting logical and rhetorical structure; -- able to write subject-related reports and papers of at least 200 words, in 30 minutes.
Requirements: Translating	
Basic	<ul style="list-style-type: none"> -- able to translate between English and Chinese when the text topics are familiar. With the help of a dictionary, the translation speed should be 300 words in 30 minutes when it is from English to Chinese; and 250 characters in 30 minutes from Chinese to English; the translation should not have serious mistakes in terms of understanding and expression;
Upper	<ul style="list-style-type: none"> -- able to translate parts of subject-related English literature; -- able to translate newspaper articles in English speaking countries, with the help of a dictionary. The translation speed from English to Chinese should be 300 words in 30 minutes, and 300 characters in 30 minutes from Chinese to English. The translation should be readable, with few mistakes in comprehension or expression;

	-- able to use some translation techniques;
Advanced	--able to translate parts of subject-related English literature; -- able to translate newspaper articles from English speaking countries, with the help of a dictionary. The translation speed from English to Chinese should be 350 words in 30 minutes, and 300 characters in 30 minutes from Chinese to English. The translation should be readable, with few mistakes in comprehension or expression; -- able to use some translating techniques;
Requirements: Vocabulary	
Basic	4,795 words + 700 phrases, among them 2,000 active words
Upper	6,395 words + 1200 phrases, among them 2,200 active words
Advanced	7,675 words + 1,870 phrases, among them 2,360 active words

Appendix 2 Questionnaire on Academic Reading

同学：您好！

I'm investigating how Chinese students' reading develops while they are studying in the UK for my PhD at Cardiff University. This questionnaire consists of some questions about your background in learning English, and some statements about your experience of reading academic texts. Please indicate to what extent you agree with each statement. There are no "right" or "wrong" answers. The information that you provide in this questionnaire is made anonymous: nothing will identify you as the author, and your name will not appear on any electronic device.

Consent to participate

ENCAP Research Ethics Policy requires that written permission must be given by all participants for any data collected for the purpose of research. I give my permission to collect and use the information given in this questionnaire for research. I understand that my participation is voluntary, and that all the information I give will remain anonymous. If I have any complaint, I have the right to approach the Head of the Centre for Language and Communication Research. I have the right to withdraw at any time and for any reason before the results are submitted to Cardiff University for Liu Jie's PhD.

Signed

Date

Please tick (✓) here if you would be willing to take part in further research.

Please give email if you wish a summary of the results to be sent to you in due course, or if you have ticked.

The time commitment would be about 1 hour in 2008 (October) and 2 hours in 2009 (February and May).

Email:

Thank you very much for your help! 谢谢!

Liu Jie 刘洁

liuj12@cardiff.ac.uk

Centre for Language and Communication Research
Cardiff University

About You

In order to better interpret and classify your answers, would you mind telling me a little more about yourself?

1. Gender (tick box) : M F

2. Age:

3. What is your status at Cardiff University? (Please tick the box that applies to you.)
 undergraduate taught postgraduate (e.g. MA, MSc) research postgraduate (e.g. MPhil, PhD)

4. Course that you are now studying at Cardiff University:

5. Total number of months / year(s) of study at any university in an English speaking country:

..... months /..... years;

6. Before you came to study in the UK, did you pass the College English Tests in China?

(Please tick the box that applies to you.)

Band 4 only Band 4 and Band 6 Other(s) (please specify):

About Your Academic Reading

This section is a series of statements about your reading experience. It aims at exploring your own perceptions of academic reading.

I think that these are important activities in my coursework reading.

(Please enter the number for each item using the scale 1 – 6: 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=partly agree; 5=agree; 6=strongly agree)

1. Searching for information which is relevant to my study.	
2. Going through a text quickly to see what it is about.	
3. Understanding the structure of a text: how the main ideas and the supporting details are organised to express the author's ideas.	
4. Combining together various pieces of information from different texts to support my own ideas in assignments / examinations.	
5. Gaining general understanding of the main ideas in a text.	

My personal experiences in coursework reading:

(For each statement below, please tick (✓) the one that applies to your personal reading experience.)	Strongly disagree	Disagree	Slightly disagree	Partly agree	Agree	Strongly agree
6. I feel satisfied with my methods to reduce the stress generated by reading tasks.						
7. I think that my techniques of controlling my concentration when reading are effective.						
8. When I feel bored with my reading, I know how to adjust my mood to stay concentrated.						
9. When reading, I am aware that the study environment matters.						
10. When I feel stressed about reading, I try to solve this problem immediately.						
11. When reading, I am satisfied with myself that I never put off the reading tasks.						
12. I feel satisfied with my ways of getting rid of boredom during reading.						
13. When reading, I have my own techniques to stay concentrated on the reading materials.						
14. I have my special methods to carry on reading until I achieve my goals.						
15. I look for a quiet environment when I want to do some reading.						
16. Once the freshness and excitement of doing academic reading is gone, I easily become impatient with it.						
17. I think that my methods of managing to get reading tasks done in time are effective.						
18. I know I can overcome the difficulties I encounter during reading.						
19. I know how to make the environment more suitable so I can concentrate on reading.						
20. When reading, I know that I won't give up halfway.						
21. When I feel stressed about reading, I know how to cope with it.						
22. I am confident that I can cope with boredom generated during reading.						
23. I feel like giving up when I find a text too difficult to understand.						
24. I am confident that I can finish reading tasks in time.						
25. If the environment becomes unsuitable when I am in the middle of reading, I try to sort it out.						

Before I start to read for my coursework assignments,

(For each statement below, please tick (✓) the box that applies to your own reading experience.)	Strongly disagree	Disagree	Slightly disagree	Partly agree	Agree	Strongly agree
26. I think about what I am going to look for in a text.						
27. I usually know what to do if I find myself having trouble understanding certain parts of a text.						
28. I often skim a text quickly to get a general idea of its content.						
29. I usually make a decision on whether I need to read a text carefully from the titles or headings it contains.						
30. I search in a text for those passages which contain important information.						

During the process of reading a text,

(For each statement below, please tick (✓) the box that applies to your own reading experience.)	Strongly disagree	Disagree	Slightly disagree	Partly agree	Agree	Strongly agree
31. I tend to think about what is going to occur in a text.						
32. when I encounter new words in a text, I always look them up in a dictionary.						
33. I usually use my background knowledge to help me understand the content of a text.						
34. I check constantly whether I have anticipated correctly as I acquire more information in a text.						
35. I often write down my own comments on some ideas in a text.						
36. I think about the structure of a text, ie, how the arguments and supporting details have been organised together.						
37. I try to visualise the content of a text in order to remember it.						
38. I often find myself asking questions about a text as I read it.						
39. I usually underline the important passages for further understanding.						
40. I tend to link text content with other relevant information which I have read elsewhere.						
41. when I come across important parts in a text, I tend to read slowly to make sure that I understand every sentence.						
42. I make inferences from the information in the text if the arguments are not clearly stated.						
43. I always get clues with the help of linking words about the logical relationships between ideas in a text.						
44. I often use my grammatical knowledge to help me understand a text when I have difficulties with the language.						
45. I re-read the parts of a text which are important to my reading tasks.						

46. I feel more confident if I work out the Chinese meaning of relevant passages in a text.						
47. if I realise I am having difficulty understanding certain parts of a text, I slow down.						
48. I often move forwards and backwards to piece together the details of the main argument.						
49. I think about whether I agree with the author.						
50. I always read at the same speed to make sure I fully understand a text.						

After I finish reading a text,

(For each statement below, please tick (√) the box that applies to your own reading experience.)	Strongly disagree	Disagree	Slightly disagree	Partly agree	Agree	Strongly agree
51. I like to construct conclusions, or a summary, of what I have read.						
52. I usually check in different ways whether I have fully understood it.						
53. I always check whether I have found the information I needed in the text.						
54. I think about the structure of a text, ie, how the arguments and supporting details have been organised together.						
55. when I am trying to work out the main argument, I make inferences from the information in the text.						
56. I evaluate whether the writer's ideas are convincing.						
57. I often think about what I have learned from a text.						
58. I like to comment on the strengths and weaknesses of a text.						

If you use some other reading methods which are not included anywhere above, please list them below.

1.
2.
3.
4.

Please answer the following questions based on your own experience of academic reading.

Which aspects of coursework reading do you find easy? Please be specific.

.....

Which aspects of coursework reading do you find difficult? Please be specific.

.....

Thank You Very Much! 非常感谢您的合作!
 刘洁

If you have any questions or suggestions, or you are interested in the final results of the study, please don't hesitate to contact me by e-mail at liuj12@cardiff.ac.uk. I would be very pleased to hear from you.

Appendix 3 'Self-Regulating Capacity in Vocabulary Learning Scale' (SRCVOC) by Tseng et al. (2006)

Dear Fellow Students,

This is an educational research project about learning vocabulary. Below is a series of statements about your learning experience of vocabulary. We would like to know how far these statements match your own perceptions, that is, your personal view. There are no 'right' or 'wrong' answers. Moreover, the data we collect are for research purposes and your opinions will be respected and kept confidential.

There are twenty items in total in the questionnaire. Please tick the appropriate box concerning your personal vocabulary learning experience. Thank you very much for your cooperation!

Item Learning experience	Strongly agree	Agree	Partly agree	Slightly disagree	Disagree	Strongly disagree
1. Once the novelty of learning vocabulary is gone, I easily become impatient with it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. When I feel stressed about vocabulary learning, I know how to reduce this stress.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. When I am studying vocabulary and the learning environment becomes unsuitable, I try to sort out the problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. When learning vocabulary, I have special techniques to achieve my learning goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. When learning vocabulary, I have special techniques to keep my concentration focused.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel satisfied with the methods I used to reduce the stress of vocabulary learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. When learning vocabulary, I believe I can achieve my goals more quickly than expected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. During the process of learning vocabulary, I feel satisfied with the ways I eliminate boredom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. When learning vocabulary, I think my methods of controlling my concentration are effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. When learning vocabulary, I persist until I reach the goals that I make for myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. When it comes to learning vocabulary, I have my special	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

techniques to prevent procrastination.

12. When I feel stressed about vocabulary learning, I simply want to give up.

13. I believe I can overcome all the difficulties related to achieving my vocabulary learning goals.

14. When learning vocabulary, I know how to arrange the environment to make learning more efficient.

15. When I feel stressed about my vocabulary learning, I cope with this problem immediately.

16. When it comes to learning vocabulary, I think my methods of controlling procrastination are effective.

17. When learning vocabulary, I am aware that the learning environment matters.

18. During the process of learning vocabulary, I am confident that I can overcome any sense of boredom.

19. When feeling bored with learning vocabulary, I know how to regulate my mood in order to invigorate the learning process.

20. When I study vocabulary, I look for a good learning environment.

Appendix 4 Reading Materials for Think-aloud at Time1 and Time2

Time 1

Review of Development Economics, 12(1), 367-78, 2006

Three Poverties in Urban China

John Knight and Li Shi

During the period of central planning, and even during the early stages of economic reform, poverty in China was essentially a rural phenomenon. For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population. For 1995, calculations using a comparable survey and definition gave the proportions as 12.4% and 4.1%, respectively (Riskin and Li, 2001, pp.331, 336; Khan et al., 2001, p.129). Even these differences understate the rural-urban contrast: in real terms the urban poverty line was drawn at a level well above the rural one. Urban-dwellers were greatly protected from poverty by their “iron rice bowls” – guaranteed employment in state-owned enterprises operating mini welfare states – and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall” – restrictions on rural-urban migration and settlement (Knight and Song, 1999).

Since 1995, urban poverty has become an important issue. The reform of the loss-making, state-owned enterprises has produced vast redundancies, and a private and self-employment sector has been allowed to develop. Cracks have appeared in the iron rice bowl and in the invisible Great Wall. We use a household survey for 1999 to examine this new urban poverty. The proportion of households in poverty rose by 9%, and the “weighted poverty gap” (a measure of extreme poverty) by 89%, over the period 1995-99, even though urban real income per capita increased by 25%. We distinguish three types of poverty and try to explain them in the light of the circumstances that now face urban-dwellers.

The poverty line identifies the group in poverty. When an absolute poverty line is drawn, the food poverty line and the non-food poverty line are normally defined separately. The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal adult, and then to evaluate it in terms of money. Given the food poverty line and assuming a ratio of the non-food to the food poverty line, the overall poverty line can then be derived straightforwardly. When an absolute poverty line is applied to income, the implicit assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food. In reality, it is often found that some individuals with income above the poverty line have consumption below it (Deaton, 1991). They are usually defined as non-poor according to the income-based measure, but as poor according to the consumption-based measure. In this paper, we attempt to combine the two approaches in defining poverty.

The literature on poverty tends to use either income-based and consumption-based poverty concepts and measures. We develop three concepts: “consumption not income” poverty, “income not consumption” poverty, and “income and consumption” poverty. We also introduce “overall” poverty, encompassing all three measures. We explore why it is that some households fall into one of these three types of poverty, but not into the other two. In this way we attempt to explain not only the reasons for poverty in urban China, but also which sorts of poverty have the most adverse effects on economic welfare and which therefore deserve most attention in policy-making.

China’s process of economic transition from a centrally planned to a market economy is generating new and greater uncertainties relating to various factors that govern economic welfare. For instance, employment has become less secure, social security protection has been weakened, and user charges for public services have become important. These insecurities are likely to impact on the consumption behavior of low-income households. One hypothesis of the paper is that this leads to a new, or an increasingly important, type of poverty in urban China – “consumption not income” poverty.

(650 words)

Time2

Review of Development Economics, 12(2), 419—441, 2008

How Should We Measure Poverty in a Changing World? Methodological Issues and Chinese Case Study

Lars Osberg and Kuan Xu

One of the primary targets of the UN Millennium Development Goals is the global poverty rate, defined as the proportion of the world's population with income below the US \$1 poverty line. According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001. As a measure of poverty, this "headline number" has the enormous advantage of seeming simplicity. The poverty line --- one US dollar per day (adjusted according to purchasing power parity) --- seems immediately understandable as an indicator of absolute deprivation. The calculation of the percentage of people who are poor is similarly straightforward. This measure of global poverty can therefore easily be used in public debates --- even though it implicitly embodies the assumption that the degree, and inequality, of deprivation of the poor is not important. However, is this indicator sufficient for measuring global anti-poverty progress?

The "less than \$1 per day head count" embodies both a criterion of poverty and a *statistical summarization* of the extent of poverty. This study argues that it is questionable on both counts --- particularly in rapid growing economies such as China. This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple "normalized poverty gap ratio", is used for comparisons.

In common language usage, poverty is about deprivation of necessities --- the primary dictionary definition of "poverty" is "want of the necessities of life" (The Canadian Oxford Dictionary, 1998, p.1135). However, it has long been noted that definition of the "necessities of life" must be relative to the norms of a particular society at a specific point in time. Adam Smith's views on this were drafted at a time --- more than 200 years ago --- when all nations had very much lower incomes than at present, but their relevance endures: "Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people" (Smith, 1776, p.42).

The \$1 per day poverty line is, by contrast, an example of an absolute income criterion of poverty --- to be applied in all countries at any time --- whose value in local currency units is to be adjusted only to account for estimated variation in commodity prices. A variation on the same theme is that poverty should be measured in terms of command over specific commodities --- e.g., a minimum food and non-food basket --- rather than in terms of a generalized command over resources (such as money income or total consumption expenditure). Absolute poverty lines have often been used in developing countries, often based on the minimum food consumption basket for a specific level of calories (say 2200) and a minimum non-food consumption basket (World Bank, 2005).

