THE DEVELOPMENTAL PATTERN OF LEXICAL CONSULTATION BY CHINESE STUDENTS IN TRANSLATION INTO ENGLISH

Cheng Zeng

A thesis presented to Western Sydney University in fulfilment of the requirements for the degree of Doctor of Philosophy

January, 2016
© Cheng Zeng 2016
Acknowledgements

First of all, I wish to express my deepest gratitude to Dr. Guo Wu, Dr. Ignacio Garcia, Prof. Sandra Hale, Dr. Kenny Wang and Dr. Chong Han for supervising my work. I am profoundly indebted to Dr. Guo Wu for being my supervisor throughout this project; I have benefited enormously from his detailed guidance and encouragement. I would like to extend my heartfelt thanks to Dr. Kenny Wang and Dr. Chong Han for their insightful comments and continuous support through the final phase of my studies. My sincere gratitude also goes to Prof. Sandra Hale and Dr. Ignacio Garcia, who provided me with expert guidance and thought-provoking feedback. Without the help and support from my supervisors, I would not have been able to complete this thesis.

I am grateful to Western Sydney University and my home university, Beijing Foreign Studies University, for providing me this opportunity for academic improvement. I want to thank my colleagues and friends in both Sydney and Beijing—too many to mention their names—who have given me generous support and encouragement. My warmest thanks also go to the translation students at my home university, without whose participation, this thesis would not have existed.

Last, I wish to thank my family for their love and understanding.
Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

___________________________________________________________________________

Cheng Zeng

January, 2016
Table of Contents

Chapter 1 Introduction ........................................................................................................ 1
  1.1 Background of the Study .......................................................................................... 1
  1.2 Aims and Significance of the Research ..................................................................... 6
  1.3 Thesis Outline ......................................................................................................... 11

Chapter 2 Literature Review ............................................................................................. 13
  2.1 Research into Translation Process .......................................................................... 13
    2.1.1 Concepts of Translation Process ....................................................................... 13
    2.1.2 Features of Translation Process Research ....................................................... 14
  2.2 Process- and Product-Oriented Approaches ....................................................... 17
  2.3 Perspectives on Translator’s Lexical Consultation ............................................. 20
    2.3.1 Lexical Consultation Ability as Sub-competence ........................................ 20
    2.3.2 Lexical Consultation as Problem-solving Process ....................................... 23
  2.4 Translation into the Second Language ................................................................... 25
    2.4.1 Inverse Translation as Practical Need ............................................................. 26
    2.4.2 Translation into English within ESL Context ............................................... 30
  2.5 Studies of Lexical Consultation in Translation .................................................... 33
    2.5.1 Research Scope and Purpose ........................................................................... 35
    2.5.2 Research Methods ............................................................................................ 41
      2.5.2.1 Data Collecting Method ........................................................................ 41
      2.5.2.2 Translation Task .................................................................................. 43
      2.5.2.3 Participants ............................................................................................ 48
    2.5.3 Research Findings ............................................................................................. 51
      2.5.3.1 Effect of Lexical Consultation on Translation ........................................ 51
      2.5.3.2 Between-group Differences in Consultation ........................................... 55
      2.5.3.3 Consultation Failures and Their Causes ............................................... 60
  2.6 Summary of Chapter 2 ............................................................................................ 62

Chapter 3 Theoretical Framework ..................................................................................... 65
  3.1 Background Model of Translation Process ............................................................ 66
    3.1.1 Bell’s Model of Translation Process ................................................................ 67
    3.1.2 Adapted Model of Translation with Lexical Consultation ............................... 71
  3.2 Process Model of Lexical Consultation .................................................................. 75
    3.2.1 Hartmann’s Model of Dictionary Consultation ............................................... 76
    3.2.2 Adapted Model of Lexical Consultation in Translation ................................ 77
    3.2.3 Application of Adapted Model of Lexical Consultation ............................... 80
  3.3 Development Model of Second Language Vocabulary ........................................ 89
    3.3.1 Jiang’s Model of L2 Lexical Development ....................................................... 90
    3.3.2 Applicability of L2 Lexical Development Model ........................................... 94
    3.3.3 Adaptation of L2 Lexical Development Model ............................................. 96
  3.4 Summary of Chapter 3 ............................................................................................ 98

Chapter 4 Research Questions and Methodology ............................................................. 100
  4.1 Research Questions and Hypotheses ........................................................................ 100
6.1.3 Language-related Problems................................................................. 195
6.1.4 Summary .......................................................................................... 198
6.2 Consultation Process ............................................................................ 199
  6.2.1 Three Major Consultation Steps ...................................................... 201
    6.2.1.1 Determining Problem Word .................................................. 201
    6.2.1.2 Internal Search ................................................................. 204
    6.2.1.3 Integrating Information...................................................... 208
  6.2.2 Consultation as Integrated Process ................................................. 210
    6.2.2.1 Consultation Need ............................................................. 210
    6.2.2.2 Consultation Behavior ....................................................... 213
    6.2.2.3 Naïve Lexical Assumption ................................................. 216
  6.2.3 Summary .......................................................................................... 218
6.3 Summary of Chapter 6 ........................................................................ 220

Chapter 7 Causes of Unsuccessful Consultation ...................................... 222
7.1 Faulty Moves in Consultation .............................................................. 223
  7.1.1 Identifying Problem Word ............................................................ 224
  7.1.2 Internal Search ............................................................................. 230
  7.1.3 Integrating Information ............................................................... 235
  7.1.4 Summary ....................................................................................... 237
  7.2 Erroneous Lexical Items .................................................................... 238
    7.2.1 Meaning-related Errors ............................................................ 239
    7.2.2 Collocation-related Errors ...................................................... 244
    7.2.3 Language-related Errors .......................................................... 246
  7.2.4 Summary ....................................................................................... 249
7.3 Summary of Chapter 7 ......................................................................... 250

Chapter 8 Conclusion .............................................................................. 252
8.1 Summary of Major Findings ............................................................... 252
8.2 Implications of the Study .................................................................... 256
  8.2.1 Theoretical Implications ............................................................. 256
  8.2.2 Practical Recommendations ....................................................... 258
8.3 Limitations and Suggestions for Further Research ............................. 260

References ............................................................................................... 263

Appendix A Questionnaire and its English Translation ............................ 284
Appendix B NEATI Grading Standards and Its English Translation ......... 286
List of Tables

Table 2.1 Reviewed studies on lexical consultation in translation ........................................ 34
Table 4.1 Grouping, scores and original levels of informants for experiment ............. 116
Table 4.2 E-estimators and test of normality .................................................................. 118
Table 4.3 Mann-Whitney U test statistics ....................................................................... 119
Table 4.4 Grouping, scores and original levels of informants .................................. 120
Table 5.1 Top ten most modified units ........................................................................ 138
Table 5.2 Effects of changes of different categories .................................................. 155
Table 6.1 Between-group differences in types of addressed problems ................... 198
Table 6.2 Types of information sought in consultation .............................................. 205
Table 6.3 Three general types of internal searches ...................................................... 206
Table 6.4 Successful and unsuccessful integration of information .......................... 209
Table 6.5 Top ten most addressed lexical problems ..................................................... 210
Table 7.1 Quantity and percentage of each type of errors by each group ............. 238
Table 7.2 Examples of English word pairs sharing the same Chinese translation ... 241
List of Figures