Reddy and Pogge (2005) are among those who have criticized strongly both the arbitrariness of the initial \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time. Moreover, the rapidity of economic growth in recent years in some countries also suggests that an absolute poverty line methodology may be becoming less appropriate in some countries in this changing world. For example, in Maldives, Thailand, and some regions in China, no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04. In developed economies it has long been noted that even when the rhetoric of an "absolute" poverty line is used, redefinition over time of a "subsistence" consumption bundle means that the poverty line is implicitly, if periodically, redrawn relative to prevailing norms of consumption (Fisher, 1994; Osberg, 2000). Economic growth has meant that "absolute" poverty lines have changed, in practice, over time, as consumption items (e.g., indoor plumbing, refrigerators, telephones) which were initially considered non-essential have been reclassified as "necessary".

(719 words)

Appendix 5 Think-aloud Instruction

1. Speak out every thought that comes into your mind while reading, whether it is relevant or irrelevant to the material.
2. Choose a language which you feel more comfortable to speak. You can either speak English or Chinese, or a mixture of both.
3. No questions are expected from the participant during think-aloud.
4. If a pause lasts for about 20 seconds during reading, questions will be asked by the researcher, such as “what are you thinking about?”
5. Slash is marked after every sentence in the practice articles as a reminder of speaking out. There is no slash in the formal article. But you are required to keep speaking after finish reading every sentence.
6. A demonstration will be given at the beginning. Then you will have warm-up practice. The recording will start when you are ready.
7. Tasks will be given before you start to read.

Appendix 6 Coding Scheme for Verbal Reports

awareness of reading purposes	
planning what steps to take	<ul style="list-style-type: none"> a. Participants are aware of the comprehension problem, indicating they would come back to it later. b. Participants acknowledge their poor comprehension of a certain part, deciding to re-read it. c. Participants decide to skip the difficult parts because they don't think they are important. d. Participants know which unfamiliar words they need to work out their meanings. e. Participants decide to move on to the next sentence so that they are able to get more cues to help understand the present one. f. Participants underline the sentence, and claim that they need to read it again if the questions have covered this part.
skimming	
determining what to read	
scanning	
predicting	<ul style="list-style-type: none"> a. Participants predict what the article is going to talk about b. Participants predict what the paragraph is going to talk about c. Participants predict what the next sentence is going to talk about
guessing unfamiliar expressions	<ul style="list-style-type: none"> a. Participants consciously question unfamiliar words or phrases, trying to work out their meanings within the context clues. b. Participants deliberately skip the unfamiliar expressions, because they won't impede comprehension. c. Participants try various ways to match unfamiliar expressions in context. d. Participants use wordbuilding knowledge to infer the meaning of unfamiliar expressions.
associating with background knowledge	<ul style="list-style-type: none"> a. Participants associate the text content with personal experience. b. Participants associate the text content with the previous academic knowledge. c. Participants associate the text content with other information obtained somewhere else.
confirming prediction	
making notes	
paying attention to text structure	<ul style="list-style-type: none"> a. Participants know how to facilitate comprehension by their knowledge of writing. b. Participants are aware of the relationship between topic sentence and supporting details. c. Participants are sensitive to the message conveyed in the first sentence in a paragraph. d. Participants check the structure of the text -- the relationship between paragraphs. e. Participants analyse the logical relationship between sentences. f. Participants anticipate authors' ideas in the last part of the text. g. Participants are aware of the implicit message(s) conveyed by the font or punctuation. h. Participants are sensitive to the logical order of the idea units within a sentence.

	<ul style="list-style-type: none"> i. Participants are aware of the source of acquired information within the text. j. Participants are aware of the structure of academic writing during reading.
visualising text information	
generating questions while reading	<ul style="list-style-type: none"> a. Participants ask questions when they don't feel confident about their understanding of the sentence. b. Participants ask questions when they feel the inconsistency in their comprehension. c. Participants ask questions about the part which causes difficulty in their understanding. d. Participants ask questions because they fail to find the relevant information in the text. e. Participants ask questions when they feel uncertain about their judgement on the text information. f. Participants ask questions when they are trying to retrieve relevant information. g. Participants ask questions when they are not so sure about some concepts/terminologies in the text.
underlining the important parts	
integrating information with other sources	
focusing on important information	<ul style="list-style-type: none"> a. Participants recognise the key words or important concepts in the text. b. Participants point out that certain sentences cover important information. c. Participants focus on the key point(s) of the sentence, and skip the irrelevant / difficult part.
making inferences	<ul style="list-style-type: none"> a. Participants try to elaborate some ideas based on their understanding of the text. b. Participants infer information which is not explicitly mentioned in the text c. Participants give examples to illustrate concepts covered in the text d. Participants infer the sentential meaning based on the incomplete word decoding.
using discourse markers to see relationship	
using grammatical knowledge	<ul style="list-style-type: none"> a. Participants use syntactic knowledge to analyse sentence structure, to locate the main sentence, sub-clause, and the subject and verb. b. Participants use morphological knowledge to facilitate understanding.
re-reading	<ul style="list-style-type: none"> a. Participants read repeatedly parts of the sentence in order to understand them properly. b. Participants go back to the previous part to read it again where they have failed to understand it properly.
translating into L1 (46)	
taking steps to repair faulty comprehension	<ul style="list-style-type: none"> a. Participants realise an inconsistency in their comprehension, and try to correct it. b. Participants realise their previous misinterpretation of certain expressions, and correct them afterwards.
connecting one part of the text to another	<ul style="list-style-type: none"> a. Participants integrate the sentence information with the previous part of the text to gain a bigger picture. b. Participants notice that certain expressions have appeared several times in the text.

evaluating the author	<ul style="list-style-type: none"> a. Participants evaluate the logical order of the author's writing. b. Participants evaluate the author's writing perspective. c. Participants evaluate the author's intention. d. Participants point out the weaknesses in the writing.
adjusting reading rate	
summarising text information	<ul style="list-style-type: none"> a. Participants summarise the main ideas of a paragraph. b. Participants summarise the whole text: listing the ideas mentioned in the text
checking comprehension	<ul style="list-style-type: none"> a. Participants claim that they know the meaning of the word, but don't know how to translate it into Chinese. b. Participants confirm that their Chinese translation is correct during reading. c. Participants acknowledge their understanding of the text sentence by saying: "no problem with this sentence." d. Participants paraphrase the sentence (or the key part of the sentence) in their own words in order to make sense of the text information. e. Participants are aware of the consistency/inconsistency of their understanding. f. Participants further confirm their understanding by saying: 'That's it.' "Right".etc. g. Participants acknowledge their uncertainty or confusion in their comprehension. h. Participants find their mind is not focusing on the text, and immediately draw back their attention. i. Participants know that failure to understand certain parts of the text won't influence their overall comprehension.
judging how well objectives were met	
paying attention to text structure	
making inferences	
critiquing the author	
reflecting on what has been learnt from the text	
evaluating the text	<ul style="list-style-type: none"> a. Participants evaluate a language feature. b. Participants evaluate the content, whether it is interesting, boring, important, or not important. c. Participants show their approval/disapproval of the content. d. Participants comment on the text during reading.

Appendix 7 Key notes for transcribing conventions

((tr.:)) Non-English words are translated in double parentheses

[] In the case of inaccurate pronunciation of an English word, an approximation of the sound is given in square brackets

e:r the::: Lengthening of the preceding sound

°° Utterances between degree signs are noticeable quieter than surrounding talk

.hh Speaker in-breath

hh Speaker out-breath

(.) Very short untimed pause

↑↓ Marked shifts into higher or lower pitch in the utterance following the arrow

! Animated or emphatic tone

? Rising intonation, not necessarily a question

(3) Interval between utterances (in seconds)

(()) Non-verbal actions or editor's comments

Appendix 8 Verbal reports of Case1 at Time1 and Time2

Case1 Time1

Review of Development Economics, 12(1), 367-78, 2006

Three Poverties in Urban China

John Knight and Li Shi

S1

During the period of central planning, and even during the early stages of economic reform, poverty in China was essentially a rural phenomenon.

((tr.: This means, by means of some recent, uh, the planning)), (.) central planning, ((tr.: roughly it means, by means of some planning, the process of central planning)), and::: even during the early stages of [economics] reform, ((tr.: this means, by means of some early stages of economy)), reform ((tr.: I don't know its meaning, but it should also mean by means of some economic approach, or investigation, something like that, then, uh::: then)) [,po'verty] in China was:::, ((tr.: this)) [essentially], ((tr.: I don't know whether it means this, uh::: I don't understand this sentence. Let me skip it.))

S2

For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population.

((tr.: Then:::)) for instance, uh::: ((tr.: the, °°this word, then °°, I don't know this word. Uh::: this)) [car:::con] based on a [nationed] survey, ((tr.: in 1998, uh, this, I don't know this word, I don't know what it is. It focused more and more on an international survey, uh::: then, (.) .hh it:::)) showed 12.7% ((tr.: of something, the, the, the, I also don't know this word. I don't know)) [calation], ((tr.: then whatever, this means temporarily, it tells us a (.) this numerical data, mm::: then, but, there is also 27% of:::, uh, some)) urban population, ((tr.: the native country, uh::: then, then, I think, I guess, uh::: probably it talks about an overall)) nation survey, uh, ((tr.: in 1988, it is, it tells us a, probably there is 12.7, 12.7% of something, worldwide, it should be, uh, this means, other countries, or, uh::: (.) some data from other countries, but the native country takes 2.7%!))

S3

For 1995, calculations using a comparable survey and definition gave the proportions as 12.4% and 4.1%, respectively (Riskin and Li, 2001, pp.331, 336; Khan et al., 2001, p129).

((tr.: Uh, then from 1995, yep, since I don't know this word, then they make use of a (.) comparable::: survey:::, data, then, uh::: define the:::)) gave the [pro] proportions as 12, 12.4% ((tr.: and)) 4.1%, ((tr.: I don't know this, but they have given some numerical data!))

S4

Even these differences understate the rural-urban contrast: in real terms the urban poverty line was drawn at a level well above the rural one.

((tr.: .hh then, the:::)) these, ((tr.: these)), uh::: contrast, uh, ((tr.: is it contract? uh::: they talk about some different)), uh, understate, understate, .hh ((tr.: I feel these words all look familiar, but I just can't remember their meanings. But this sentence should be about, uh, something related to their::: contract! Then:::)) uh, in real terms, uh, the, (.) ((tr.: the native country)) poverty line was drawn at a level well above the::: ((tr.: this should be, mm::: in a, mm::: in a, in something)), in real terms, ↑ ((tr.: the native country's::: certain)) poverty, ((tr.: I forget its meaning, but I think it must be the main idea of this article! This word is very important, then::: uh::: it)), was drawn at a level well above the::: ((tr.: I don't understand this sentence.))

S5

Urban-dwellers were greatly protected from poverty by their “iron rice bowls” – guaranteed employment in state-owned enterprises operating mini welfare states – and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall” – restrictions on rural-urban migration and settlement (Knight and Song, 1999).

((tr.: Then:::)) uh::: urban-[divillers] were great, greatly protected, ((tr.: this means, uh::: from a)) (.) poverty, ((tr.: it started to protect something from this aspect! By means of, uh, their:::)) iron rice bowls, mm, ((tr.: I don't know what this is, but by this way it is to protect the:::, them, from))

po-poverty (.) ((tr.: also used their)) iron rice bowls ((tr.: to protect! I don't know what it is. Then)), .hh oh, ((tr.: the, the:::)) employment in state-owned, ((tr.: it should be)), state-owned, ((tr.: some of their native country's, companies, at the beginning::: were all very small, yep, the:::)) mini welfare state ((tr.: should be, let me think about it, it seems to mean some welfare?)) mini [wel] mini welfare state, ((tr.: welfare area? I think this)) welfare ((tr.: should mean welfare! though I am not sure. Then:::)) and they were defended against, (.) ((tr.: it started::: the)), the [pentaty] [compe] competition uh, ((tr.: then, this::: the, the, the, .hh since I feel now I, uh, I am thinking the, this sentence:::)) they were::: .hh ((tr.: I am thinking about the meaning of this paragraph. Because I think this paragraph I don't know how to::: don't know how to::: by means of words, work out its meaning, but, the following mentions)) by invisible Great Wall, (.) uh, Great Wall ((tr.: is the Great Wall, then, uh:::, uh:::, then the following mentions, mentions:::)) restriction on rural, ((tr.: I don't know whether I have pronounced wrongly)), urban migration and, ((tr.: for the time being I don't know its meaning, then, this paragraph, I think, mm::: this means by means of some::: planning, then, some, or some numerical data, uh::: this means by means of some surveys, uh, it tells us some numerical data, but I don't know what these data are about, uh::: but it should be relevant to something of the native country, native country and other countries! For this paragraph, this is what I have understood. Then, a comparison of something between their native country and the other countries? Then, then I will read the next paragraph.))

S6

Since 1995, urban poverty has become an important issue.

((tr.: Since 1995, the native country)) poverty, ((tr.: I think this word is very important, but I don't know its meaning, it starts to have, this means to have some problems, then.))

S7

The reform of the loss-making, state-owned enterprises has produced vast redundancies, and a private and self-employment sector has been allowed to develop.

The reform of the loss-making, ((tr.: this means some risks, (random), something like that, then)), uh::: state-owned, uh, ((tr.: those, this means)) state-owned enterprises ((tr.: this means the companies in their native country start to produce some, have already produced some)) vast [re-daden] ((tr.: I don't know this word, this means have produced something, then, and some)), and a private and self-employment sector has been allowed to develop, ((tr.: this means, then, many people and (.) uh:::, uh::: this means something of the self-employed staff, uh::: is allowed to develop? This, this should be (2), it says, a private and, this means this should refer to the tendency of privatization and::: in the aspect of self, self-reliance, this means one aspect starts to develop, pertinent to the company's future direction. This means to have a, uh, rough idea. But this sentence should be rather important! Then))

S8

Cracks have appeared in the iron rice bowl and in the invisible Great Wall.

(Reads this sentence.)

.hh, ((tr.: the)) rice, ((tr.: is it (), is it related to grains? Then::: uh, start to)) appear, uh::: ((tr.: then, (.), uh::: this sentence, regarding grains, .hh, I am not sure what this sentence is about, uh:::))

S9

We use a household survey for 1999 to examine this new urban poverty.

We use a household for, ((tr.: this means we use a)) mm::: household survey for (.) ((tr.: in 1999)), new ((tr.: native country, this means, (.) it must say, it tends to be rather privatised, rather self-relied, some section! Development, development in this direction, then, since the)) [crackers] has appeared, uh, in the, ((tr.: this means depending on the direction, it starts to ..., so, we use a::: that:::)) household survey, uh, ((tr.: this means, uh::: this means a)) new urban po'verty, ((tr.: it roughly means this!))

S10

The proportion of households in poverty rose by 9%, and the "weighted poverty gap" (a measure of extreme poverty) by 89%, over the period 1995-99, even though urban real income per capita increased by 25%.

Uh::: ((tr.: the)) proportion of households ((tr.: this means the, its, it starts to rise by 9%, then)), and the "weighted poverty gap", uh::: hh, ((tr.: the, it has 89%)), uh, measure of extreme poverty, .hh, ((tr.: this tells us some numerical data, then::: uh::: this means from 1995 to 1999 this period of

time)), uh:: the real, ((tr.: its real)) income uh:: ((tr.: has started, this means increasing by 25%, per)) capita? Uh, capita? ((tr.: I don't know the meaning of)) capita, ((tr.: then::: this means it has increased, increased, starts to rise by, by 25%, then.))