Figure 3.1 Three models integrated to build the theoretical framework.......................... 65
Figure 3.2 Bell’s (1991, p. 59) model of translation process........................................ 68
Figure 3.3 Adapted model of translation process with lexical consultation............... 73
Figure 3.4 Hartmann’s (2001, p. 91) model of dictionary consultation process......... 76
Figure 3.5 Adapted process model of lexical consultation in translation............... 78
Figure 3.6 Examples of dictionary microstructure.................................................. 84
Figure 3.7 Examples of search results from on-line corpus and search engine........ 85
Figure 3.8 Internal structure of the lexical entry (Jiang, 2000, p. 48)..................... 90
Figure 3.9 Jiang’s (2000, p. 51; 2004b, p. 418) model of L2 lexical development... 91
Figure 3.10 Adapted internal structure of the lexical entry....................................... 97
Figure 5.1 Frequency distribution of changes....................................................... 138
Figure 5.2 Three types of consultation effects achieved by the whole sample..... 139
Figure 5.3 Composition of positive-effect changes made through modification... 141
Figure 5.4 Distribution of different types of positive-effect changes...................... 149
Figure 5.5 Composition of the changed parts in zero-effect changes..................... 157
Figure 5.6 Composition of mendable parts in zero-effect changes......................... 159
Figure 5.7 Composition of zero-effect changes to mendable parts......................... 161
Figure 5.8 Composition of negative-effect changes............................................. 167
Figure 5.9 Total changes made by three groups.................................................. 174
Figure 5.10 Three types of changes made by three groups................................. 175
Figure 6.1 Meaning-related problems addressed by three groups....................... 190
Figure 6.2 Collocation-related problems addressed by three groups..................... 193
Figure 6.3 Language-related problems addressed by three groups....................... 196
Figure 6.4 Problem word entries looked up by three groups............................... 202
Figure 6.5 Lexical searches..................................................................................... 211
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFSU</td>
<td>Beijing Foreign Studies University</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a second language</td>
</tr>
<tr>
<td>ESP</td>
<td>English for special purpose</td>
</tr>
<tr>
<td>FLS</td>
<td>Frequent lexis store</td>
</tr>
<tr>
<td>FSS</td>
<td>Frequent structure store</td>
</tr>
<tr>
<td>HIB</td>
<td>Human information behavior</td>
</tr>
<tr>
<td>L1</td>
<td>First language</td>
</tr>
<tr>
<td>L2</td>
<td>Second language</td>
</tr>
<tr>
<td>LSM</td>
<td>Lexical search mechanism</td>
</tr>
<tr>
<td>NAETI</td>
<td>National Accreditation Examinations for Translators and Interpreters (China)</td>
</tr>
<tr>
<td>PDA</td>
<td>Personal digital assistant</td>
</tr>
<tr>
<td>SEIS</td>
<td>School of English and International Studies</td>
</tr>
<tr>
<td>ST</td>
<td>Source text</td>
</tr>
<tr>
<td>TAP</td>
<td>Think-aloud protocol</td>
</tr>
<tr>
<td>TL</td>
<td>Target language</td>
</tr>
<tr>
<td>TPR</td>
<td>Translation process research</td>
</tr>
<tr>
<td>TT</td>
<td>Target text</td>
</tr>
<tr>
<td>TT1</td>
<td>Translated text one</td>
</tr>
<tr>
<td>TT2</td>
<td>Translated text two</td>
</tr>
</tbody>
</table>
Abstract

This empirical study looks into Chinese students’ lexical consultation in translation into English from a developmental perspective. It aims to examine the effect of lexical consultation on translation at different levels of competence, the characteristics of lexical consultation at different levels, and the causes of unsuccessful consultation.

Drawing from translation research, lexicography and studies of English as a second language, an integrated theoretical framework was established to explore the consultation process and results. The framework combines a background model of translation process that shows the position of lexical consultation in translation, a descriptive model of lexical consultation that outlines the major lookup steps, and an analytical model of second language (L2) lexical development to account for the translator’s use of lexical items extracted from reference sources. Besides, a multi-method approach was adopted to collect and analyze data. To examine the consultation effect, three groups of thirty translation students, representing the novice, intermediate and advanced levels, were asked to do a translation task first without and then with lexical consultation so that they produced two translated texts. The two versions were contrasted to find out the lookup-induced changes, which were classified into positive-, negative- or zero-effect changes. A detailed analysis was conducted on the three types of changes according to a model of the internal structure of the lexical entry made up of four sections, namely, semantics, syntax, morphology and orthography. To characterize lexical consultation at different levels, differences were first identified among the three groups in the types of lexical problems addressed. Then, another fifteen participants, with five representing each of the three levels, were observed when completing the same translation task; their consultation process and results were analyzed to find out the between-group differences in the three major lookup steps, i.e., determining problem word, internal search and integrating information. To discover the causes of failed consultation, the faulty lookup moves were identified, and the lookup-induced lexical errors were scrutinized to detect the missed property in the four sections of the internal structure of the entry.

Results showed that lexical consultation produced a net positive effect on translation, which was achieved largely through improvement in expressing source-text meaning.
and marginally through improvement in collocation and language quality. This “meaning-dominated” distribution was found a recurrent pattern in zero and negative effects as well as in the lexical problems addressed, solved and left unsolved. With increasing competence, a decline was found in lookup-induced modification, zero-effect consultation, failed attempt to correct lexical errors, and failure rate of consultation. The study of between-level differences revealed that while there was a gradual decrease in the number of meaning- and language-related problems from the novice to the advanced level, the proportion of meaning- and collocation-related problems remained similar among the three groups. The observation of the lookup process found that informants from higher levels displayed more desirable consultation features, such as perseverance in lexical search, greater research depth and larger working units, whereas those from lower levels had more naïve lexical assumptions, such as one-to-one lexical correspondence and overgeneralization of the restricted and conditional cross-language equivalence. In the study of the causes of failed consultation, faulty moves were detected in each of the main lookup steps, such as selecting inappropriate problem words, only seeking literal correspondence, misusing appropriate items, etc. Behind such moves was the neglect of certain properties of the lexical item, reflected in some empty space in the internal structure of the entry. Two major contributory factors to consultation failures were the duplication of certain properties from the Chinese translation equivalent to the English item, and the misunderstanding of the original instancial or metaphorical meaning.

The above results defined the effect of lexical lookup on translation, described the development of the translator’s consultation, and identified the causes of consultation failures. With these findings, the present research enhanced the understanding of lexical consultation in translation, contributing to the study of translation process and of development of translation competence. This project also made contribution to translation training by proposing some practical recommendations concerning how to improve the learners’ lexical consultation ability. Moreover, combining three models from different disciplines, this thesis established a theoretical framework for studying the translator’s lexical consultation. While highlighting the translation activity as the context of lexical consultation, this new framework provides effective instrument to describe and analyze the lookup process as well as the consultation results, thus enabling more systematic exploration into lexical consultation in translation.
Chapter 1

Introduction

1.1 Background of the Study

Since the mid-1980s when translation scholars begun systematic empirical exploration into the translation process (Jääskeläinen, 2011), the translator’s lexical consultation, mainly in the form of dictionary lookup before the new century, has become one of the topics that attract considerable research attention. While many studies have touched upon the lookup behavior as a perceptible part of the translation process (e.g., Krings, 1986; Jääskeläinen, 1990; Fraser, 1994; Barbose & Neiva, 2003; PACTE, 2009; Wang & Xu, 2012), some have focused on the translator’s lexical consultation (e.g., Meyer, 1988; Livbjerg & Mees, 1999; House, 2000; Nord, 2002; Raido, 2011a; Zheng, 2014). Apart from translation process researchers, lexicography scholars have also looked into the translator’s consultation act in their dictionary-user studies. A few projects included translation as one of the tasks to prompt dictionary consultation (e.g., Atkin & Varantola, 1997, 1998; Bogaards, 1998; Mackintosh 1998), but a larger number used translation as the only lookup-inducing activity (e.g., Bogaards, 1991; Matin-Rutledge, 1997; Varantola, 1998; Raudaskoski, 2002; Frankenberg-Garcia, 2005; Laufer & Levitzy-Aviad, 2008; Law, 2009). Although the two groups of scholars have different research purposes, i.e., to understand the translation process versus to know dictionary users’ reference needs and behaviors, their shared interest in lexical consultation in translation indicates a consensus on the significance of this research topic.

In fact, the importance of lexical consultation to translation has long been recognized by many scholars. Such importance was reflected in the wide acknowledgement of
the worth of dictionaries to translators when other sources were not available or so popular. Newmark (1998) took dictionaries as translators’ main tool, and Roberts (1997) believed that their significance to translators was self-evident. Results of empirical studies on translation process have also proved the necessity of lexical consultation in translation. It was reported that consultation to various reference sources, including dictionaries, could take as much as fifty percent of the time spent on the translation task (Varantola, 1998). According to Nord’s (2002) two-hour observation of thirteen professional translators working at home or at the office, reference works were consulted at an average rate of approximately once every three minutes for general texts and once every two minutes for specialized texts. In a more recent study of nineteen professional translators, a “surprising reliance was found on dictionaries as their primary sources” to satisfy “the need for information, tenses, plural forms, and part-of-speech information in addition to translations and examples of usage” (White, Matteson & Abels, 2008, p. 587).

It is true that lexical consultation tends to decrease with increasing professionality (Tirkkonen-Condit, 1987), but evidence has shown that even high-end professional translators may still have the need to look up for lexical information sometimes. A recent article published on the website of British Broadcasting Company describes “the greatest mistranslations” in history (Macdonald, 2015), most of which are lexical errors. For example, the Italian word canali, meaning channels, was rendered as canals, which led to a longtime belief that there were intelligent lifeforms on Mars; and due to the confusion over the French word demander (literally, to ask), the opening sentence of a message sent the White House “le gouvernement français demande” was translated into “the French government demands”, which caused considerable tension during the French-American negotiation in 1830. Such translation problems seem to be solvable through lexical consultation without involving much lookup skill. In this sense, the above-cited blunders may be regarded as negative examples that give a lesson on the importance of lexical consultation in translation.
Owing to the rapid development of information technology, various electronic and online dictionaries are now available in many languages, and on-line corpora and web search engines have been used as convenient tools for seeking lexical information. It is superfluous to say that the time has gone when the paper dictionaries functioned as the primary non-personal source for lexical consultation. The currently-used vocabulary reference sources comprise the following four types: (1) traditional paper dictionaries, (2) electronic dictionaries, (3) on-line dictionaries and corpora, and (4) web search engines used for lexical consultation. Paper dictionaries include any printed monolingual or bilingual dictionaries while electronic ones comprise small handheld computers with integrated dictionaries and dictionary programs installed on devices such as desktop computers, laptops, PDA (personal digital assistant) or smartphones. On-line dictionaries and corpora refer to the websites offering on-line searchable service for lexical consultation, such as Oxford Dictionaries at www.oxforddictionaries.com, Linguee editorial dictionary at www.linguee.com and British National Corpus (BNC) at www.natcorp.ox.ac.uk. Web search engines are software systems designed to search for information on the World Wide Web, such as www.google.com and www.baidu.com, which can also be used for lexical consultation, especially for searching frequency of use and collocation examples. The use of these new forms of reference sources has been looked into in some more recent studies (e.g., Al-Jabr, 2008; Ehrensberger-Dow & Massey, 2008; Pasfield-Neofitou, 2009; Raído, 2011a). In this thesis, the term *lexical consultation/reference sources* refers to the four types mentioned above. Resources such as translation software or tools are not included, neither are the application programs for language checking, such as spell or grammar checkers, the use of which has become customary and almost effortless.

As mentioned, the ability to use lexical reference resources for consultation has been studied in both translation and lexicography studies. In translation research, which this thesis belongs to, the ability to is regarded as a component of translation competence with a practical function to solve vocabulary problems. It is labelled as
“documentation skills” (Beeby, 2000, p. 187), or “instrumental sub-competence” (PACTE, 2003, p. 59; 2005, p. 619), or “tools and research competence” (Göpferich, 2009, p. 22). Though differently named, this sub-competence mainly involves operative knowledge (PACTE, 2003) and serves a practical function to fill the translator’s knowledge gaps (Schäffner, 2000). So, lexical consultation ability in translation can be understood as a subordinate translation competence to solve lexical problems through vocabulary consultation. In lexicography studies, however, the consultation ability is often discussed in terms of knowledge about dictionaries and lookup strategies. For instance, Roberts (1996, 1997) stresses on the awareness of the structure of dictionaries; and consultation strategies are proposed to translators for searching multi-word items, better discriminated equivalents and more examples (e.g., Roberts & Martin-Rutledge, 2008). Such knowledge and skills are certainly necessary to successful consultation, especially for an inexperienced user of reference sources, but their importance tends to decline with accumulation of the experience of lexical lookup.

Though sharing a common object of study, lexicography and translation scholars have different research purposes and methodology. The former study the translator’s vocabulary search with a goal to know how dictionaries are actually used (e.g., Bogaards, 1991, 1998; Atkins & Varantola, 1997, 1998; Laufer & Levitzy-Aviad, 2006), and the latter mainly want to know what happens during the translation process, in which lexical consultation usually occurs (e.g., Krings, 1986; Jääskeläinen, 1990; Fraser, 1999; Barbosa & Neiva, 2003; Ehrensberger-Dow & Perrin, 2009; Göpferich, 2010; Wang & Xu, 2012). While the lexicography scholars usually used dictionary user profiling and dictionary use information sheets to collect data, most translation scholars adopted some method of introspection, especially the think-aloud protocol (TAP). In spite of the above differences, both groups touched upon translators’ lexical lookups and looked into various aspects of consultation, such as the reference needs, habits and strategies; preferences and
attitudes; satisfaction and success rates; factors affecting lexical consultation and the effect of lookups on translation.

Thanks to the efforts made by the two groups of scholars, the past thirty years have seen a growing body of literature on empirical studies of this subject, and much has been known about lexical consultation in translation. For example, it was confirmed that vocabulary lookups have a generally positive effect on the quality of the translated text (e.g., Li, 1998; Livbjerg & Mees, 1999, 2003; Laufer & Levitzy-Aviad, 2006; Raído, 2011a); a sharp contrast was found between professional and student translators in their lexical consultation (e.g., Krings, 1988; Englund Dimitrova & Jonasson, 1999; Ronowicz, Hehir, Kaimi, Kojima & Lee, 2005; Göpferich, 2010; Zheng, 2014); and the failed lookups were classified according to word types and attributed to the shortcomings of the reference works or the translator’s undesirable consultation moves and features (e.g., Meyer, 1988; Kussmaul, 1995; Atkins & Varantola, 1997; Raudaskoski, 2002; Livbjerg & Mees, 2003). These findings have not only advanced our understanding about lexical consultation in translation but also provided enlightenment to translation training.

On the other hand, the studies also have produced valuable examples in research design and methodology. For instance, the use of various data collecting methods has displayed their advantages and disadvantages as well as their applicability so that more informed choice can be made in future studies.