S11

We distinguish three types of poverty and try to explain them in the light of the circumstances that now face urban-dwellers.

We three types, ((tr.: we start to have three, uh:: this means)) [distingei] ((tr.: I don't know this word's meaning. There are three types of something! Then, can::: uh:: then, try to, since (.) by)) three types of poverty, ((tr.: then we try to)), uh:: in the light of, .hh in the light of, [crike] uh:: [cri], ((tr.: I don't know the meaning of this word)), that now face urban-dwellers, hh, ((tr.: then, uh:: .hh hh, this is, probably it says it, I don't understand this paragraph, but it should have said, it starts to have, appear a problem, this means, the problem is)) loss-making, ((tr.: then:::, since their companies in the native country start to generate some)) [vasta re-dudance], ((tr.: the stuff, then, it starts::: uh::: what on earth is it? It starts, it uses a, this means this paragraph probably talks about::: because of something)), the proportion of household, hh, ((tr.: gosh, so confused! This means, roughly this means, there appears a problem, this means the problem starts to emerge! This means it is about)) loss-making, ((tr.: anyway, it means this, this is roughly my understanding of this paragraph, then, uh::: I am moving on to the next paragraph which is:::))

S12

The poverty line identifies the group in poverty.

The poverty line identity, identifies the group in ((tr.: the:::, this is used as a:::)), a::: .hh,

S13

When an absolute poverty line is drawn, the food poverty line and the non-food poverty line are normally defined separately.

uh:: absolute po-poverty line, uh, ((tr.: this means)) (2) the food poverty line and the non-food, ((tr.: this means food:::)), ((tr.: food (style))), poverty line and non-food, ((tr.: something in relation to a food line and a non-food line, starts to be formally defined, starts to be distinguished, then, uh, then, this, hh, it, it, it, this means, it starts to be categorised as)) (.) the food poverty line and non-food poverty line, ((tr.: then.))

S14

The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal adult, and then to evaluate it in terms of money.

Conventional, conventional approach uh, to the food poverty line is to select a basket of foods required to meet the [minimume], ((tr.: probably this says, a food line, is it to choose a basket, basket of food? Then::: to be able to)) meet the [minimume] standard of, ((tr.: this means to be able to meet something of a very small standard, or something or the other, uh, then)) then to evaluate it in terms of money, uh, and then to, uh::: evaluate it in terms of money, ((tr.: roughly this means, it is able to prove in, this means in)) in terms of money, ((tr.: it is able to)) evaluate, uh:: hh ((tr.: Why I feel so confused.))

S15

Given the food poverty line and assuming a ratio of the non-food to the food poverty line, the overall poverty line can then be derived straightforwardly.

Given the food poverty line and assuming a ratio, ((tr.: this says, this means it has been given a food something and a non-food:::))(.) to the food, to the food 'poverty line, uh:: hh ((tr.: the uh::: this probably means:::, uh::: the)) food 'poverty line and [assumer] assuming a, ((tr.: this means giving something, ((turning the pages)) so confused! Let me read the following part)), the::: ((tr.: the overall, this means the overall is able to mm::: .hh skip this part first, then:::))

S16

When an absolute poverty line is applied to income, the implicit assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food.

When an absolute poverty line is applied to income, ((tr.: this means when it starts to)) (.) uh::: apply to income, the [im-plot] uh::: ((tr.: it starts)) (.) that ((tr.: this means (.) an individual

something)), income, uh:: ((tr.: starts)) will spend no less, ((tr.: this means (.) since, that is to say, it seems to say that)) absolute poverty line ((tr.: starts to influence its)) uh:: individual with income! ((tr.: Is this what this means? Then:::)) (2) amount required to buy the selected, ((tr.: start to choose (.) choose)) basket of food and non-food, uh, ((tr.: choose, (.) buy, choices? Food, basket of food and non-food? (.) what does it mean? Uh:: then:: then.))

S17

In reality, it is often found that some individuals with income above the poverty line have consumption below it (Deaton, 1991).

In reality, ((tr.: then, actually this, they often finds that some people start (2) mm::: this means start to have)) consumption, uh:: ((tr.: I don't know the meaning of this word, then, this means start::: it is also relevant to the)) poverty line!

S18

They are usually defined as non-poor according to the income-based measure, but as poor according to the consumption-based measure.

((tr.: Then they often have some)) non-poor according to, ((tr.: according to, this means)) income-based measure, uh, ((tr.: this means according to this, what do their definitions::: try to illustrate?)) poor, non-poor ((tr.: what does it mean? But, as)) (.) poor according to the ↓consumption-based measure, mm? (.) oh, ((tr.: they are often defined as)) non-poor, ((tr.: what does this mean? But actually according to something)) oh, ((tr.: this should mean, according to the::: this means according to the)) income-based mm measure, ((tr.: they are often defined as the)) non-poor, ((tr.: but actually according to the:::)) consumption-based measure, ((tr.: they are defined as)) poor, ((tr.: are defined as)) poor, ((tr.: rich people? Poor people?))

S19

In this paper, we attempt to combine the two approaches in defining poverty.

((tr.: Then, then)), in this paper, we [attem] attempt to combine the::: two approaches in, ((tr.: this means the most, this means we hh are::: this means linking two, it roughly means)), non-poor ((tr.: and)) poor, ((tr.: that is to say these two aspects!))

S20

The literature on poverty tends to use either income-based and consumption-based poverty concepts and measures.

((tr.: Then)), the literature on poverty tends to use either income-based and [consume], oh, ((tr.: the two aspects that they have mentioned should be)) income-based ((tr.: and)) consumption-based! ((tr.: I think it must be this, the two aspects that they have mentioned, because it is based on these two aspects to decide whether those individuals are)) non-poor ((tr.: or)) poor! ((tr.: then.))

S21

We develop three concepts: “consumption not income” poverty, “income not consumption” poverty, and “income and consumption” poverty.

Uh:: ((tr.: then we)) we::, uh:: ((tr.: we have three concepts, this means)), uh:: consumption (.) not income, ((tr.: without) income, ((tr.: this means, now I am thinking)), .hh consumption ((tr.: and)) income, ((tr.: what on earth are, what relationship should they have? or (.) is there any link? What kind of link do they have? Three!)) Consumption ((tr.: not)) income, income not consumption, ((tr.: then:::, should it be, this means, since they mainly focus on)) consumption ((tr.: and)) income, ((tr.: that is to say, three concepts, one is (.) uh::: one is a combination of both, then, the others are the separated ones, respectively, then)).

S22

We also introduce “overall” poverty, encompassing all three measures.

We also introduce “overall” ((tr.: this)) poverty, hh ((tr.: this:::, an overall one? Ai! .hh uh, the)), encompassing all three, uh:: ((tr.: this isn't very important, this sentence, then)).

S23

We explore why it is that some households fall into one of these three types of poverty, but not into the other two.

We explore::: ((tr.: why some)) households fall into one of these three types of, ((tr.: this means (.)

we start, this means, a question to be clarified is why some)) households ((tr.: start to)) fall into ((tr.: one of these three types?)) but not into the other two, ((tr.: does this sentence mean, the three, this means the three concepts, they only like to choose, this means to choose one of them, but not to choose the other two?))

S24

In this way we attempt to explain not only the reasons for poverty in urban China, but also which sorts of poverty have the most adverse effects on economic welfare and which therefore deserve most attention in policy-making.

In this way, we:: ((tr.: we can:: explain, cannot explain)) not, ((tr.: can)) not only the reasons for poverty in urban China, but also which sorts of poverty have the most, most effect on economic, ((tr.: economic welfare)), and therefore deserve most, uh, ((tr.: the, what is it called? The, the, the, political economy, it not only can, only only can, not only explain the reasons, .hh not only can explain China)) the reasons, ((tr.: probably explain something, or a phenomenon, but also can, uh, have a better, more)) adverse, ((tr.: have a better influence? Uh, regarding economy and politics?)) Therefore, and which therefore, most attention in, .hh ((tr.: does it mean:: uh, this, this means the)) poverty ((tr.: is able to have more influence on its economic welfare? Then:: also can draw more attention from people to political issues? (.) uh, then:: I don't know what it is talking about here, but it should be:: then::))

S25

China's process of economic transition from a centrally planned to a market economy is generating new and greater uncertainties relating to various factors that govern economic welfare.

Uh::: China's process of, ((tr.: economic)) transition from a centrally planned to a market economy, uh, ((tr.: that is to say, China, this means economy, China's economy from a, uh::: the:::)) a central, centrally planned to, ((tr.: from the)) centrally planned ((tr.: to a)) market economic! ((tr.: Is it? This means its, uh, that is to say, it has a economic transition, then this is, uh::: uh, that, that new)) and uncertainties, ((tr.: relating to a lot of (.) economic welfare, this means, uh::: this and::: this means its economic welfare can impact on (.) China's market, a market economy and some other economy!))

S26

For instance, employment has become less secure, social security protection has been weakened, and user charges for public services have become important.

((tr.: Then)), for instance, employment has become less, ((tr.: I don't know this word)), [secle] [secle], ((tr.: I don't know this word, then)), social security protect, ((tr.: then social protection starts to have some::: flaws? Then the, uh::: .hh that is to say, it, economy, uh::: this means its economy, (.) economic welfare and its staff, (.) uh::: this issue, then there is something, starts its social pro-, this means)) social security protection ((tr.: has a shortcoming, then)) user charges for public services, ((tr.: public service)) has become important, .hh, ((tr.: this means:::)) user charges, ((tr.: users gradually start to serve the public, no)), (.) user charges ((tr.: becomes very important, this means public service becomes very important!))

S27

These insecurities are likely to impact on the consumption behavior of low-income households.

((tr.: Then)), these, ((tr.: I don't know this word, uh, influence on)) consumption behaviour of low, low-income house-[handers], () ((tr.: it should mean, it has been mentioned previously)) income ((tr.: and)) consumption, consumption, uh::: ((tr.: this means, their, in their)) consumption behaviour, ((tr.: this can influence them, there is something which is able to influence them, it must mean that public service becomes very important, and is able to influence the)) con-sumption be-behaviour, ((tr.: this stuff!))

S28

One hypothesis of the paper is that this leads to a new, or an increasingly important, type of poverty in urban China – “consumption not income” poverty.

((tr.: Then, a:::, I don't know this word)), of the paper is that this leads to a new, or an increasingly, ((tr.: or, becomes more and more important?)) type of poverty in urban China, ((tr.: that is to say, uh, good, so far, I am thinking ((turning back to the previous parts)), what they have discussed is)),

three poverties in urban China, ((tr.: this means, ai, I really want to know the meaning of this))
poverty, ((tr.: what on earth is its meaning? It is very important, then, this is the most important
thing in this writing, then, the secondary point that they talk about is relevant to economy, then,
there are also three main concepts)), uh::: consumption ((tr.: and)) income, ((tr.: and also the)) uh:::
[consum], income and consumption, ((tr.: these three, in the end, I guess they seem to talk about,
they rather promote)) consumption not income ((tr.: this concept!))

Case1 Time2:

Review of Development Economics, 12(2), 419—441, 2008

How Should We Measure Poverty in a Changing World? Methodological Issues and Chinese Case Study

Lars Osberg and Kuan Xu

How should we measure poverty in a changing world? ((tr.: This sentence means, how should we (.), in a changing, this means in the process of a changing world, how should we, hh, this, this)) measure poverty, ((tr.: I don't know how to translate it, but roughly it should mean, uh, in the process of changing world, how should we have our own responsibilities! Then it is some)) [thedology] issue and Chinese case study, ((tr.: then this means, uh::: this, this issue and::: studying Chinese case, uh, then the authors' names. The following is, uh:::))

S1

One of the primary targets of the UN Millennium Development Goals is the global poverty rate, defined as the proportion of the world's population with income below the US \$1 poverty line.

One of the pri'mary targets of the UN, ((tr.: this sentence means, in)) (.) uh, UN [Mille-] ((tr.: I don't know this word. This means in a developing goal, uh, the most, most primitive purposes, one of them is)) global poverty rate, ((tr.: this means, this means, means, the first sentence should mean this. Then it is defined as)), uh::: the proportion of the world's population with income, (.) ((tr.: this means, it is defined as the world (.) uh::: in the world, how to translate this sentence, some::: global fashions (2) uh::: its, I don't know how to translate this sentence. But it should mean)) uh::: below the, ((tr.: but the following says)), below the US uh::: \$1 poverty line, ((tr.: it should mean, maybe with their income, uh::: income, and, relevant to income! The most basic thing! I don't understand. Then,))

S2

According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001.

According to uh::: ((tr.: this should be the)) (.) UN, ((tr.: this should)), UNIDO ((tr.: should be a simplified form, a simplified form, it should be::: uh::: this (.) I don't know the meaning of this simplified form. Then)) Industrial Development Report, ((tr.: then according to a)), oh, ((tr.: I know now. Actually, this is not important. This means, according to some Industrial Development Report)), the proportion of the world's population with income below, ((tr.: this means)), per day dropped (.) ((tr.: it, it says, what has been mentioned, this)) uh::: income, population with income, ((tr.: this means, is, should be that it has dropped from 40% in 1981 to 21% in 2001!))

S3

As a measure of poverty, this "headline number" has the enormous advantage of seeming simplicity.

As a measure of poverty, this "headline number" has the enormous, ((tr.: I don't this word. Maybe I pronounce it wrongly. Then)), uh, advantage of seeming, uh, simplicity, uh:::, ((tr.: since, since, since)), a measure of [po-] poverty, ((tr.: I also don't know this sentence.))

S4

The poverty line --- one US dollar per day (adjusted according to purchasing power parity) -- seems immediately understandable as an indicator of absolute deprivation.

((tr.: The following)) the poverty line, uh, one US dollar per day, uh, ((tr.: the following part in the bracket should have explained)) one US dollar per day, adjusted according to purchasing power parity, ((tr.: does it mean, according to the, uh, the, the, something, the)) [percham] ((tr.: according to the)) (2) purchasing, ((tr.: probably this () can be translated as, according to some of the current, uh::: paying regulations, then, it has been used as an, an adjustment? Have I understood it correctly? Then)) (.) seems immediately understandable, ((tr.: then, it seems, it seems, it has)), as an indicator of absolute [depri-], deprivation, hh ((tr.: here it should mean::: due to an)), uh::: indi-cator, ((tr.: I also don't understand this sentence. Then the next sentence is))

S5

The calculation of the percentage of people who are poor is similarly straightforward.

The calculation of the percentage of people who are poor is similarly, ((tr.: does this mean, uh::: the, this means, uh, why do I feel this article is so difficult?(2) Then, uh, probably it should mean, first it introduces something in America, something (2), uh::: this shouldn't be currency exchange rate! Then what kind of rate is it? It (.) firstly has dropped, then the following says, uh::: some::: very poor people, uh, then, probably it has caused some influence on them! Then))

S6

This measure of global poverty can therefore easily be used in public debates – even though it implicitly embodies the assumption that the degree, and inequality, of deprivation of the poor is not important.

This (.) measure of global poverty can therefore easily be used in public debates, ((tr.: then the global uh::: this sentence should be that because it is easily used in some public places, then, it, it, the uh::: (.) uh::: this means, I also don't understand this sentence)), even though it implicitly embodies the, ((tr.: this sentence, I think, I think I need to read the following part first, to see whether I can find some clues for this sentence, this paragraph)), and in-, of,

S7

However, is this indicator sufficient for measuring global anti-poverty progress?