However, there are also some major inadequacies in the previous research. They are reflected in the following four aspects: (1) the lack of concentrated research effort, (2) the absence of detailed and systematic answers to some basic questions, (3) the want of exploration into the development of the translator’s consultation ability, and (4) the need to have a larger sample size. First, as most lexicography researchers aimed to produce findings for making or improving dictionaries while many translation scholars intended to describe the whole process of translation, there were only a dozen projects that can be said to have focused on the translator’s lexical lookups and given due weight to both consultation and translation. Second, an
in-depth description is still lacking of the effect of lexical consultation on translation and causes of lookup failures. Knowing about the generally positive effect of lexical consultation, we are still unaware of what makes up that effect; and since the effect is not hundred-per-cent positive, we wonder in what circumstances consultation may bring no change or even harm to the quality of translation. With regard to the causes of failed lookups, the existing findings seem to be fragmentary and anecdotal. This might be due to the limited the amount of data about consultation failures; and moreover, the absence of a theoretical framework made the analysis of lookup-induced errors look fortuitous and arbitrary. Third, the findings of previous studies showed that professional translators make consultation in a more strategic and efficient way than students, but we are unaware of the steps a novice can take in order to achieve professionalism. Aware of the distance in between the translation professionals and beginners, we still need to know how to approach the finishing line from the starting point. Last, most of the previous studies suffered a small sample size, which limited the generalizability of their findings. This problem was more serious with the projects investigating stratified samples. In fact, all the contrastive translation studies reviewed in this thesis had no more than twelve informants per group. Such a group size was too far short of the minimum of thirty (Gay, Mills & Airasian, 2012) to allow the test of the statistical significance of any between-group differences, thus restricting the generalizability of the research results.

1.2 Aims and Significance of the Research

The importance of lexical consultation to translators makes it a meaningful research topic in translation studies, and previous research on lexical consultation has provided valuable experience to and suggested the need for further exploration in this area. Drawing on the existing studies, this empirical project explores Chinese students’ lexical consultation in translation into English from a developmental perspective. The thesis is intended to tackle three questions: (1) what constitute the effect of lexical consultation on translation at different levels of competence, (2)
what characteristics there are of lexical consultation at different levels, and (3) what causes unsuccessful consultation.

To answer the first question, three groups of informants representing three levels of competence are asked to do a translation task first without and then with lexical consultation so that they produce two versions—translated text one (TT1) and translated text two (TT2). The two texts are compared to find out the lookup-induced changes, which are classified according to the nature of the effect they brings about to the TT2, which can be positive, negative or zero. These changes causing different effects are further analyzed according to the model of the internal structure of the lexical entry adapted from Levelt (1989) and Jiang (2000) so as to present a detailed and systematic description of the effect of lexical consultation on translation. To answer the second question about the consultation features at different levels of competence, an analysis is first conducted on the between-group differences in the types of addressed lexical problems by using Jiang’s (2000, 2004) theory of L2 (the second language) lexical development. Then, the observed informants’ lookup process is examined to discern the features of the three level groups in the main consultation phases. The study of the above two aspects is expected to reveal some trends or patterns of development from the lower to higher levels of competence. Last, to answer the question about the causes of unsuccessful consultation, an examination is made of both the consultation-induced errors and faulty lookup moves, in which the process and results of lexical search are discussed in relation to each other. By adopting this integrative approach, it is hoped that the contributory factors to lookup failures can be identified and diagnosed, and preventive measures can be proposed.

This thesis is a concentrated effort to investigate lexical consultation in translation, featuring detailed exploration into the object of study and a larger sample size. It focuses on some of the basic questions about the translator’s vocabulary search that still remain unanswered. More than merely reporting the relevant numbers and percentages, this study intends to conduct an in-depth inquiry and detailed analyses
of the investigated aspects. For instance, apart from classifying the lookup-induced changes according to their practical effects, effort is also made in exploring the exact makeup of each type of effect achieved by the whole sample and by different level groups. With regard to the sample size, over one hundred translation students are recruited as informants, making up over three fourths of the population studied. The large sample size can not only produce sufficient data but also allow the test of the statistical significance when making between-group comparisons.

Another feature of this study is its developmental perspective. Previous studies have showed that there exists a sharp contrast in lexical consultation between translation students and professionals—the latter use consultation sources more skillfully and efficiently than the former. Since no one can attain professionalism overnight, it can be assumed that there must be a maturing process in lexical consultation from the novice to the professional level. So the general hypothesis of this empirical study is that there is a developmental pathway for the translator to learn how to solve lexical problems through consultation. As few scholars have looked into the maturing process of this ability in a systematic way, the developmental perspective of the present project is hoped to fill the gap in previous research.

Moreover, the current project employs a multi-method research approach in both data collection and analysis. The major data-eliciting apparatuses, i.e., translation experiment and process observation, are supplemented with other tools such as retrospective interview, screen recording and background questionnaire. Qualitative and quantitative methods are combined when addressing each of the research questions. Besides, both process- and product-oriented approaches are made use of in describing and analyzing the translator’s lexical lookups so that consultation process and results are studied in integrated way. Such a multi-method design enables data and methodological triangulation and allows mutual complementation of different procedures, thus reducing the risk of bias caused by using a single method and increasing reliability of the research results.

By examining the translator’s lexical consultation, this thesis is expected to
contribute to the studies of translation competence. As mentioned above, lexical consultation ability is recognized as a sub-competence of translation. A probe into the effect and process of the lexical consultation can better our understanding of the function and mechanism of this sub-competence, and the description of the between-level differences can inform us of the evolution of the lexical consultation ability from the novice to professional level.

This study also aims to provide practical enlightenments to translation teaching. The information about the developmental pattern of students’ reference ability and the causes of lookup failures will offer a basis for deciding on what should be taught to enable better use of reference sources in translation, thus making the training more purposeful. Besides, as this thesis places inverse translation into English and translation training in the context of ESL (English as a second language) learning, translation students’ lexical consultation is regarded a process of L2 lexical acquisition. Findings about such a vocabulary learning process in translation are useful not only to translation trainers but also to ESL teachers.

Furthermore, the present study is hoped to make theoretical and methodological contributions to the studies of lexical consultation in translation. It sets up an integrated theoretical framework that draws from translation studies, lexicography and ESL learning. Bell’s (1991) model of translation process is adopted as the background model to contextualize the translator’s lexical consultation; Hartmann’s (2001) model of the consultation process is used to serve as the descriptive model for studying the major lookup steps; and Jiang’s (2000) model of L2 lexical development is adapted as an analytical model for examining the lookup results as well as for describing the development of lexical consultation ability. Integrating these models into a coherent framework builds up a solid theoretical basis for empirical studies of lexical consultation in translation, and provides useful instrument for depicting and analyzing the consultation process and results in a systematic way.
This research on the translator’s lexical consultation is of great significance in China, where this empirical study is conducted. Lexical consultation has always been essential to Chinese translators and ESL learners. This can be seen from the high status enjoyed by dictionaries in the country, which are compared to teachers who cannot talk—the most reliable alternative to a real teacher (Chi, 2002). An on-line survey of 14,600 Chinese interpreters and translators showed that over one third of the participants resorted to various dictionaries when encountering difficulties in their work (Trans Information Technology Co. Ltd & Science and Technology Translators’ Association of Chinese Academy of Science, 2007). Considering that 19% of the informants were interpreters, the proportion of translators making lexical consultation could be higher. For Chinese students of English or translation, use of lexical reference sources is a must in their studies. The national curriculum for English majors requires skillful use of various lexical reference works upon graduation (Steering Committee of Foreign Languages Teaching for Tertiary Education, 2000). In reality, the students are using various paper and electronic sources for vocabulary search (Deng, 2006; Shi & Chen, 2007; Yuan & Hua, 2014).

Among other factors such as the ESL level and distance between the language pair, the emphasis and reliance on reference sources may have a lot to do with the homogeneity and mono-linguistic environment of the Chinese society. It is pointed out that one ‘can walk for 3,000 miles in China without finding a native speaker of English’ (Anderman & Rogers, 2006, p. 27). Given the importance of lexical consultation to translation practitioners and students, a study in this area is of practical significance in the Chinese context.