However, ((tr.: however)), however, is this indicator [suffice] sufficient for, uh::: measuring global anti-poverty progress? ((tr.: Does it mean:::uh::: mean, it, it probably says)) indicator [selficient], uh, ((tr.: in the:::)) measuring global anti-poverty, ((tr.: in this progress, (2), hh the, the first paragraph, really, I really don't know what it is talking about. Uh, (2) let me read the next paragraph first.))

S8

The “less than \$1 per day head count” embodies both a criterion of poverty and a statistical summarization of the extent of poverty.

The “less than \$1 per day head count” embodies both a [crite:::] [crite-ry] of poverty and a (2) [statis], hh ((tr.: this, (.) uh, uh, this::: uh, let me read, let me read the following part first!))

S9

This study argues that it is questionable on both counts --- particularly in rapid growing economies such as China.

This study argues that, oh, ((tr.: it says this study, its arguments are, uh::: it)), (2) uh, it is question-able on both counts, uh::: particularly in, ((tr.: that is to say, this learning, (.) uh, its main problem is in all (2) *something*)) counts, ((tr.: I don't know how to translate, the following says, especially in some)), uh, rapid grow, growing [economics] such as China, ((tr.: then it says, (2) uh, maybe especially in some economic growth, isn't this)) rapid ((tr.: translated as quick? I don't know. For, for instance, China is mentioned here as an example.))

S10

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons.

This study argues that the poverty line in China should be, uh::: drawn relative to median, ((tr.: median)), median, ((tr.: median, (2), uh, this means)) poverty line, ((tr.: this means in China, this)) poverty line, ((tr.: should be, I mean associate with the)) (.) median Chinese income, ((tr.: does it mean median, median income of Chinese people? It relates to median, median Chinese income)), and it a-ttem-, (.) a-ttem-pu-t, attempts to contribute, ((tr.: then)) to the [debeet] on, ((tr.: does this mean::: (3) uh, it (.), this means, how to translate this sentence? Then)), uh, to the, ((tr.: but this sentence should be based on the following part)) to the [debieter] on world poverty by outlining the [conceper] [lines], ((tr.: this means, does it mean, I also don't understand this sentence. But it should be)) be-, between different in-, indi-, indices of poverty, (3), uh::: ((tr.: this, the previous part, should roughly mean, it says, uh, it:::, it here, (.) uh, uh::: this means, some problems relating to economic growth! Then, uh, this means, maybe this issue is about problems of some (.) Chinese families with median income. Then they, uh::: then::: roughly this is what this means! I don't understand, hh, (.) probably this means)), US \$1 poverty line ((tr.: has been compared with

Chinese case, is it? Then the following part says)), suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to, ((tr.: this means, suggesting::: uh, useful, suggesting a useful graphic (.) tool to compare the)) outcomes, poverty outcomes and, ((tr.: use, use some Chinese micro, uh::: some micro-data, to)), uh::: [demostrat], ((tr.: I don't know this word)), that little is lost in the inter-provincial ranking of poverty outcomes, .hh, ((tr.: does this mean, uh, using some Chinese micro-data to (.) this means (.) uh, this means, to obtain some conclusion? That is to say, there is a tiny bit of loss! in the)), in the inter-provincial, uh, ranking of poverty outcomes, ((tr.: I still don't understand. Then if)) poverty intensity, uh, also known as the simple, uh, ((tr.: the, this means, it is known, this means, as a very simple::: uh, very formal, uh::: very formal)) poverty gap [radio], uh, ((tr.: it is used as, this means, (.) used in many companies! Is this what this means? Uh::: (2) then the next paragraph.))

S11

In common language usage, poverty is about deprivation of necessities – the primary dictionary definition of “poverty” is “want of the necessities of life” (The Canadian Oxford Dictionary, 1998, p.1135).

In common language, uh, ((tr.: I don't know this word)), poverty is about deprivation of [necessi-], necessities the primary dictionary definition of, ((tr.: this means pub-, in some public, public, some common language, I don't know the meaning of the following one. Then)) poverty ((tr.: is about (2) uh, the)) deprivation of necessities, ((tr.: I also don't know how to translate this. It explains afterwards, originally, this means some most basic)) dictionary, ((tr.: the most, the most, doesn't it refer to the earliest dictionary? (.) That doesn't make sense! It, this means it is defined as)), of, definition of “poverty” is “want of the necessities of life”, ((tr.: this means, .hh I don't know what this means. Then, uh))

S12

However, it has long been noted that definition of the “necessities of life” must be relative to the norms of a particular society at a specific point in time.

However, it has long been noted that definition of, uh:::, ((tr.: does this mean, uh::: the very important part in life is defined as, uh::: the very important definition in life)) (2) has, it has long been, oh, ((tr.: does it mean, it already, uh::: (.) how to translate this? This means (3) uh, hh, the, (.) some important par-, uh, part in life, what it has defined, must be relating to, uh::: the)) norms ((tr.: in a particular society)), ((tr.: this, this, I also don't know how to translate. Then at)) at a [special] specific point in time, ((tr.: in a specific, uh::: specific)) point, uh, ((tr.: why I feel, hh, then, (2) the, uh, but this paragraph must mean, uh::: must have talked about)) poverty, ((tr.: about uh::: about it::: hh, its functions in, this means, in some society, or in life, or, uh::: some::: the, the most basic values! I don't know.))

S13

Adam Smith's views on this were drafted at a time --- more than 200 years ago – when all nations had very much lower incomes than at present, but their relevance endures: “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people” (Smith, 1776, p.42).

Uh, ((tr.: then, there is a person, who has such an argument, (.) he said that in the)) on this were drafted at a time, ((tr.: this::: this means in this aspect, uh, it was)) drafted at a time, more than [2,000] years ago, ((tr.: more than 200 years ago)), (.) uh, when all nations had very much lower incomes than at present, ((tr.: this means when all the countries had very low income)), but their relevance [under], ((tr.: I don't know this, but they, I don't know how to translate)), under necessities, ((tr.: this means under important circumstances)), therefore, I compre-, I compre-, ((tr.: I don't know the meaning of this word. The following is)), not only those things, ((tr.: this means not only, not only these things)), uh::: but, uh, uh, ((tr.: not only some very, some, this means not only some very nature, very, uh::: simple things, but also)) (.) but, (.) ((tr.: these things also, this means)), uh::: [decence] have rendered necessary to the lowest rank of people, ((tr.: this means in some uh::: in, yep, how to translate this sentence? Uh::: it should mean, (.) this means for some)), uh, lowest rank of people, uh, ((tr.: the regulations are also very important! This, maybe this means, these things, are also very, (.) this means very natural, very simple. But for some people, there are also certain::: how to put it, there are certain, there are certain)) [rulers], ((tr.: this means there are certain regulations! Is it? (.) Then,))

S14

The \$1 per day poverty line is, by contrast, an example of an absolute income criterion of poverty – to be applied in all countries at any time – whose value in local currency units is to be adjusted only to account for estimated variation in commodity prices.

The \$1 per day poverty line is, ((tr.: this means according to contract, an:: hh an)) an example of an absolute income, uh, ((tr.: this is, according to contract, an)) (.) income, ((tr.: an example, it is talking about an example!)) Uh, to be applied in all countries at any time, uh:: ((tr.: this means at any time, it can be applied by all countries! That is to say, it talks about one:: of its, it talks about one of its characteristics! This should mean)), whose value in local currency units is to be adjusted, uh:: ((tr.: this:: its value, it should refer to its value!)) To be, ((tr.: it is)), only to, ((tr.: it is to be modified, or, it is, by what? Its value has been modified, then)), only to account for estimated variation, ((tr.: this means in, uh, the, it should be translated as, uh, in many, does it mean it also varies, the variation of prices? I really don't know. Then))

S15

A variation on the same theme is that poverty should be measured in terms of command over specific commodities – e.g., a minimum food and non-food basket – rather than in terms of a generalized command over resources (such as money income or total consumption expenditure).

A variation on the same theme is that, ((tr.: this means something in the same (.) theme)) (.), a:: variation is that, ((tr.: this means)) poverty should be, ((tr.: it should be able to be measured!)) in terms of command over specific co-mmo-dities, ((tr.: I think I know what this means. This means this can be measured, then, one example is)), uh, a [minimea] food ((tr.: this means uh:: the, the minimum of food and non-food)) basket, ((tr.: a basket without any food?)) rather than in terms of a [generea] generalized, uh:: command over resources, ((tr.: this should be uh:: this:: I also don't understand this. But the example should be about)), poverty should be, ((tr.: this means)) poverty ((tr.: should be able to be measured! This is what the example is about! Then))

S16

Absolute poverty lines have often been used in developing countries, often based on the minimum food consumption basket for a specific level of calories (say 2200) and a minimum non-food consumption basket (World Bank, 2005).

absolute, uh:: poverty lines have often been used in developing countries, ((tr.: this means, this)) absolute poverty ((tr.: is often used in some developing countries, then often based on uh:: the::)) [minimea] ((tr.: this means the minimum of food. I don't understand what it is talking about. The following is, this means)) for a [special] level of [ca-, calo-] calories, ((tr.: it should mean for some special types of)) (2) calories, ((tr.: I don't know what it is. Then, (.) uh:: non-food)) consumption, consumption, ((tr.: this means the minimum of food and non-food, this means, uh, a comparison is made here! Is this what this paragraph is mainly about? As for the several countries, the developing countries, (.) its uh:: some effects that)) poverty line ((tr.: has had on them. Are they going to compare them?))

S17

Reddy and Pogge (2005) are among those who have criticized strongly both the arbitrariness of the initial \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time.

((tr.: Then, uh:: then this would, this has been pointed out, uh:: would, he comments on, criticises strongly, says, the)), ar-, ((tr.: I don't know what this means)), ar-bi-trari-ness, the [initial], uh:: ((tr.: that is to say:: wow, the following word, I don't know. I also don't know what it is talking about! Anyway, this person must have criticised strongly that there are some weaknesses in this idea. Regarding this, that is to say, uh:: this means, this means different opinions have been voiced regarding the existing)) poverty line! ((tr.: This should be it. Then:: uh, uh::))

S18

Moreover, the rapidity of economic growth in recent years in some countries also suggests that an absolute poverty line methodology may be becoming less appropriate in some countries in this changing world.

Moreover, ((tr.: then)) the [rapidate] of economic, ((tr.: this means economic growth, in recent years, uh, (.) this means in some similar countries, in some, in some countries, economic growth, recent economic growth, also::, suggests)) that, (.) uh, an absolute poverty line methodology, ((tr.:

this means, uh, maybe this means accepted by most people! Then, it is suggested as, uh:: suggested as the, suggested as the)) absolute poverty line methodology, ((tr.: is defined, is suggested as this, then, maybe it also would become)) less a-ppropriate, ((tr.: also would gradually become a, uh:: very suitable)) (.) uh, becoming less (.) uh, appropriate, ((tr.: in some similar countries, this changing, uh, (.) in this changing world, and in some countries, it will become less and less suitable? I don't know.))

S19

For example, in Maldives, Thailand, and some regions in China, no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04.

((tr.: Then, for example, in this place)), [Mandives], ((tr.: this place, then something, something and the)) some ((tr.: some places in somewhere, somewhere, then China, then:: the::)) uh:: no absolute poverty exists, ((tr.: it exis-, if an, an)) absolute poverty line, this means \$1 per day)) absolute poverty line, uh:: ((tr.: it doesn't really exist, does it?)) no absolute (.) it, then, it would be used in April, 2003?) Oh, ((tr.: that is to say, if the, the)) absolute poverty line ((tr.: was used in April, 2003, then)) no absolute poverty:: exists, ((tr.: there wouldn't be an absolute, this means something would happen to this, would something exist or not exist? I don't know what this means. Then))

S20

In developed economies it has long been noted that even when the rhetoric of an “absolute” poverty line is used, redefinition over time of a “subsistence” consumption bundle means that the poverty line is implicitly, if periodically, redrawn relative to prevailing norms of consumption (Fisher, 1994; Osberg, 2000).

In developing, developed [economics] ((tr.: in the development, in economic development)), it has long been noted that even when, ((tr.: when this:: I don't know this word)), of:: ((tr.: that is to say, when this stuff is used, uh:: it would be, (.) how to translate this sentence? This means)) it has long been noted that even, ((tr.: that is to say, because, isn't it translated as, when this is adopted, when it is used, then, uh:: the, the)) it, ((tr.: I don't know what it is mainly about, then it is)) no-, noted, ((tr.: then is, uh, it should be this! Then::)) redefinition over time of a “subsistence” consumption bundle means that the poverty line is implicitly, ((tr.: that is to say, several times, good, this)) re-definition over time, ((tr.: does it mean::, redefine, define, define repeatedly? The)), uh, subsistence consumption, ((tr.: this means define this, uh, this:: this conception, then it is thought the)) poverty line is im-pli-citly, ((tr.: this word)) (2) ↓implicitly, ((tr.: I don't know this word)), if, uh:: [poridy] ((tr.: I also don't know this word, then, the following part talks about that it is related to some (.) the)) [prevai], uh, ((tr.: what does this word mean?)) Norms, prevailing norms, ((tr.: regarding the conceptions! It will, it will have, does it mean, have some relative association? Then))

S21

Economic growth has meant that “absolute” poverty lines have changed, in practice, over time, as consumption items (e.g., indoor plumbing, refrigerators, telephones) which were initially considered non-essential have been reclassified as “necessary”.

Economic growth has, ((tr.: economic growth has already meant that)), absolute poverty lines, ((tr.: this means it has already changed, this means in practice, practice, in practice, uh:: the conception, as a)) consumption items, ((tr.: this means a conception, this means uh, how to put it, this means a imaginary project, uh, for instance)), indoor [plumbing], ((tr.: this::)) oh, telephones, ((tr.: the, this means, this means tele-, telephone)), telephones, ((tr.: door)), indoor, ((tr.: it should be in some (.) I think this should mean, as for some impractical projects, it is a design! This means a design for some specific project items, undergoing, some items which have been carried out, they, this means:: can)), uh:: con-, consider, consider, ((tr.: to be considered, then)), have been re-classified, ((tr.: as very important, this means those (.) items which are under designing, should, should, should, should, it roughly means, should examine the possibilities of these items, it is very important! It roughly means this, I really don't know.))

Appendix 9 Verbal reports of Case2 at Time1 and Time2

Case2 Time1

Review of Development Economics, 12(1), 367-78,2006

During the period of, first Review of Development Economics, ((tr.: this is an, probably an article from a journal.))

Three Poverties in Urban China

John Knight and Li Shi

uh, three poverties in urban China, poverties, ((tr.: uh, this is a new word, I don't know, but I know that this article is about three some)) poverties in ((tr.: the towns in China.))

S1

During the period of central planning, and even during the early stages of economic reform, poverty in China was essentially a rural phenomenon.

During the period of central planning, and even during the early stages of economic reform, ((tr.: it talks about, about::: about the early period of economic development, the, uh)), period of central planning, ((tr.: it means some planning)), poverty in China was essentially a rural [pheno], [phemo], phenomena, poverty ((tr.: in China is a necessary, a)) rural, ((tr.: I forget this word, a phenomenon.))

S2

For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population.

For instance, ((tr.: for example, the, the following part gives, the following long part gives an example)), [calcu] calculations based on a national survey in 1988 showed 12.7% of the rural [polution] to be in poverty, ((tr.: I am thinking, this means::: based on a)) national survey, ((tr.: judging from a local study, there were 12.7% of, uh,)) rural [polution] in, to be in [povertin], ((tr.: in 1988, uh)), but::: only 2.7% of the [urban] [polutions], ((tr.: oh, seeing this, I feel I understand better now. The previous part mentions that there were, uh, were 12.7% of rural population)) to be in poverty ((tr.: then, here, only 2.7, 2.7% were (.) of city population.))

S3

For 1995, calculations using a comparable survey and definition gave the proportions as 12.4% and 4.1%, respectively (Riskin and Li, 2001, pp.331, 336; Khan et al., 2001, p.129).

((tr.: Then,)) for 1995, calculations using a comparable survey and definition gave the [proper] [proper] [proportions] as 12.4% and 4.1%, ((tr.: uh, for 1995, this)) calculation ((tr.: used a)) comparable ((tr.: survey, then, for the)) [proper] [proportion] ((tr.: a definition is given, I think they were respectively)) gave as, ((tr.: respectively, here 12.4% and 4.1% have employed a, employed a, uh:::)) using a [compo], ((tr.: here is it talking about the percentages of the)) comparable survey, ((tr.: and the)) definition gave the proportions, ((tr.: the two percentages?))

S4

Even these differences understate the rural-urban contrast: in real terms the urban poverty line was drawn at a level well above the rural one.

Uh, and, even these differences understate the rural-urban contrast, uh, in even these differences understate the rural-urban contrast, in real terms the urban poverty line was drawn at a level well above the rural one, ((tr.: as for these two, as for these, mm, (.) judging from the comparison between countryside and city, mm,)) these differences understate, ((tr.: mm, in)) in real terms, (.) in real terms the urban poverty line was drawn at a level well above the rural one, ((tr.: I don't understand this part.)) (.)

S5

Urban-dwellers were greatly protected from poverty by their “iron rice bowls” – guaranteed employment in state-owned enterprises operating mini welfare states – and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall” – restrictions on rural-urban migration and settlement (Knight and Song,

1999).

Urban-dwellers were greatly protected from poverty by their “iron rice bowls”, ((tr.: urban population, urban)) dwellers, ((tr.: maybe it is talking about one type of people, that is)) greatly protected from poverty by their, ((tr.: probably, the)) “iron rice bowls”, ((tr.: it must be talking about the “golden rice bowls”, does it mean “golden rice bowls”? sounds a bit... mm)), were greatly protect, ((tr.: this probably means that this type of people is part of urban population, this part of people have been in)) poverty, ((tr.: this means that they have a protection policy, the)) “iron rice bowls” ((tr.: what is it? The following is a)) definition, ((tr.: which is)) [gua] guaranteed employment in state-owned enterprises operating mini welfare states, ((tr.: mm, this means, means, they:: (.) mm,)) guaranteed employment ((tr.: refers to)) employment, ((tr.: protecting them in, mm, which is, there is a guarantee of minimum welfare)), and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall”, and they were defended ↓against the potential competition, ((tr.: then, they are protected, are, mm, are, mm, are, they are)), defend((tr.: means defend)), defend against ((tr.: this means, mm, (), here)) potential, ((tr.: probably is from the)) rural, ((tr.: a challenge from the)) rural dwellers, competition, by an “invisible Great Wall”, ((tr.: this)) definition ((tr.: is)) restrictions on rural-urban migration and settlement, ((tr.: does it talk about something about migration?))

S6

Since 1995, urban poverty has become an important issue.

(Reads this sentence)

((tr.: It is not until 1995 that urban)) poverty ((tr.: starts to, uh, become a very important topic.))

S7

The reform of the loss-making, state-owned enterprises has produced vast redundancies, and a private and self-employment sector has been allowed to develop.

The reform of the loss-[marking], state-owned enterprises has produced vast redundancies, °°the reform of the loss-making, state-owned enterprises°°, ((tr.: this, the, the, this sentence (.) talks about)) vast [reductary], ((tr.: it seems it has caused massive surplus, this)) [lose]-making, state-owned ((tr.: this type has produced much waste, ↓what is it?)) the reform of the loss-[marking], state-owned enterprises has produced vast redundancies, °°the reform of the loss-making, state-owned enterprises°°, ((tr.: the)) private, private (tr.: means)) self-employment, ((tr.: here it refers to private enterprises, which means, uh, are allowed to start, maybe this means that the government allows, allows to develop.))

S8

Cracks have appeared in the iron rice bowl and in the invisible Great Wall.

(Reads this sentence.)

((tr.:It talks about what has been mentioned previously urban and the, mm,)) rural, ((tr.: that, (.) their, uh, something mentioned earlier, mm is::)) cracks, ((tr.: I was thinking that here may be one, (.) this means that the previous situation has been destroyed. It means this, then)), next.

S9

We use a household survey for 1999 to examine this new urban poverty.

(Reads this sentence.)

((tr.: Mm, we, in 1999, we use one)) household survey to ((tr.: examine the new, newly emerging)) urban poverty.

S10

The proportion of households in poverty rose by 9%, and the “weighted poverty gap” (a measure of extreme poverty) by 89%, over the period 1995-99, even though urban real income per capita increased by 25%.

The proportion of households in poverty rose by 9%, ((tr.: this)) household ((tr.: the proportion has risen to 9%, what does it mean?)) household, households ((tr.: mean shareholder? .hh this must be the shareholder, that is to say, the shareholders, in terms of)) poverty, poverty, ((tr.: here it probably, here it looks like a sort of policy in a company, I mean, a company's, a company's regulations, something like that, it has risen to 9%)), and the “weighted poverty gap” (a measure, “weighted poverty gap”), ((tr.: there is an explanation afterwards, and it says)) a measure of extreme poverty, ((tr.: is completely, this :: mm,)) poverty, ((tr.: mm, occupies 89%)), by 89%, over the period, mm, 1995-1999, even though urban real income per [capi] [capitle] increased, [capi],

((tr.: this is)) [capital], [capiter] (.) increased by 25%, ((tr.: even though the real urban income, which is, uh, for)) per [capital] ((tr.: is, relating to money? That is to say, in cities, their real income maybe, between 1995 to 1999, has risen, uh, risen by 25%, mm.))

S11

We distinguish three types of poverty and try to explain them in the light of the circumstances that now face urban-dwellers.

(Reads this sentence.)

((tr.: We divide, here it probably talks about, the following, the following, probably it will talk about the)) three types, ((tr.: mm, and)) to explain them, ((tr.: here it talks about the three types, three types of)) poverty, ((tr.: now)), urban dwellers [jullers] ((tr.: this means are going to face, mm, face)), light of [circumstance], [circumstance], light of [circumstance], ((tr.: here, here is quite confusing.))

S12

The poverty line identifies the group in poverty.

(Reads this sentence.)

The poverty line, ((tr.: this, this, (.) uh, talks about the:: (.) different, uh::, ↓layers, or something else, when they distinguish)) poverty?

S13

When an absolute poverty line is drawn, the food poverty line and the non-food poverty line are normally defined separately.

(Reads this sentence.)

((tr.: This means when the, mm,)) poverty line, ((tr.: after it is drawn, the food, (.) food)) poverty line, ((tr.: this whatever line and non-food, this means now,)) normally defined separately, ((tr.: this means now it has been divided, defined separately, defined)), are normally defined separately, ((tr.: are separated completely.))

S14

The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal adult, and then to evaluate it in terms of money.

The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal [ault], ((tr.: here it talks about)) conventional, convention, .hh ((tr.: in my memory, it seems, seems to mean something like upright, or, or protective? I forgot)), approach, approach, ((tr.: this method? It is going to talk about)) food poverty line, ((tr.: to select a)) basket of foods required, ((tr.: to, to, to, to)) meet the, ((tr.: to)) meet the, ((tr.: this sentence, I don't know how to say it in Chinese)), meet the ((tr.: the minimum nutrition, for a normal, ordinary adult, the minimum)) standard nutrition, ((tr.: uh, then here:: (3) here, reading this part I feel inconsistent with my previous understanding. It is not talking about)) food poverty line, ((tr.: uh, the following is)) and then to evaluate it in terms of money, (.) ((tr.: then to, then to assess the (.) its value.))

S15

Given the food poverty line and assuming a ratio of the non-food to the food poverty line, the overall poverty line can then be derived straightforwardly.

(Reads this sentence.)

[forward] [forwardly], ((tr.: as for the:: food)) poverty line, ((tr.: and the)) non-food poverty line, mm, given the food poverty line and assuming, assuming, ((tr.: this means to assume the, the:: the, the proportion)) ↓non-food to the food poverty line ((tr.: its proportion, the overall line and)), straightforwardly, ((tr.: does it mean directly?)) [Di-derive] ((tr.: here I don't think it matters, ↓though I don't know the meaning.))

S16

When an absolute poverty line is applied to income, the implicit assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food.

When an absolute poverty line is applied to income, (3) uh, ((tr.: now it is talking about, talking about the)) poverty line, (2) ((tr.: as for the income, this means associating with income,)) the

[impli] [implicity] assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food, ((tr.: here it says, after associating with income, this idea)), assumption ((tr.: means, for the individuals, if their income and the)) poverty line ((tr.: is the same, they won't be::, they won't be)) no less than, ((tr.: will spend)) no less than the amount, ((tr.: this means to buy the)) basket, basket of food and non-food, ((tr.: of this, mm, amount.))

S17

In reality, it is often found that some individuals with income above the poverty line have consumption below it (Deaton, 1991).

In reality, ((tr.: in society,)) it is often found that some individuals with income above the poverty line have consumption below it, ((tr.: this sentence means, in current society, some people, their income may be, their income may be above the)) poverty line, ((tr.: this line, but, their, their consumption is still below the, still below the)) poverty line.

S18

They are usually defined as non-poor according to the income-based measure, but as poor according to the consumption-based measure.

They are usually defined as non-poor according to the income-based measure, ((tr.: they often, the)), non-poor, ((tr.: is, mm, not, not, not poor?)) Non-poor ((tr.: this means not poor)), according to, ((tr.: in line with the)) income-based measure, ((tr.: in line with the income (.) and this approach)), but as poor according to the consumption-based measure, mm, uh, ((tr.: they are talking about)) non-poor ((tr.: in terms of income, but the poverty is about the, uh, about the consumption level, it must be this.))

S19

In this paper, we attempt to combine the two approaches in defining poverty.

(Reads this sentence.)

((tr.: In this article, we try, try to combine the two approaches, this means different definitions are combined together, to define)) poverty.

20

The literature on poverty tends to use either income-based and consumption-based poverty concepts and measures.

(Reads this sentence.)

((tr.: This, mm)) [li-literature] ((tr.: means in creative literature, the rather formal trend about)) poverty ((tr.: mm, (.) () also uses the)) income-based, ((tr.: income, and the consumption, approaches, their concepts and approaches, anyway, use these two, maybe)) combine ((tr.: them)).

S21

We develop three concepts: “consumption not income” poverty, “income not consumption” poverty, and “income and consumption” poverty.

We develop three concepts, ((tr.: there are three definitions,)) “consumption not income” poverty, ((tr.: consumption not, not equal to income, uh, consumption,)) consumption, ((tr.: not income,)) poverty, “income not consumption” poverty, and “income and consumption” poverty, ((tr.: these are three kinds of concepts.))

S22

We also introduce “overall” poverty, encompassing all three measures.

We also introduce “overall” poverty, ((tr.: also there is another one, it is the)) overall, ((tr.: probably it is a combination of the two?)) encompassing, encompassing all three measures, ((tr.: here maybe it talks about which three types)) overall poverty ((tr.: encompasses, three types)) three concepts, [encomp] encompassing ((tr.: this means involving three of them.))

S23

We explore why it is that some households fall into one of these three types of poverty, but not into the other two.

We explore why it is that some households fall into one of these three types of poverty, ((tr.: it talks about)) we explore, ((tr.: why some of the)) households, ((tr.: they)) fall into, ((tr.: they don't have,

don't belong to the, the one of these three types?) but not into the other two, uh, ((tr.: this sentence probably means)) we explore why it is that some households fall into one of these three types of poverty, but not into the other two, ((tr.: here it probably talks about the previous, which has been mentioned previously)), household ((tr.: is one of them, not two of them, why? Maybe the following will explain why.))

S24

In this way we attempt to explain not only the reasons for poverty in urban China, but also which sorts of poverty have the most adverse effects on economic welfare and which therefore deserve most attention in policy-making.

(Reads this sentence.)

In this way we attempt, ((tr.: we attempt to)) explain, ((tr.: not only explain this, uh, urban China, the)) poverty ((tr.: its reasons, but, also)) which sorts of, sorts of, uh, ((tr.: my eyes hurt)), which sorts of poverty have the most adverse effects on economic welfare, ((tr.: it talks about what may have been mentioned earlier, relating to whatever government welfare, and the, mm)) in policy-making, ((tr.: in this aspect, something or other has been influenced. Let's move to the next passage.))

S25

China's process of economic transition from a centrally planned to a market economy is generating new and greater uncertainties relating to various factors that govern economic welfare.

China's process, ((tr.: I think, I am thinking that I finally come to the last part.)) China's process of economic transition from a centrally planned to a market economy is generating new and greater uncertainties relating to various factors that govern economic welfare, ((tr.: China's (process), the (process) economy, from the))centrally planned to a market, ((tr.: this means, mm, (.) means)), central, ((tr.: this means, is, maybe it is talking about, in China, the::: .hh from the government control type to market, (.) centrally planned economy to a market economy, this means this, anyway, .hh maybe it causes a new, but, new, but also very, un-, un-, uncertain, uncertain, about what? About the)) various, ((tr.: different)) , mm, govern economic wel-welfare, ((tr.: it maybe causes the different)) factors, ((tr.: factors.))

S26

For instance, employment has become less secure, social security protection has been weakened, and user charges for public services have become important.

For instance, ((tr.: for example,)) employment has become less secure, ((tr.: for example, the)) employment, ((tr.: the companies become)) less secure, ((tr.: means not very safe?)) social security protection has been weakened, ((tr.: here it is talking about the problem of security and protection)), and user charges for public services have become important, ((tr.: and the user for the)) public service, user charge, mm, ((tr.: this means (.) the user makes a ↓judgement, ↑judgement? on the)) public service, charge, ((tr.: becomes more and more important.))

S27

These insecurities are likely to impact on the consumption behavior of low-income households.

(Reads this sentence.)

((tr.: The insecure factors may:::)) of low-income households, .hh ((tr.: will influence)), impact on, ((tr.: impact on those consumption behaviour, this means, means, of low-income, of low-income people's consumption behaviour, .hh))

S28

One hypothesis of the paper is that this leads to a new, or an increasingly important, type of poverty in urban China – “consumption not income” poverty.

One hypothesis of the paper is that this leads to a new, or an increasingly important, type of poverty in [under] urban China, ((tr.: this, our writing, in their writing one hypothesis, this means it probably will lead to a new, and continuously, with continuously increasing importance, a kind of urban China's, an unique)) poverty, consumption not income poverty, ((tr.: consumption not equal to income.))

((tr.: After finish reading this article, I feel very confused, it seems that I don't have a ((turing back

and forth the article)), I know it is talking about a) poverty, ((tr.: but maybe I don't know)) poverty ((tr.: it has influenced the overall, overall reading direction and comprehension, but I roughly know it is talking about a kind of::: development trend, or a comparison of whatever)) poverty, ((tr.: between city and countryside, in the end, there is a classification of)) China urban, ((tr.: roughly it is about this.))