As mentioned above, the present study deals with inverse translation, that is, Chinese students’ translation into English as a second language. Apart from the researcher’s interest, this choice of translation direction also has connection with the reality of translation teaching, the increasing demand for inverse translators and the research need of translation studies in China. Since the late 1970s when English departments throughout the country began to offer translation courses, inverse
translation has been an indispensable part of translation teaching (Mu, 2001). In the national curriculum for English majors, Chinese-English translation is listed as a compulsory course, with detailed requirements specified (Steering Committee of Foreign Languages Teaching for Tertiary Education, 2000, p. 10). In addition, due to the country’s ever-increasing international exchanges and the scarcity of foreign native speakers able to translate from Chinese, China is now in need of a large number of qualified translators who can translate into English (Huang, 2005, 2008, 2011). Such a shortage is reflected in the statistics of the country’s publication of translated works. The number of items translated from Chinese into English only amounts to one fourteenth of those translated from the opposite direction every year (Li, 2007). A similar imbalance can be found in the translation studies and it has been urged that more efforts be made to strengthen the research and teaching of inverse translation in the country (Huang, 2005). Against this background, this thesis is expected to contribute to China’s inverse translation training and help make some change to the disproportion between direct and inverse translation studies.

1.3 Thesis Outline

This thesis is made up of eight chapters. Following this introduction, Chapter 2 provides a review of the literature concerning lexical consultation in translation. First, an overview is made of the non-research literature that underpins or informs the present thesis. Then, research projects on translator’s lexical lookup are examined in terms of their research scope and purpose, methodology and findings. The strengths and weaknesses are summarized and evaluated so as to gain inspiration from them as well as to establish the need for conducting the present study.

Chapter 3 describes the theoretical framework adopted in this study. This part begins with an account of Bell’s (1991) model of translation process and the adaptations made to it to suit the purpose of this thesis. Next, Hartmann’s (2001) model of dictionary consultation process is incorporated into the model of translation process.
and modified to include the newly-emerged lexical consultation sources and to highlight the research focuses of this study. Last, the chapter presents a discussion of Jiang’s (2000) model of lexical development in L2, its applicability to this project and the modifications made to it, followed by the justification of combining the three models into the theoretical framework.

Chapter 4 first proposes the research questions and the corresponding hypotheses that break them down into more specific and workable sub-issues. The theoretical motivations and assumptions behind them are detailed, together with relevant findings of previous studies that support them. After that, the chapter depicts the methodological design implemented to test the research hypotheses empirically, and introduces the methods used for data analysis.

Chapters 5, 6 and 7 discuss the results of this study, with each chapter addressing one research question. Chapter 5 presents the findings concerning the effect of lexical consultation on translation. A description is first made of the general effect of consultation by the whole sample. Then the between-group differences in consultation effect are analyzed and summarized in the second part. Chapter 6 is an account of the characteristics of lexical consultation at different level of competence. Between-group differences are identified in the types of the lexical problems addressed through lookups, and the consultation process is looked into to find out the behavioral features of each group in the major lookup phases. Chapter 7 focuses on the findings about the causes of unsuccessful consultation from two perspectives. The faulty moves in the lookup process are first discerned; after that, the consultation-induced lexical errors are examined in relation to consultation behaviors so as to offer a clear picture of how a lexical error was made.

Finally, the last chapter concludes with a summary of the major research results, the contributions to the understanding of translator’s lexical consultation and to the research on translation process and competence, as well as the pedagogical significance of the findings and their theoretical and methodological implications. The limitations of this thesis and suggestions for further research are also discussed.
Chapter 2

Literature Review

This chapter starts with a brief overview of translation process research (TPR) in Section 2.1 so as to provide some information about the broad context this present study of translators’ lexical consultation is situated in. Section 2.2 looks into two different approaches to translation studies. Section 2.3 discusses the relevant theoretical perspectives on lexical consultation in translation that inform the present thesis. Section 2.4 deals with inverse translation as a practical need and this kind of translation within the framework of ESL learning, as well as the implications of such a framework. Section 2.5 presents a review of the previous studies on lexical consultation in translation, examining their research scope and aims, methodology and findings.

2.1 Research into Translation Process

This section outlines the general background for this thesis. Section 2.1.1 is a brief discussion on the concepts of translation process. Then, Section 2.1.2 sums up the features of translation process research, namely, its steady progress, interdisciplinary nature and pedagogical interest, which have an important bearing on the present study.

2.1.1 Concepts of Translation Process

The term translation process is understood in different ways in translation research. House (2000) defines it as “any number of operations undertaken by a translator when she is converting (parts of) a source text into a translation text” (p. 150). However, a broader perspective is taken by other scholars. Séguinot (1989b) thinks
that translation process has two meanings; the first refers to the progressive, physical production of a translated text and the second to the conscious and unconscious mental operations going on during translation (p. iii). Similarly, Malmkjaer (2000) believes that the term translation process “may be used to designate a variety of phenomena, from the cognitive processes activated during translation” to “the more ‘physical’ process which begins when a client contacts a translation bureau and ends when that person declares satisfaction with the product produced as the final result of the initial inquiry” (p. 163). Zabalbeascoa (2000, p. 118) recommends that the term “process” be used in both a wide and a narrow sense. Broadly speaking, the term can refer to the stages from planning the translation project and selecting the source text to getting the target text from the translator, publishing it and getting it to the target user; in the narrow sense, translation process can be used to mean the translator’s linguistic and mental operations from the analysis of the source text to the finding of “satisfactory renderings for individual aspects and items of a ST (source text) in the TT (target text) and for the text as whole”, and it is the translation process thus defined that provides the “context for psycholinguistic studies and cognitive notions of process” (ibid.).

As a matter of fact, in many TPR studies, the term translation process is used its narrow sense (Raído, 2011a). Jääskeläinen (2002) suggests that for practical reasons the term process be used in such a narrow sense in research settings. According to her, “the process begins when the researcher gives a source text… to the subject” and it ends “when the translator hands in his or her translation— to the client or to the researcher” (p. 108). This thesis also adopts the narrow-sense definition of the term, focusing on the consultation part of the translation process.

### 2.1.2 Features of Translation Process Research

The beginning of empirical research of translation process was marked by “the publication of four articles reporting on TAP projects” in 1986, namely Dechert and Sandrock (1986), Gerloff (1986), Krings (1986), and Lörscher (1986) (Jääskeläinen,
After thirty years’ development, the process research is believed to have “definitely come of age” (Alves, 2015, p. 17), with an ever-growing number of studies, newly-introduced methodologies, more refined research designs, and more narrowly-focused research questions and hypotheses (Jääskeläinen, 2011). In addition, attempts have also been made every now and then to systematically review the existing body of research (e.g., Fraser, 1996; Bernardini, 2001; Tirkkonen-Condit, 2002; Orozco, 2003; Göpferich & Jääskeläinen, 2009; Jääskeläinen, 2002, 2011). Looking back at the growth of TPR, we can see the following three salient features.

First, a steady progress can be clearly observed from the development of TPR. According to Jääskeläinen (2011), the three decades’ history can be roughly divided into four stages, each bearing some obvious characteristics. The first-generation studies, conducted mainly in the second half of the 1980s, are characterized by their pioneering use of TAP as the data eliciting method and exploration of the question as to what happens in translation process (e.g., Tikkonen-Condit, 1987; Gerloff, 1988; Séguinot, 1989a; Jääskeläinen, 1990; besides the four pioneering studies mentioned above). In spite of their discussion of variables such as problem-solving, dictionary consultation, time consumption, etc., their research aims tended to be very general. It was not until the emergence of the second-generation studies that the research questions and hypotheses were more narrowly defined and specifically focused (Raído, 2011a), with the researched topics ranging from the rendering of certain language elements to comprehension process and time pressure (e.g., Tikkonen-Condit, 1993; Dancette, 1997; Jensen, 1999). The third-generation refers to those studies with methodologically more refined research design featuring triangulation and statistical analysis (e.g., Dragsted, 2005; Ehrensberger-Dow & Perrin, 2009; Raído, 2011a) while the fourth generation is represented by large-scale projects such as TRAP (Hansen, 2002), PACTE (2005), and TransComp (Göpferich, 2009). It should be noted that the four generations overlap since they are not divided strictly according to chronological order (Jääskeläinen, 2011). However, such
division does show us the progressive developments in this field of study. The advancement is reflected not only in the growing body of literature and more narrowly defined research questions, but also in the newly-introduced and developed methodologies and more refined research design (ibid.).