Case2 Time2

Review of Development Economics, 12(2), 419—441, 2008

How Should We Measure Poverty in a Changing World? Methodological Issues and Chinese Case Study

Lars Osberg and Kuan Xu

((tr.: First of all, this is an, an issue of a journal)) Development Economics. ((tr.: It is about)) how should we measure poverty in a chan-, (.) oh, changing world? Methodological issues and Chinese case study, ((tr.: I can tell immediately that this is about a Chinese case study. It is about)) poverty ((tr.: relating to property, in a)) changing world, ((tr.: probably it refers to the third, with rapid development)), developing ((tr.: countries! Then, authors)). One, ((tr.: first of all, it will talk about China's development. If it talks about China first, China is a developing country, uh::: then probably in the area where there exists serious poverty gap, there might be some problems regarding these properties. Then,))

S1

One of the primary targets of the UN Millennium Development Goals is the global poverty rate, defined as the proportion of the world's population with income below the US \$1 poverty line.

One of the primary targets of the UN, ((tr.: this)) UN, ((tr.: this is a, probably is an association or something, a)) global poverty rate, defined as, ((tr.: defined as)), the proportion of the world's population with income below the US \$1 poverty line, ((tr.: this means among the, the::: the)) UN goals, ((tr.: there is a, maybe is an assessment)), [mayor], ((tr.: assessment)) indicator, ((tr.: criterion of the assessment, then, global assessment criterion, then assess the population, population)) population ((tr.: and their income, something about the (.) proportion of income!))

S2

According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001.

((tr.: Then)) according to ((tr.: the indicator)), Industrial Development Report 2004, ((tr.: in a report 2004)), the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001, ((tr.: this is probably from the total number of world population, (.), from the population, uh, the)) income, ((tr.: the £1, US £1, it must be £1, so low)) ((laugh)) with income, ((tr.: people with income below £1 per day, in terms of percentage, dropped from 40% in 1981 to 21% in 2001. Here, it occurs to me, though it looks it has dropped, given the economic development speed, and also the commodity prices, prices, the consumption standard has risen. Therefore it seems, though it looks there is a drop, it does not necessarily mean there is a real drop concerning the population. Then,))

S3

As a measure of poverty, this "headline number" has the enormous advantage of seeming simplicity.

As a measure of, ((tr.: all have been improved, here I've made a mistake)), as a measure of [poverty], this "headline number" has the enormous advantage of seeming simplicity, simplicity ((tr.: looks like having link with)) simplified (.) ((tr.: it should have (.) some link, then it says, its criterion)), this headline number, ((tr.: this means the bottom line, this number may bring some, may,)) enormous advantage of seeming, ((tr.: probably it says it may be a very good approach to assess, assess certain food)).

S4

The poverty line --- one US dollar per day (adjusted according to purchasing power parity) --- seems immediately understandable as an indicator of absolute deprivation.

The poverty line --- one US dollar per day, ((tr.: here I feel, it has repeated several times, one, one::: several of this one)) US dollar, adjusted according to purchasing power parity, according to purchasing, adjusted, ((tr.: means making adjustment)), according to, ((tr.: adjusted in line with commodity prices? Then it says)), seems immediately understandable as an indicator of absolute deprivation, deprivation ((tr.: I don't know this word. Then it says this is an)), uh [immediate], ((tr.:

this means now it is widely, I guess it should mean that it is widely considered as an, as an indicator of the)) deprivation.

S5

The calculation of the percentage of people who are poor is similarly straightforward.

(Reads this sentence.)

Calculation, ((tr.: calculation)), percentage of people, ((tr.: using this, uh, this sentence should refer to this indicator, regarding calculating people, how many people are below, this means below, below this indicator, this means they)) are poor, ((tr.: rather poor, it must be.))

S6

This measure of global poverty can therefore easily be used in public debates – even though it implicitly embodies the assumption that the degree, and inequality, of deprivation of the poor is not important.

This measure of global poverty can therefore easily be used in public [debaite] [debaites], ((tr.: what)) [debaites]? even though it [impli-] implicitly embodies the assumption that the degree, (.) and [in-equal-] [inequality], equal is ((tr.: equal)), of deprivation of the poor is not important, even though, ((tr.: the following expresses a concessive, the previous part says even though (.) this, this type, the previous part says this kind of approach is very convenient, very, uh, advantageous, in the)) public, ((tr.: a public debate, whatever, when people, people have a disagreement, as a measurement. But it, it also includes, uh::: it also)), even though ((tr.: this sentence is rather, rather, the grammar is rather difficult! A bit, a bit::: a bit confused)), ((laugh)), it implicitly embodies the assumption, assumption ((tr.: refers to consumption, the::: consumption, consumption level)), [inequality], oh, ((tr.: it refers to the consumption level, but, it may refer to this approach, from the consumption level, and the uh::: and, and their relationship with the)) deprivation of the poor, ((tr.: they are not, not, probably are not reflected very clearly.))

S7

However, is this indicator sufficient for measuring global anti-poverty progress?

However, ((tr.: another concessive)), however, is this indicator sufficient for measuring global anti-poverty progress? Poverty! ((tr.: this poverty, ((laugh))), suddenly it occurs to me that it maybe doesn't mean property? ↓No. It should be something relating to, to money. I must have had faulty comprehension in the previous part, regarding this. Then, it says here, the authors put forward an idea: Is this measurement indicator really reconsidered as a, can it be really considered as a global, hh, globally::: accepted, uh, measurement indicator? Measure this)) anti-poverty progress, ((tr.: then the next paragraph.))

S8

The “less than \$1 per day head count” embodies both a criterion of poverty and a *statistical summarization* of the extent of poverty.

The less, ((tr.: then, this, this passage, the following part should answer this sentence. Then)), the “less than \$1 per day head count” embodies both a criterion of poverty and a *statistical summarization* of the extent of poverty, ((tr.: here italics is used here, the italics indicate this, uh, the italics represents a number, a statistic approach, about what was mentioned earlier)), less than::: ((tr.: the measurement criterion for per day. It covers, uh, covers, the amount, number, it should refer to the statistical approach and)) criterion, ((tr.: this)) criterion ((tr.: should mean principle, or regulation. It should have one here. It must be this, more or less.))

S9

This study argues that it is questionable on both counts --- particularly in rapid growing economies such as China.

((tr.: Then)) this study argues that, this study ((tr.: proposes this idea, the argument in this article)), argues that it is questionable on both counts, questionable, ((tr.: it indicates that this approach is problematic)), questionable on both counts, hh counts, ((tr.: why is there a dash after)) counts? Particularly in rapid, oh, ((tr.: here the previous part should have been segmented. This means, this, this approach has problems, then, especially in those rapidly developing countries, such as China. Mm, this article, this means the following part should mention the specific cases in China. It will focus on China.))

S10

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons.

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between, oh, ((tr.: this sentence is so long! ((laugh))), This study uh, believes the)) poverty line, ((tr.: here it seems, it occurs to me that)) poverty, ((tr.: does it mean poverty, poverty indicator? Poverty!)) Poverty line in China, ((tr.: in China, if, it can't, it can't follow the global, for example, uing the)) US dollar, ((tr.: because criterion in America, because China is a developing country, its domestic situation is different, then, then the context () is also different. Therefore, it must, this line should be drawn, should be)) rela-, relative, ((tr.: relative to the)) median Chinese income, ((tr.: relative to the Chinese's income, then)) it attempts, attempts ((tr.: is to)) contribute to the debate on world poverty outlining the conceptual, ((tr.: conceptual)) links between different indices of poverty, hh, attempts to [conbute], ((tr.: the latter part should have talked about something, uh, relative to the, the indicator, the indicator number. Too long, I don't want to read it)), suggesting a useful graphic, graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the [inter-provincial] ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for [comparizons], ((tr.: this sentence is too long, as for the key points, it should, I think once I understand)) normalised poverty gap ratio, ((tr.: this sentence, the quotation part should mean)), uh, normalised ((tr.: means common, uh, the poverty gap, the)) poverty gap ((tr.: should refer to a proportion of the poverty gap. The key point is to, to uh:: to compare the poverty gap, uh, how to compare? Probably in the previous part it mentioned a)) graphic tool, ((tr.: that is a tool, then to compare)), uh, poverty outcomes, ((tr.: the)), outcomes ((tr.: should mean results, then)) using Chinese micro-data, micro, ((tr.: means micro, mini, mini sized?)) data, ((tr.: mini sized)) data, ((tr.: I don't understand)), to demonstrate, ((tr.: to show)) little is lost in the, (.) li-, little, ranking, ((tr.: a ranking)) of poverty outcomes if poverty intensity, hh, intensity, ((tr.: does it mean seri-, serious? In a word, this sentence is too long, I can't understand all of it. I think I should focus on the)) normalised poverty gap ratio, ((tr.: then, then, it should be helpful to understand the following parts.))

S11

In common language usage, poverty is about deprivation of necessities – the primary dictionary definition of “poverty” is “want of the necessities of life” (The Canadian Oxford Dictionary, 1998, p.1135).

((tr.: Then)), in common language usage, poverty is about deprivation of [necessarities], ((t.: this sentence means, uh, in global)) poverty, poverty ((tr.: is::)) is about ((tr.: something)), the primary dictionary definition of “poverty” is “want of the [necessarities] of life”, ((tr.: so here is a definition of)) poverty, uh, ((tr.: the following is where the dictionary is from,)) poverty ((tr.: means)) “want of the [necessarities] of life”, ((tr.: that is to say, people want)), want of necessities, necessities ((tr.: should mean essentials, necessities, uh, probably the mini-, the mini- in life)), uh:: want of necessities of life, ((tr.: this means life essentials, it refers to a level that people want to achieve, at least with the minimum degree.))

S12

However, it has long been noted that definition of the “necessities of life” must be relative to the norms of a particular society at a specific point in time.

However, ((tr.: however)), it has long been noted that definition of the “necessities of life” must be relative to the norms of a particular society at a specific point in [line], uh, ((tr.: however, this sentence means, this definition must)), must be, ((tr.: what must it be linked with? Must be with a)) particular society, ((tr.: a particular,)) particular society ((tr.: in a period of time, a particular society and a specific point, probably a very point. Then different countries, with different domestic situations, and at different time, the definition varies. It can't be compared by using the same concept.))

S13

Adam Smith's views on this were drafted at a time --- more than 200 years ago – when all nations had very much lower incomes than at present, but their relevance endures: “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people” (Smith, 1776, p.42).

((tr.: Then)) Adam Smith's views, ((tr.: this is a person, this person hasn't been mentioned yet! This person)) views on this were drafted at a time --- more than 20, 200 years ago, more than 200 years ago, ((tr.: what did this person do 200 years ago?)) when all nations had very much lower incomes than at present, but their [relevance], [relevance] ((tr.: means 200 years ago, these, 200 years ago, people's incomes were much lower than at present, then, the following focuses on)), Smith, ((tr.: this means this part is quoted from his book)), “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people”, uh:: ((tr.: in short, the purpose of mentioning this person here should be in support of the previous sentence, I mean the sentence after)) however, ((tr.: it must be. Here the authors are quoting other people's ideas to illustrate their own, uh, quoting other's ideas to demonstrate their own arguments. This passage means different countries, at different times, there is a, there must be a specific criterion. Then this passage, I find difficult to understand. So I can skip it, and won't be bothered. It is ok to know that they are talking about their own ideas. Then the next passage.))

S14

The \$1 per day poverty line is, by contrast, an example of an absolute income criterion of poverty – to be applied in all countries at any time – whose value in local currency units is to be adjusted only to account for estimated variation in commodity prices.

The \$1 per day poverty line is, ((tr.: this sentence talks about the, uh::: one pound, the line of one pound per month)), by contrast, ((tr.: in contrary)), an example of an absolute income [critial] of poverty, whose value in local currency units is to be adjusted only to account for estimated variation in commodity prices, ((tr.: that is to say, this line, it uses an)) example of, ((tr.: income, uh, the)) income, ((tr.: what is used to)) uh, value? ((tr.: It refers to the local currency, (.) currency)), uh, only to account, ((tr.: this means, local, the)) variation in [commodity] prices ((tr.: it probably means it is relating to the commodity prices!) [commodity] ((tr.: means variation of daily commodities, changes of)) estimated variation, ((tr.: so the, the:::)) income ((tr.: has to be adjusted in line with the local, the variation of local commodity prices, then the two dashes in the middle part are used to explain the)) [critial] of poverty, to be applied in all countries at any time, ((tr.: this means this, uh::: this, this sentence means, all the countries, at any time, uh::: this passage, this sentence, is::: an explanation of the)) income [critial] of poverty? ((tr.: The following, the following is))

S15

A variation on the same theme is that poverty should be measured in terms of command over specific commodities – e.g., a minimum food and non-food basket – rather than in terms of a generalized command over resources (such as money income or total consumption expenditure).

A variation on the same theme is that, ((tr.: that is to say)), a variation, poverty should be measured in terms of command over specific [commodity], [common-] commodities, variation, ((tr.: change, change on the same topic, the)), oh, ((tr.: that is to say, here it is like what the person said, here it has the expression “at the same time”, what is it? The)) poverty ((tr.: must be in line with)) command over specific ((tr.: in line with different, different thing to measure::: to)) measure, for example, ((tr.: this helps to understand)), a minimum food and non-food basket, uh, ((tr.: this, this)) specific, ((tr.: this)) for example ((tr.: means the specific)) commodity, ((tr.: it shows)), uh, rather than in terms of a generalized command over resources, ((tr.: when I see)) rather than, ((tr.: I feel, as for understanding this sentence, I don't want to be bothered. I only have to know that the previous part is about)) command over specific commodities. ((tr.: Then))

S16

Absolute poverty lines have often been used in developing countries, often based on the minimum food consumption basket for a specific level of calories (say 2200) and a minimum non-food consumption basket (World Bank, 2005).

Absolute, absolute poverty lines have often been used in developing countries, absolute, ((tr.: the obvious)) poverty line, ((tr.: that is to say, it is used by many developing countries, for example, I am associating with China, which has been mentioned earlier)), China, often based on the

minimum food consumption basket for a specific level of [caro], calories, ((tr.: calorie)), (say 2200), ((tr.: I feel this 2200 is weird, uh, this means this, in developing countries, they are based on a)), uh, food, ((tr.: does this refer to food? Or representing daily essentials? The minimum, uh, consumption of life essentials, consumption status)), and, and a minimum non-food consumption basket, World Bank, ((tr.: World Bank, 2005. This is something from the World Bank, sort of definition. That is to say, in developing countries, it is based on these two)), based on ((tr.: these two things)), a minimum food consumption, ((tr.: and)) a minimum non-food consumption basket.

S17

Reddy and Pogge (2005) are among those who have criticized strongly both the arbitrariness of the initial \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time.

((tr.: Then the following)) Reddy and Pogge, ((tr.: there is another person who has said something. I guess it is also relating to their, this sentence, aims at supporting their)) argument, ((tr.: what does this person say?)) are among those who, ((tr.: this)) who cri-, criticise strongly, criticise ((tr.: should be a, a, proposing a)) critical ((tr.: comment)), strongly both the [arbitry] ((tr.: I don't know this word)), of the initial \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time, ((tr.: reading this sentence, I just feel why is it so difficult! uh, the choices of words are so complicated! And it is written in an implicit way!)) Uh::: have criti-, ((tr.: that is to say)), (.) criticized strongly both the initial, ((tr.: first, primary)), \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time, ((tr.: let me give up this sentence first.))

S18

Moreover, the rapidity of economic growth in recent years in some countries also suggests that an absolute poverty line methodology may be becoming less appropriate in some countries in this changing world.

((tr.: Then)) moreover, ((laugh)) ((tr.: this sentence, the following part should be consistent with the previous (.) arguments, then the)) rapid, rapidity, rapidity, ((tr.: fast)), of economic growth in recent years in some countries also suggests that an absolute poverty line methodology may be becoming less appropriate in some countries in this changing world, uh, ((tr.: that is to say, in some countries with rapid development, for instance, for example)) China, also ((tr.: suggests that an, this)) absolute ((tr.: line, the measurement, the)) poverty line methodology, uh, ((tr.: is becoming worse and worse)), less appropriate in some countries in this changing world.

S19

For example, in Maldives, Thailand, and some regions in China, no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04.

For example, in [Mal-], ((tr.: this means, this)) Thailand, and some region in China, ((tr.: these, these countries)), no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04, ((tr.: that is to say, this is an example, among these countries, the)) poverty line ((tr.: in 2003 and 2004, uh, there was no)) absolute poverty, ((tr.: if an)) absolute, ((tr.: that is to say, if that line, is defined as £1 per day, there would, there would not exist such line, there would not exist this hh)), no absolute poverty, ((tr.: there would not be a, uh, I don't understand this sentence)) for example,

S20

In developed economies it has long been noted that even when the rhetoric of an "absolute" poverty line is used, redefinition over time of a "subsistence" consumption bundle means that the poverty line is implicitly, if periodically, redrawn relative to prevailing norms of consumption (Fisher, 1994; Osberg, 2000).

In developed economies, ((tr.: in those developed countries, definitely they are in a different situation)), it has long been noted that even when the rhetoric, ((tr.: I don't know this word)), of an "absolute" poverty line is used, ((tr.: that is to say, these developed countries, they are very, which developed countries? They are the ones which have long been using this)) absolute poverty line ((tr.: as measurement criterion)), redefine it, ((tr.: they redefine this)) sub-, sub-sis-tence consumption bundle, ((tr.: this means the quoted part)), means that, ((tr.: it is believed that, this means another definition)), the poverty line is implicitly, if periodically, redrawn relative to prevailing norms of consumption, ((tr.: this is from a book written by)) Fisher 1994 ((tr.: and another person. Above all, this means that developed countries have redefined it.))

S21

Economic growth has meant that “absolute” poverty lines have changed, in practice, over time, as consumption items (e.g., indoor plumbing, refrigerators, telephones) which were initially considered non-essential have been reclassified as “necessary”.

((tr.: Then)) economic growth has meant that “absolute”, economic growth, economic growth has meant that, ((tr.: that is to say this should be a, with economic development, this is considered as)), uh, has meant that “absolute” poverty lines have changed, in practice, ((tr.: in reality)), over time, uh, as consumption items, for example, ((tr.: these stuff, such as refrigerators, telephones, these, uh, have already, it may say that the)) absolute poverty line ((tr.: has already changed, probably it is, from the very basic ones in the past to some rather sophisticated (.) ones at present, then)), which were initially considered non-essential have been reclassified as “necessary”, oh,((tr.: that is to say, I have fully understood when reading this sentence. Because of the development, uh, in the wake of development, before, maybe in ancient times, for instance, the basic need was eating, having vegetables and meat every day. This is the bottom line. However, now people would demand TV, refrigerators, and therefore such demands become their)) necessary, ((tr.: so it is different from what used to be. After finishing this part, I feel, when the authors write their own ideas, it is very clear. But when they are quoting other people, I feel it is very difficult to understand. The quotation part from other people, I really think so, uh, is to support their own arguments. They are, probably the first sentence, the last sentence in the first paragraph, after)) however, ((tr.: questions the plausibility of this method. Therefore the following parts emphasise that this approach needs improvement, needs, needs to be further enforced. Then it needs to combine with current society. Then, after I finish reading, the)) title ((tr.: is)) methodology issue and Chinese case study, ((tr.: I think the previous part only mentions part of China. It says though there is such a situation in China, as far as this passage is concerned, if this article has not finished, the following part, I think, probably will provide, uh, China’s specific case study. Discussing about it. Then the last part is a summary, but the authors’ ideas are very obvious. In a word, this methodology has to change completely. This is roughly what it is about.))

Appendix 10 Verbal reports of Case3 at Time1 and Time1

Case3 Time1

Review of Development Economics, 12(1), 367-78,2006

((tr.: Economic Development))

Three Poverties in Urban China

John Knight and Li Shi

Three poverties in urban ↑China, three poverties in ↓urban China

S1

During the period of central planning, and even during the early stages of economic reform, poverty in China was essentially a rural phenomenon.

(Reads this sentence.)

((tr.: During, uh, the time of central, central planning, uh, also, uh, reform, at the beginning of economic reform, uh, (.) poverty in China was a popular phenomenon)), rural, ((what does it mean?))

S2

For instance, calculations based on a national survey in 1988 showed 12.7% of the rural population to be in poverty, but only 2.7% of the urban population.

(Reads this sentence.)

((tr.: For example, a survey showed::: there were 12.7% of)), uh, rural population, uh, ((tr.: were in poverty)), but, ((tr.: in cities, only 2.7% of the population were in poverty.))

S3

For 1995, calculations using a comparable survey and definition gave the proportions as 12.4% and 4.1%, respectively (Riskin and Li, 2001, pp.331, 336; Khan et al., 2001, p.129).

Uh, ((tr.: in 1995)), °calculations using a° (2) ((tr.: in 1995, uh, this number showed there were 12.4, and 4.1 of rural population were in, 12.4 of poverty were in)), uh, rural [popu-popularity], ((tr.: 4.1 were in)) urban population.

S4

Even these differences understate the rural-urban contrast: in real terms the urban poverty line was drawn at a level well above the rural one.

(Reads this sentence.)

((tr.: Generally speaking, uh::: rural areas were in pover-, there were more people in poverty in rural areas than in cities, .hh Uh.))

S5

Urban-dwellers were greatly protected from poverty by their “iron rice bowls” – guaranteed employment in state-owned enterprises operating mini welfare states – and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall” – restrictions on rural-urban migration and settlement (Knight and Song, 1999).

Urban-dwellers were greatly protected from poverty by their “iron rice bowls” – guaranteed employment in state-owned enterprises operating mini welfare states – and they were defended against the potential competition of rural-dwellers by an “invisible Great Wall”, uh, ((tr.: here it mentions urban residents, uh, under the protection of iron rice bowls, were able to, in state-owned enterprises, were able to have iron rice bowls, able to, able to protect their)) mini welfare, .hh and they were defended against, ((tr.: but people in rural areas didn't have)), what is invisible Great Wall? Restrictions on rural-urban migration and settlement, uh::: uh, ((tr.: this means, should be, should be::: the management of family book system both in rural areas and cities, I think. It roughly means this.))

S6

Since 1995, urban poverty has become an important issue.

(Reads this sentence.)

((tr.: Since 1995, urban)) poverty ((tr.: has already become a very important)) issue.

S7

The reform of the loss-making, state-owned enterprises has produced vast redundancies, and a private and self-employment sector has been allowed to develop.

(Reads this sentence.)

((tr.: Uh, since the state-owned enterprises reduced uh, uh, (.) this means uh, dismissed many people, and also many private enterprises, and self-employment started to develop, uh, urban, uh, urban)) poverty problem ((tr.: should be more and more serious.))

S8

Cracks have appeared in the iron rice bowl and in the invisible Great Wall.

(Reads this sentence.)

Uh, cracks, ((tr.: this means iron rice bowl and that)) invisible, ((tr.: the difference from rural areas start to have)) cracks, ((tr.: have fractures)), we use, ((tr.: it should refer to (.) the differences? or)) cracks?

S9

We use a household survey for 1999 to examine this new urban poverty.

(Reads this sentence.)

S10

The proportion of households in poverty rose by 9%, and the “weighted poverty gap” (a measure of extreme poverty) by 89%, over the period 1995-99, even though urban real income per capita increased by 25%.

(Reads this sentence.)

Proportion, ((tr.: one sur-, a survey in 19 (.) 99 indicated)), poverty, ((urban)) poverty ((tr.: rose by 9 points, 9%)), and the “weighted gap” (.) measure (.) ((tr.: I think, uh, (.) most (.)((murmuring the sentence)), from 1995 to 1999, concerning the poorest and::: the richest, the gap, increased, increased, increased by 9%, 89%)), .hh even though the urban real income, ((tr.: despite (2) that urban)), (.) per capita ((tr.: increased by 25%.))

S11

We distinguish three types of poverty and try to explain them in the light of the circumstances that now face urban-dwellers.

(Reads this sentence.)

((tr.: We distinguish three)) poverties, and, (.) uh, ((tr.: plan to explain it in, uh, now, residents, residents, oh, to analyse the circumstances that urban residents face.))

S12

The poverty line identifies the group in poverty.

(Reads this sentence.)

((tr.: The poverty line differentiates, uh, distinguishes, uh, different, poor, (.) people.))

S13

When an absolute poverty line is drawn, the food poverty line and the non-food poverty line are normally defined separately.

(Reads this sentence.)

((tr.: Once a poverty line is drawn, a food poverty line and non-food poverty line will, uh, will be defined.))

S14

The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal adult, and then to evaluate it in terms of money.

The conventional approach to the food poverty line is to select a basket of foods required to meet the minimum standard of nutrition of a normal adult, uh:::, ((tr.: the traditional method to draw a food line is to select, uh, select a series of foods, to guarantee the basic)) nutrition, uh, nutrition, ((tr.: a, a, to guarantee a normal person's, uh::: normal nutrition)), and then to evaluate it in terms

of money, ((tr.: then, convert it into, in terms of money.))

S15

Given the food poverty line and assuming a ratio of the non-food to the food poverty line, the overall poverty line can then be derived straightforwardly.

Given the food poverty line and assuming a ratio of the non-food to the food poverty line, ((tr.: considering food, uh, poverty line, and imagine, uh, non-food, uh, a ratio of the non-food, and, uh, the food poverty, food poverty line)), the overall poverty line can then be derived straightforwardly, ((tr.: the overall poverty line can then be drawn.))

S16

When an absolute poverty line is applied to income, the implicit assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food.

(Reads this sentence.)

((tr.: Does this suggest here to use the Engel Coefficient to display the)) poverty line? When an absolute poverty line is applied to income, the implicit assumption is that an individual with income equal to the poverty line would spend no less than the amount required to buy the selected basket of food and non-food, oh, ((tr.: if income is equal to the)) poverty line, ((tr.: so they will not have any extra money to buy other things.))

S17

In reality, it is often found that some individuals with income above the poverty line have consumption below it (Deaton, 1991).

(Reads this sentence.)

((tr.: But in reality, it is often found that some people, if their income is above the poverty line, their consumption is below this level.))

S18

They are usually defined as non-poor according to the income-based measure, but as poor according to the consumption-based measure.

(Reads this sentence.)

((tr.: They are often defined as)), non-poor, ((tr.: because of this)) measure, but as poor according to the consumption, (.) oh:: ((tr.: here, there are two ways to demonstrate poverty, one is)) income-based measure, ((tr.: the other)) consumption-based measure.

S19

In this paper, we attempt to combine the two approaches in defining poverty.

(Reads this sentence.)

((tr.: Two approaches are used to define poverty.))

S20

The literature on poverty tends to use either income-based and consumption-based poverty concepts and measures.

(Reads this sentence.)

Uh:: ((tr.: the literature pertinent to poverty, uh, to, uh, tends to use)) income-based, ((tr.: and)) consumption-based ((tr.: to explain their concepts, and, (.) and, their concepts and their)) measures.

S21

We develop three concepts: “consumption not income” poverty, “income not consumption” poverty, and “income and consumption” poverty.

(Reads this sentence.)

((tr.: We develop three)) concepts, ((tr.: one is::: consumption not equal to income)), poverty, uh, income not consumption, uh, ((tr.: income not equal to)) consumption poverty, and income and consumption poverty.

S22

We also introduce “overall” poverty, encompassing all three measures.

(Reads this sentence.)

((tr.: We also introduce overall)) poverty, and, ((tr.: include all three approaches.))

S23

We explore why it is that some households fall into one of these three types of poverty, but not into the other two.

(Reads this sentence.)

((tr.: We further explore why some families belong to one of them, but not to the other two types.))

S24

In this way we attempt to explain not only the reasons for poverty in urban China, but also which sorts of poverty have the most adverse effects on economic welfare and which therefore deserve most attention in policy-making.

(Reads this sentence.)

((tr.: In this way, we try to explain, uh, the reasons for, in, rather, in poverty, in rural areas, uh:: also, uh, which type of)) poverty ((tr.: they belong to)), uh:: °°have the most°°, ((tr.: which type of)) poverty, uh, ((tr.: will have a negative influence on social welfare, uh, therefore, is able to)) pay most attention, ((tr.: in that::)) uh, poverty, [policy]-making.

S25

China's process of economic transition from a centrally planned to a market economy is generating new and greater uncertainties relating to various factors that govern economic welfare.

(Reads this sentence.)

°°uh:: new and greater uncertainties°°, (.) uh, ((tr.: China, China from, China's economic transition, China's transition from)) central planning to ((tr.: a market economy, is gradually generating some new and greater uncertainties, uh, relating to, uh, uh, relating to the government eco-, relating to the impact of various factors that relate to the government's economic welfare.))

S26

For instance, employment has become less secure, social security protection has been weakened, and user charges for public services have become important.

(Reads this sentence.)

((tr.: For instance, employees, uh, become, uh, less secure)), secure, social security protection has been weakened, ((tr.: the social:: security system becomes weaker, becomes weaker)), and user charges for public services have become important, uh, ((tr.: charging for public services has become more important.))

S27

These insecurities are likely to impact on the consumption behavior of low-income households.

(Reads this sentence.)

((tr.: These uncertain, these, uh, (.) uncertain)), uh, insecurities, uh, ((tr.: will, should have an impact on low-income people's consumption.))

S28

One hypothesis of the paper is that this leads to a new, or an increasingly important, type of poverty in urban China – “consumption not income” poverty.

(Reads this sentence.)

Uh, ((tr.: one hypothesis in, one hypothesis in this article is, this will lead to a new, uh, uh, more and more important type of)) poverty, ((tr.: in China's, uh, (.) uh, in urban China, that is)), consumption not income poverty.

Case3 Time2

Review of Development Economics, 12(2), 419—441, 2008

How Should We Measure Poverty in a Changing World? Methodological Issues and Chinese Case Study

Lars Osberg and Kuan Xu

S1

One of the primary targets of the UN Millennium Development Goals is the global poverty rate, defined as the proportion of the world's population with income below the US \$1 poverty line.

(Reads this sentence)

Uh:: ((tr.: one of the main)), uh, ((tr.: of the)) UN ((tr.: Millennium)) Development ((tr.: goals, the most primary)) target ((tr.: is, uh, global poverty, pover-, uh, poverty rate, this uses the global, uh:: below, annual, with income below the US \$1, annually, daily, uh, the proportion of the population with income below \$ 1 as, uh, a definition)).

S2

According to UNIDO's Industrial Development Report 2004, the proportion of the world's population with income below US\$1 per day dropped from 40% in 1981 to 21% in 2001.

(Reads this sentence.)

Uh:: ((tr.: according to this report, the global population with income below, below \$1, dropped from 40% in 1981 to 21%, that means, (.) reduced, should it be (.) people's living standard has improved? or simply, (.) simply (.) their income has increased? or their quality of life has become better? hh))

S3

As a measure of poverty, this "headline number" has the enormous advantage of seeming simplicity.

(Reads this sentence.)