In spite of such advances, there are also some characteristics that seem to be intrinsic to translation process studies. One of them is its interdisciplinary nature, a feature TPR was born with. The pioneering works marking the beginning of process research all adopted Ericsson and Simon’s (1984) think-aloud protocol (TAP) paradigm developed in psychology. This borrowed method of data elicitation gave impetus to the newly-opened research area and can be seen as the “first highly visible contribution of psychology” to the research into translation process (Ferreira, Schwieter & Gile, 2015, p. 5). When summarizing the history of TRP, Jääskeläinen (2000, 2011) points out that although the research questions and hypotheses have stemmed from the field of translation, the methods of data elicitation and analysis as well the theoretical frameworks come from a variety of fields, including linguistics, cognitive psychology and writing research. This view is shared by other scholars. Alves (2015) believes that cognitive science, expertise studies and psycholinguistics are the three major disciplines that have a direct influence on the foundation of TRP while Martín (2010) and O’Brien (2013) add linguistics, neuroscience, and psychology to the list. Moreover, it is anticipated that TPR still needs to borrow extensively from other disciplines in order to build its own tradition of empirical-experimental design (Alves & Albir, 2010). Alves (2015) holds that there is more to learn from cognitive science, expertise studies and psycholinguistics in order for TRP to become a field of research in its own right. Hansen (2010) suggests taking approaches from psychology and the social sciences that can provide translation studies with ideas, issues, attitudes and research methods. So it can be said that in the foreseeable future, interdisciplinarity will remain an essential attribute of TPR.

The pursuit of pedagogical purpose is another tradition of research on translation
process. Studying the process contributes to improving translator training as well as developing better theories and models of translation (Jääskeläinen, 2011). Actually, many of the early process researchers in the 1980s not only aimed to increase our knowledge about translation processes, but also pursued a pedagogical purpose, which can be seen from most of the TAP studies collected in House and Blum-Kulka (1986) and Færch and Kasper (1987) (House, 2000). Such a pedagogical interest was circumstantially attributed to the researchers’ another identity as translation teachers and their convenient access to voluntary student informants (Tirkkonen-Condit, 2002). However, a more convincing explanation seems to lie in the research questions of those studies. For instance, if they are about the problems and strategies in translation process, the findings should have the potential to be made use of pedagogically (Lösch, 1992) and to form the basis for translation instruction (Kussmaul & Tirkkonen-Condit, 1995). The same can be said about the process studies that probe into translation competence and acquisition of it, of which the implications for translation training are self-evident. Two of the projects representative of the fourth-generation process research, namely, PACTE (2005) and TransComp (Göpferich, 2009), belong to this category though they do not explicitly express pedagogical interest. Other projects of large scale, such as TRAP (Hansen, 2010) and ZHAW (Ehrensberger-Dow & Perrin, 2009), clearly state that their ultimate objective is to improve the quality of translation training and education. As can been seen, serving pedagogical purpose is a strong tradition running through the history of TPR, which is also carried forward in the present study.

2.2 Process- and Product-Oriented Approaches

The rise of empirical studies on translation process was accompanied with the criticisms of studying translation as a product resulting from a translation process, which had been a major concern of translation researchers prior to the 1980s (Lörscher, 2005). According to Holmes (1988), the product-oriented approach focuses on the existing translations while the process-oriented approach is concerned with finding out what happens in the translator’s mind. In the product-oriented
studies, meticulous contrastive analyses of the source and target texts produced hypotheses about the equivalence relation between them. Such research efforts often led to more ambitious hypotheses about what happened ‘in between’ the two texts so to speak, i.e. what the translational process was like that linked source text and target text, and many different models of translation were set up, often considered to be reflections of a translator’s competence (House, 2000, pp. 149-150).

These hypotheses, however, were actually not based on empirical investigations into the translator’s mind. More straightforward criticisms come from other scholars (ibid.). Lörscher (2005) accuses the models of equivalence built on the basis of contrastive product-oriented research of being “highly abstract”, often “prescriptive in nature and of very limited use for the practical translator” (p. 597). Bernardini (1999, p. 179) further points out that studying translation from a merely product-oriented perspective “provides a very incomplete and often misleading way into the translation process, hiding both successful strategies and problems.” Hence, “the study of translation has undergone a considerable shift of interest away from prescriptive and rather anecdotal attitudes, towards more descriptive, scientific positions” (ibid.). Such criticisms point to the great advantages of the process-oriented approach over the traditional product-oriented approach, and it seems that the two perspectives are somewhat opposite to each other.

But there are other voices, also coming from process researchers. After warning about the danger of making sweeping generalizations about translation process in TPR, Tirkkonen-Condit (2005) asserts that “studies of processes must be accompanied by an evaluation of the product quality as well, if the aim is to pin down those process features that are found to be conducive to good quality” (p. 406). This assertion can be regarded as a call for the combination of product-oriented approach with process research since the evaluation of the product quality would inevitably involve contrastive analysis of the source and target texts. In a similar vein, Hansen (2010) highlights the necessity to establish the connection between the data about the translation and decision-making process on the one hand, and the
quality of the translation product on the other. Stressing the importance of studying various texts involved in translation, she regards the evaluation of translation product as “an important element of uncertainty” in empirical research of translation process (ibid., p. 204). As a matter of fact, it is not rare for the process researchers to relate to the translated texts in their analysis of translation process. Even the above-cited criticizers of the product-oriented approach still make use of it in their process studies where the very criticisms are made. For instance, House (2000) analyzes her subjects’ translations as well as the thinking-aloud protocols and retrospective interviews when connecting the process features with the quality of translated texts and discussing “the dialectic relationship between accuracy and fluency and between micro- and macro-perspective of translation” (p. 158). Lörscher (2005) finds out that foreign language students, taking a form-oriented approach to translation, produce translated texts “which are neither equivalent in sense to the respective SL texts nor grammatical or stylistically acceptable” (p. 605). Such findings have to be based on contrastive study of the source and target texts. Having her informants’ translation graded and commented, Bernardini (1999) explains that “this information about the output of the translation process was collected as back-up evidence, but was not considered to be crucial for the kind of analysis envisaged” (p. 191). With that said, the very act of collecting such data “as back-up evidence” at least reveals that to the researcher, the study or evaluation of translation product is not totally useless or irrelevant in the process research.

Here, one may wonder whether a neat line should be drawn between process- and product-orientated studies of translation. As Holmes (1988) points out:

True, it is very useful to make a distinction between the product-oriented study of translations and the process-oriented study of translating. But this distinction cannot give the scholar leave to ignore the self-evident fact that the one is the result of the other, and that the nature of the product cannot be understood without a comprehension of the nature of the process (p. 81).
Indeed, translation process and translation product are interrelated. When we talk about translation process, we should remember that we are dealing here not just with an isolable process but rather with a set of processes, a complex series of problem-solving and decision-making processes that are constrained by semantic, pragmatic, situation-specific and culture-specific constraints operating on two ‘levels’—that of the source and that of the target language (House, 2000, p. 150).

According to Malmkjær (2000), translation should be seen not only as a process but also as a product, and “it is not possible to separate absolutely the study of the translation product from the study of the translation process” (p. 164). Sharing the same view, Osimo (n.d.) further points out that such a distinction does not produce many results. So, a better way to study translation seems to be to combine the process- and product-oriented methods, as many researchers have actually done in TPR. Such an integrative approach is also adopted in the present study.

2.3 Perspectives on Translator’s Lexical Consultation

This section reviews the theoretical perspectives on the translator’s lexical consultation. Section 2.3.1 looks into the componential studies of translation competence, focusing on the lexical consultation ability as a sub-competence and the practical purpose it serves. Section 2.3.2 examines how lexical consultation is viewed as a problem-solving process in translation research, information science and lexicographical studies.

2.3.1 Lexical Consultation Ability as Sub-competence

The translator’s lexical consultation ability has been recognized as a constituent part of translation competence. Nord (1992) lists “research competence” among the “essential competences required of a translator” (p. 47), which comprise competence of text reception and analysis, of text production, of translation quality assessment, as well as transfer competence, and linguistic and cultural competence on the source and the target side; but she does not further explain the research competence.
Proposing a similar list of competences, however, Schäffner (2000) defines “(re)search competence” as “the knowledge of the mechanisms and procedures required to fill any perceived knowledge gaps”, which involves the use of “the large variety of resources available to translators (such as types of dictionaries, databases, encyclopedia and other reference works, parallel texts, the Internet, human resources)” (p. 153). Although the ability to make lexical consultation is not explicitly mentioned here, its essence—searching in resources such as dictionaries to fill the translator’s knowledge gaps—is clearly implied in the above definition. In a similarly implicit way, other scholars also include the lexical consultation ability as a part of translation competence. For instance, Fraser (2000, p. 56) claims that, to be competent, professional translators need to have the knowledge of a variety of resources including dictionaries, glossaries and other references works. Presas (2000) takes “the ability to use tools such as dictionaries and other sources of documentation” as one of the skills the translator should possess (p. 28); for Fox (2000), “awareness of the different resources available to attain one’s objectives and how best to use them” is one of the competences to be developed in translator training (p. 117). In his a model of translation competence acquisition, Bergen (2009) also incorporates “tools and research competence” (p. 235), which refers to the ability to access external knowledge when needed during the translation process. Though taken differently as knowledge, ability, skill or awareness, the capability to conduct lexical consultation is situated in the broader notion of translation competence.

While some of the above scholars might have mentioned translation competence in passing, the systematic studies of it offer more detailed descriptions of the translator’s consultation ability. Beeby (2000) breaks the inverse translation competence into four sub-competences, i.e., transfer, contrastive linguistic, contrastive discourse and extra-linguistic competence; and “the use of dictionaries, encyclopaedias, databases, parallel texts, experts, etc.” is listed as documentation skills under the extra-linguistic competence (p. 187). The PACTE group (2003, 2005,
2009) define translation competence as the underlying system of knowledge required to translate, which is made up of bilingual, extra-linguistic, strategic and instrumental sub-competence, plus knowledge about translation and psycho-physiological components. According to them, the “(p)redominantly procedural knowledge related to the use of documentation resources and information, and communication technologies applied to translation” is ascribed to instrumental sub-competence (2009, p. 208). The resources and technologies include “dictionaries of all kinds, encyclopaedias, grammars, style books, parallel texts, electronic corpora, search engines, etc.” (ibid.). PACTE’s holistic model of translation competence is widely accepted by other researchers (Bergen, 2009, p. 234) (e.g., Orozco, 2000; Orozco & Albir, 2002; Göpferich, 2009; Ehrensberger-Dow & Perrin, 2009). Based on PACTE’s model, Göpferich (2009) develops her own model of translation competence, in which the tools and research competence comprises the ability to use translation-specific conventional and electronic tools, from reference works such as dictionaries and encyclopaedias (either printed or electronic), term banks and other data bases, parallel texts, the use of search engines and corpora to the use of word processors, terminology and translation management system as well as machine translation systems” (p. 22).

As can be seen, Göpferich’s “tools and research competence” actually corresponds to PACTE’s “instrumental sub-competence.”

Although scholars have named this component of translation competence differently, there are two features intrinsic to consultation ability, which are ascertained in its various definitions. One is its practical nature. This is shown by the frequent appearance of the word “use” in its descriptions. PACTE (2003, 2009) believes that the instrumental sub-competence involves both declarative knowledge (knowing what) and procedural knowledge (knowing how), but the latter is predominant. Moreover, such predominantly procedural or operative knowledge is used for problem solving (PACTE, 2003, p. 45). Schäffner (2000, p. 153) offers a more specific description about the function of this sub-competence, that is, to fill the
translator’s knowledge gaps. In other words, consultation capability is used to solve the problem of translator’s insufficiency of knowledge. Another feature of this sub-competence is that it involves diverse types of reference sources. They range from human to non-human resources, from general reference works to literature on specialized subjects, and from traditional printed materials to data in various electronic forms. Such a broad spectrum of sources makes it practically impossible to cover all of them in a study of translators’ instrumental competence. Researchers have instead focused on the use of a certain type of resources, such as dictionaries (e.g., Varantola, 1998; Livbjerg & Mees, 1999, 2003; House, 2000), web search (e.g., Raído, 2011a; Xu & Wang, 2011), translation tools (e.g., Fulford, 2001; Krings, 2001; Garcia, 2009), etc. In a similar vein, the present thesis on translators’ consultation ability also narrows the scope of study to the use of reference sources for solving lexical problems.

2.3.2 Lexical Consultation as Problem-solving Process

As part of translation process, translators’ lexical consultation can be studied as a problem-solving process not only in translation research but also in related disciplines such as library and information science and lexicography.

In translation studies, the researchers of translation process have primarily “adopted the methodology of problem-solving studies in cognitive psychology to produce interpretable data” (Séguinot, 1989b, p. iii). The process of translation is conceived of as “a complex series of problem-solving and decision-making processes conditioned by semantic, pragmatic, and situation-specific and cultural-specific constraints” (House, 2000, p. 150). According to Bernadini (1999), it is by viewing translation as a problem-solving process that “some scholars have put forward the suggestion that it should be possible to study the translation activity it by means of TAPs, and have set up experiments to test this hypothesis” (p. 181). Many TAP studies take translation processes as problem solving activities, which were monitored through two major categories for analysis, i.e. translation units and
translation strategies (Raído, 2011a). In their study of dictionary use, Livbjerg and Mees (2003) define a translation unit as “any word or phrase in the text, or any aspect of such word or phrase, which is verbalized by any single participant and for which he or she expresses any degree of doubt about its proper translation” (p. 129). Such perception of translation problems as the translator’s self-constructed problematic entities agrees with other TPR scholars’ view (e.g., Krings, 1986; Lörscher, 1991; Séguinot, 2000). On the other hand, translation strategies, also called procedures, refer to the solutions to specific problems (Davies, 2004, p. 14); and problem-solving means the deliberation and rendering of a textual element that cannot be translated without deliberation (Sirén & Hakkarainen, 2002, p. 76).