((tr.: This (2) this criterion, this)) head, ((tr.: what does this)) headline number ((tr.: mean?)) has the enormous ((tr.: has enormous)) advantages, uh:: ((tr.: making it simple, what is this? What criterion?))

S4

The poverty line --- one US dollar per day (adjusted according to purchasing power parity) -- seems immediately understandable as an indicator of absolute deprivation.

The poverty line --- one US dollar per day (adjusted according to purchasing power parity), ((tr.: that is to say, based on commodity prices (.) it has been already adjusted. That is also very likely, this)) poverty () ((tr.: is, is really, people's living index is really improving)), uh:: seems immediately understandable as an indicator of [absolutely] [descriv-, descriva-tion], uh:: ((tr.: it means very possible, very quickly as an absolute)) deprivation, [deri-] ((tr.: absolute, I don't know what it means, an indicator of something.))

S5

The calculation of the percentage of people who are poor is similarly straightforward.

The [calculator] of the percentage of people, the calculation of the percentage of people who are poor is similarly straightforward, uh, ((tr.: the calculation of the)) percentages ((tr.: of population, of population)) is ((tr.: very simple, uh, simple, and direct)).

S6

This measure of global poverty can therefore easily be used in public debates -- even though it implicitly embodies the assumption that the degree, and inequality, of deprivation of the poor is not important.

(Reads this sentence.)

This measure of global poverty can therefore easily be used, ((tr.: can this)) measure ((tr.: of the global)) poverty ((tr.: be easily used in public areas? What does this mean?)) Even though it implicitly embodies the assumption that the degree, ((tr.: even though it implicitly includes some assumptions, uh, relating to the degree, not, not equality, uh::)) deprivation of the poor is not

important, uh, ((tr.: in spite of its)) assumption, ((tr.: in spite of the degree, unfairness, and also this)) deprivation, ((tr.: together with poverty)), deprivation, ((tr.: I don't think it is important. This sentence mainly covers an assumption, an assumption of the criterion.))

S7

However, is this indicator sufficient for measuring global anti-poverty progress?

(Reads this sentence.)

((tr.: But this::)) uh, measures, measures, ((tr.: the poverty)), (.) ok, no, however, is this indicator, ((tr.: is this, this indicator adequate enough to:: measure the)) global anti-poverty progress?

S8

The “less than \$1 per day head count” embodies both a criterion of poverty and a statistical summarization of the extent of poverty.

(Reads this sentence.)

(tr.: This::: uh, less than \$1 per day, this :::)) head count ((tr.: this calculation has already included a criterion of measuring)) poverty, ((tr.: in addition, uh, statistical, uh, summarization, pertinent to external)) poverty, uh, ((tr.: wrong, pertinent to the ex-)), summarise ((tr.: the extent of)) poverty, ((tr.: what does it mean?))

S9

This study argues that it is questionable on both counts --- particularly in rapid growing economies such as China.

This study argues, ((tr.: the authors' opinions)), this study argues that it is questionable on both counts, on both counts, particularly in rapid growing economies such as China, this study argues that it is questionable on both (.) counts, ((tr.: in two aspects, due to, particularly in::: this means countries with rapid economic growth, like China.))

S10

This study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons.

This study argues, (.) ((tr.: the ar-, (.) the argument of the authors' theory?)) This argues, uh, this study argues that the poverty line in China should be drawn relative to median Chinese income and it attempts to contribute to the debate on world poverty by outlining the conceptual links between different indices of poverty, suggesting a useful graphic tool to compare poverty outcomes and using Chinese micro-data to demonstrate that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as, a, ((tr.: so confused, and so long. Let me read it again)), this study argues that the poverty line in China should be drawn relative to median Chinese income, ((tr.: this)) study, uh:: ((tr.: it means argues, claims, it means poverty line, the poverty line in China, should, uh, should be put, like, uh, then together with)) [me-] uh, ((tr.: the middle, the median)) Chinese income, uh, ((tr.: should be associated)), and it attempts to [contribute] to the debate, ((tr.: it attempts to)), uh, [contribute] to the, ((tr.: this argument)), on, uh world [poverties], uh, ((tr.: the world (.) uh poverty)), by, ((tr.: by means of)) outlining, outlining the conceptual things, uh, ((tr.: by associating, associating their con-, con-, conceptual)), lin-, linking, between differ-, different in-, in-, indices of poverty, suggesting a useful, between different indices, uh, ((tr.: by different)) indices of poverty, ((tr.: with different, uh, indicators, indicators relating to)) poverty, stressing, ((tr.: does this mean indicator?)) Stressing a useful graphic tool to, uh, indicating a useful, uh, a geographically graphic tool)), to, uh, ((tr.: compare the outcomes of)) poverty, ((tr.: and also use China's)) micro, ((tr.: use China's micro)) data to ((tr.: illustrate, hardly any, uh?)) that little is lost in the inter-provincial ranking of poverty outcomes if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons, uh:: ((tr.: this, using this)), using Chinese ((tr.: micro)) data ((tr.: to illustrate, hardly anything (2) is lost, mm, nothing is missing? There is no shortage, in terms of::)) inter, ((tr.: in terms of)) [provincial] rating, rating ((tr.: within the province)), rating poverty outcomes, ((tr.: within the province::, in (.) uh, no, no, very little is lost regarding the inter-provincial)) rating, ((tr.: concerning the)) outcome of poverty, ((tr.: very difficult to understand)), if poverty intensity, also known as the simple “normalized poverty gap ratio”, is used for comparisons, uh, ((tr.: normal poverty)) gap ratio, gap,

((tr.: poverty, void::: poverty)) gap ratio, ((tr.: what does it mean? Uh, it is very difficult to understand this paragraph.))

S11

In common language usage, poverty is about deprivation of necessities – the primary dictionary definition of “poverty” is “want of the necessities of life” (The Canadian Oxford Dictionary, 1998, p.1135).

In common language usage, poverty is about deprivation of [necessity], uh, ((tr.: poverty is about)), uh, deprivation ((tr.: of necessities)), the [pri-, primary] the primary dictionary definition of “poverty” is “want of the necessities of life”, ((tr.: poverty, as for, for, uh, the primary)) dictionary, uh, ((tr.: the explanation in the dictionary is, poverty is want of life essentials)), the Canadian Oxford Dictionary, ((tr.: the Canadian Oxford Dictionary))

S12

However, it has long been noted that definition of the “necessities of life” must be relative to the norms of a particular society at a specific point in time.

(Reads this sentence.)

Uh, ((tr.: this makes sense, regarding necessities, life necessities, uh, must be within a, uh, a norm, in a particular society at a specific time point)).

S13

Adam Smith’s views on this were drafted at a time --- more than 200 years ago – when all nations had very much lower incomes than at present, but their relevance endures: “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people” (Smith, 1776, p.42).

Adam Smith’s views on this were drafted at a time, Adam Smith’s ((tr.: theory)), were drafted at a time, more than [2000] years ago, ((tr.: this idea was proposed 200 years ago)), when all nations had very much lower incomes than, when all nations had very much lower incomes than at present, but their relevance endures: “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people”, ((tr.: I don’t understand this sentence. But this theory, it seems I have learned it, but I can’t remember now)), when all nations had very much lower incomes than at present, but their relevance endures: “Under necessities, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people”, ((tr.: under life necessities, (.) therefore I believe, not only those natural, and, but with those, uh, established (.) the, I don’t understand its meaning)), have rendered necessary to the lowest rank of people, ((tr.: for the poor)) people, ((tr.: it is nature, it is about)) nature, ((tr.: and some most () products were, are they all belonging to)) [nece-] necessary?

S14

The \$1 per day poverty line is, by contrast, an example of an absolute income criterion of poverty – to be applied in all countries at any time – whose value in local currency units is to be adjusted only to account for estimated variation in commodity prices.

The \$1 per day poverty line is, by contrast, an example of an absolute income, uh, [cri-] criterion of poverty, uh::: ((tr.: \$1 per day poverty line is a, in comparison, is a, uh, a criter- of absolute income, relating to uh, an)) example ((tr.: of an absolute income of poverty)), uh, (.) to be applied in all countries at any time, ((tr.: applied by all countries)), whose value (.) in local currency units is to be adjusted only to account for estimated variation in commodity prices, uh, ((tr.: according to the currency units in each country)), whose value, uh, ((tr.: according to (local) currency, to)) value, ((tr.: to, uh, uh, measure)), is to be adjusted, is to be adjusted only to account, uh::: ((tr.: estimated variation in, uh, in commodity prices, uh, estimated (.) variation, uh:::))

S15

A variation on the same theme is that poverty should be measured in terms of command over specific commodities – e.g., a minimum food and non-food basket – rather than in terms of a generalized command over resources (such as money income or total consumption expenditure).

A variation on the same, a variation, variation on the same theme is that poverty should be measured in terms of command over specific commodities, uh, ((tr.: the price adjustment, under the, uh, poverty under this condition, the, poor, poverty, should be, very, be very difficult to build on different commodities, different commodities, for instance)), a minimum food and non-food basket – rather than in terms of a generalized command over resources, uh, ((tr.: minimum)) minimum food, ((tr.: food, and also)) non-food, ((tr.: food and non-food, rather than a general, common, uh, resources, for example)), as money income or total consumption expenditure, ((tr.: rather than money income and also total consumption, consumption expenditure.))

S16

Absolute poverty lines have often been used in developing countries, often based on the minimum food consumption basket for a specific level of calories (say 2200) and a minimum non-food consumption basket (World Bank, 2005).

Absolute poverty lines have often been used in developing countries, often based on the minimum food consumption basket for a specific level of calories, uh, ((tr.: absolute poverty lines have been often applied in developing countries, usually, uh, based on the, the minimum)), uh, food ((tr.: consumption)), basket, uh, uh, ((tr.: a basket, a basket of)) food consum-, ((tr.: a basket of)) food ((tr.: consumption)) for a specific level, ((tr.: in certain, uh, uh, category)), and minimum non-food basket, ((tr.: including non-food, a categorisation of food and non-food)), oh, ((tr.: this isn't categorisation, uh, it is a type of)) consumption.

S: taking steps to repair faulty comprehension (47): in certain, uh, uh, category)), and minimum non-food basket, ((tr.: including non-food, a categorisation of food and non-food)), oh, ((tr.: this isn't categorisation, uh, it is a type of)) consumption.

S17

Reddy and Pogge (2005) are among those who have criticized strongly both the arbitrariness of the initial \$1 per day criterion and the plausibility of purchasing power parity conversions across countries and over time.

Uh, Reddy and Pogge, Reddy and Pogge are among those who have criticized strongly both the arbitrariness of the initial \$1 per day criterion and the plausibility of purchasing power [parties] conversions across countries and over time, uh:: Reddy and Pogge ((tr.: have criticised, criticised strongly this, this, uh, the primitive criterion of \$1 per day, and)), and the plausibility of purchasing power [par-, parities], conversions across and over time, ((tr.: this, I don't understand this sentence very well, it should, but it doesn't matter.))

S18

Moreover, the rapidity of economic growth in recent years in some countries also suggests that an absolute poverty line methodology may be becoming less appropriate in some countries in this changing world.

(Reads this sentence.)

((tr.: But as for economic, uh, development, recent economic development, in some countries, it also indicates that this measurement of absolute poverty line may become inappropriate, in some countries.))

S19

For example, in Maldives, Thailand, and some regions in China, no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04.

((tr.: For example, in)) [Mader-, Malderi-, Malderias], Thailand, Taiwan, oh, ((tr.: Thailand)), and some regions, ((tr.: in some of China's, uh, country, regions)), no absolute poverty exists if an absolute poverty line of \$1 per day were used in 2003-04, uh:: ((tr.:if:: this criterion was used in, this criterion was used in 2003 and 2004, the)) [absolutely] ((tr.: the)) [poverty] poverty ((tr.: didn't exist)).

S20

In developed economies it has long been noted that even when the rhetoric of an "absolute" poverty line is used, redefinition over time of a "subsistence" consumption bundle means that the poverty line is implicitly, if periodically, redrawn relative to prevailing norms of consumption (Fisher, 1994; Osberg, 2000).

In developed economies it has long been noted that even when the [res, risk-, toric] of an “absolute” poverty line is used, ((tr.: in some developed countries, people in the economics domain believe (.) uh, historically, uh, (.) in economics)), ↓it has long been noted that, ((tr.: it has long been noticed, it has long been noticed that the, this, using this criterion)), uh, redefinition over time of a “subsistence” consumption bundle means that the poverty line is implicitly, uh, ((tr.: this criterion (2) () has been redefined, uh, a different (criterion) at a different time, it has been redefined)), of a “subsistence” consumption, subsistence consumption bundle means that, subsistence ((tr.: I don’t know its meaning)), bundle means that the poverty line ((tr.: is too implicit)), if periodically, ((tr.: if regularly, now and then)), redrawn relative to uh, prevailing, pre-, prevailing, prevailing norms of consumption, ((tr.: if the definition is)) redrawn, redrawn relative to norms of consumption, ((tr.: here (.) I also don’t understand properly.))

S21

Economic growth has meant that “absolute” poverty lines have changed, in practice, over time, as consumption items (e.g., indoor plumbing, refrigerators, telephones) which were initially considered non-essential have been reclassified as “necessary”.

Economic growth has meant that “absolute” poverty lines have changed, in practice, over time, as consumption items, ((tr.: then, uh, economic development, uh, uh, has also showed that the absolute::, absolute poverty line has already changed, over time, uh, over)), (.) mm, over time, ((tr.: it means with progress in time)) uh, as consumption items, ((tr.: regarding different)) consum-, uh, ((tr.: consumption products)), indoor plumbing, refrigerators, telephones which were initially considered non-essential have been reclassified as “necessary”, uh, ((tr.: this, over time, what weren’t considered as products, now have been defined as)) necessary, ((tr.: due to progress in time, and economic changes.))

Appendix 11 Questions in Focus Groups

Questions for Focus Group at Time1

1. How have you been taught to read academically in the UK?
(来到英国以后, 在专业阅读方面你们学到了什么?)
2. How do you now approach the materials? (你们现在怎样做阅读?)
3. What do you find most difficult to cope with in your reading now?
(你认为现在阅读中最困难的是什么?)
4. Do you feel learning English in China was adequate preparation for studying here?
(你觉得在中国学的英语能够很好地应付这儿的学习吗?)
5. What are the main differences between your English reading in China and what you are doing now?
(你觉得在中国做英语阅读和在这里做阅读最主要的区别是什么?)
6. What do you find easiest to cope with in your coursework reading?
(你认为现在阅读中最容易的是什么?)
7. What do you think of your reading speed?
(你认为你的阅读速度怎样?)

Questions for Focus Group at Time2

1. How have you been taught to read academically in the UK?
(来到英国以后, 在专业阅读方面你们学到了什么?)
2. How do you now approach the materials? (你们现在怎样做阅读?)
3. What do you find most difficult to cope with in your reading now?
(你认为现在阅读中最困难的是什么?)
4. Do you feel learning English in China was adequate preparation for studying here?
(你觉得在中国学的英语能够很好地应付这儿的学习吗?)
5. What are the main differences between your English reading in China and what you are doing now?
(你觉得在中国做英语阅读和在这里做阅读最主要的区别是什么?)
6. What do you find easiest to cope with in your coursework reading?
(你认为现在阅读中最容易的是什么?)
7. What do you think of your reading speed?
(你认为你的阅读速度怎样?)
8. How has your approach to reading changed over the last six months?
(在过去的六个月里你认为你的阅读方法有什么变化?)