In library and information science, lexical consultation is regarded as a human information behavior (HIB). Although such behavior has been examined from cognitive, behavioral, affective and social perspectives (Raído, 2011a), the predominant framework for studying it has been “the information-seeking/problem-solving approach” (Spink & Cole, 2006, p. 3). From the perspective of the user of information resources, uncertainty is a feeling that runs through the information-searching process and the cause of this feeling is a problematic situation (Wilson, 1999). In Schutz and Luckmann’s (1974) terms, the problem is “a discrepancy between the typifications applied to the life-world and a phenomenon that, at first sight, cannot be fitted into those typifications” (Wilson, 1999, p. 265). The resolution of the discrepancy, or the solution of the problem, entails a process of moving from uncertainty to certainty. This process involves the following four stages: (1) problem identification (what kind of problem it is?), (2) problem definition (what is the exact nature of the problem?), (3) problem resolution (how does one find the answer to the problem?) and, potentially, (4) solution statement (This is the answer to the problem) (ibid., p. 266). This four-stage problem-solving model of information searching may be too general and sketchy for depicting lexical consultation in translation, but it outlines the key points of the consultation process, that is, identifying the problem, searching for the answer and solving the problem.
In lexicography research, however, various models of dictionary use provide a more focused and apposite perspective for studying the translator’s lexical consultation as a problem-solving process. Based on his 1982 model of dictionary use in comprehension, Scholfield (1999) suggests that the consultation process for reception purpose involves the following five main steps: (1) identifying a vocabulary problem, (2) deciding to use a dictionary, (3) finding the entry for the item being sought, (4) locating the needed information, and (5) exploiting the information (pp. 13-14). Bogaards (1993, 2003) puts forward a more detailed eight-step model, adding three steps before selecting the entry, namely, determining the problem word, determining the canonical form, and selecting the head word. While the above two models are meant for dictionary use in reception, Hartmann’s (2001) can be used to explain dictionary use in both comprehension and production (He, 2003). His model divides the lookup process into three sections, i.e., problem finding, dictionary access and problem solving, of which the dictionary access includes external search of the macrostructure of the dictionary and internal search of the microstructure (Hartmann, 2001, p. 91; see Section 3.2.1 for detail). Though slightly different in sectionalizing the lookup activity, the above theories all take lexical consultation as a problem-solving process and the lookup steps can be fitted into the more general problem-solving model proposed in library and information science.

2.4 Translation into the Second Language

After outlining the opinions against it, Section 2.4.1 identifies translation into a second language as a practical demand in many parts of the world, followed by a brief discussion on the factors behind this phenomenon, the text types thought to be suitable for inverse translation, and the realistic receptive attitude towards it. Section 2.4.2 first examines the actual situation of inverse translator training, in which the trainees are also second language learners. Then a review is conducted of the approach to teaching and researching inverse translation that puts it in the
framework of second language acquisition and of a developmental perspective on the errors made in translation.

**2.4.1 Inverse Translation as Practical Need**

It is generally believed that translation should normally be done into the native language. This viewpoint is held in many European translator-training institutions and advocated by translation associations and international organizations (Hatim, 2001). The Code of Professional Ethics of the Translation’s Guide of Great Britain, for example, expressly provides that the translators shall only work into the language of which he has native knowledge (St John, 2003). In international organizations such as the United Nations and the European Community, translators are expected to translate into their first language or mother tongue (Beeby, 1996). This belief in translating into the native language as the only legitimate direction is supported by some translation scholars. Of them, Ladmiral (1979) is a radical opponent of working into non-native languages, who denies the existence of inverse translation. Newmark (1981) also believes that “translators rightly translate in their own language” because it is impossible for one to acquire the native-like knowledge of a foreign language and culture, and collocational mistakes seem unavoidable in translation into a non-native language (p. 180). Although he acknowledges the necessity and value of inverse translation, which he named as “service translation,” he still holds that “translating into the language of habitual use is the only way you can translate naturally and accurately and with maximum of effectiveness” (1988, p. 3). Dollerup (2000) defends this stance by warning against the illusion that “we shall ever master English as the natives do” and asserting that “there are cases where we are incapable of producing a good translation in the sense that it sounds like an authentic, native text to target language users” (p. 63). Obviously, the unattainability of native-like competence of the target language (TL) is thought to be an inverse translator’s Achilles’ heel; and it is believed that for the sake of target-text quality, translation should be ideally done into the native language.

However, the idealistic insistence on translation into mother tongues has been
challenged by the actual disparity between the shortage of “qualified” translators and the demand of translation into certain languages. According to McAlister (1992), the demand for translating from Finnish into English exceeds the number of translators who are native English speakers with Finnish as a second language. A survey in Finland shows that most of the studied text types were translated into or directly written in the foreign language while only 6% of members of the Finnish Translators and Interpreters Association were not practitioners who had Finnish or Swedish as their first language (ibid.). In Spain, because of the great need to translate into English for international trade, many Spanish translators often have to work into English; a questionnaire answered by seventeen certified official translators and interpreters in Barcelona reveals that twelve offered multidirectional translations (Beeby, 1996). Poland is another country where inverse translation is a usual practice among translators. Over 50% of its translation is done into foreign languages such as English and French and there are more polish-speaking translators with good command of English or French than Anglophones and Francophones with good knowledge of Polish (Contreras & Turrión, 2013). The situation is similar in Lithuania, where it is common for the local translators to work into foreign languages such as English and Russian whereas translating into the mother tongue is regarded as a luxury, only possible in large business and international organizations (ibid.). According to a questionnaire, over 70% of the 193 surveyed full-time translators/interpreters in Croatia work regularly into their L2 English (Pavlović, 2007). It is also noted in Japan that a large amount of translation into English is done by non-native speakers (Lise, 1997). In Australia, in order to provide various services to the immigrant communities through their languages, many translators are expected to translate into a non-native language and the practitioners with the immigrant language as their mother tongue have to work into English (Campbell, 1998). Moreover, the taboo against translation into a foreign language has been broken in some international institutions. With more countries joining the European Union at the turn of this century, the European Commission tried out the possibility of inverse translation in its in-house translation service Directorate-General for
Translation in 2008 (Contreras & Turrión, 2013). The huge gap between the onslaught of translations into English and the insufficient personnel compelled the organization to carry out a pilot project introducing two-way translation in the departments that formerly worked only from English to other “minor” or “lesser-used” European languages (ibid.).

Similar to the cases mentioned above, China also has a demand for translation into foreign languages that far outstrips the availability of translators who are the native speakers of the target languages. The ever-increasing exchanges with the rest of the world have brought about an enormous market need for translation from Chinese. According to a survey of 120 sampled translation companies (Locatran, 2015), in 76 or 64% of them, translation into foreign languages made up over 50% of their total business; this percentage was as high as 80% to 100% in sixteen of the investigated companies; and the amount of translation into foreign languages had surpassed translation into Chinese for three consecutive years since 2011. On the other hand, due to the homogeneity and mono-linguistic environment of the Chinese society, native translators of the needed target languages are not readily available there. As Chau points out, one “can walk for 3000 miles in China without finding a native speaker of English” (Anderman & Rogers, 2006, p. 27). Besides, as Chinese is not a language widely spoken outside China, it is extravagant to expect many native target-language speakers to be able to translate from Chinese. Under the circumstances, as the vice chairman of Translators’ Association of China Huang Youyi (2005, 2008, 2011) reiterates, there has been a severe shortage of translators who can work into foreign languages; and most of translation into foreign languages has to be done by local Chinese-speaking translators (Li & Zong, 2008).

There are many contributive factors behind the phenomenon of inverse translation, including the status of a language, language combinations, subject specialists, text types, deadlines and availability of translators (St John, 2003). It may even have to do with national pride (McAlister, 1992). Of these complicating elements, the asymmetry of English and other languages is thought to be a major root cause for the
worldwide practice of translation into English. As Campbell (1998) points out, translation is a result of bilingualism, but “bilingualism is not politically, socially or economically neutral” (p. 22). It means that we are not in a world where each language enjoys an equal status; consequently, “the source and target languages in translation are seldom in balance” (ibid.). The international dominance of English has brought about a large demand of documentation that needs to be translated into that language (Campbell, 2000). Moreover, the need for global communication in a universally understood language has made it a must to translate into English as a non-mother tongue in today’s world (Snell-Hornby, 2000).

It is pointed out that for certain text types, working into L2 is a practicable and even preferable direction. McAlister (1992) argues that non-native speaker translators can handle many texts “competently” in the sense that the intended message is transmitted and the rendering is “clear and sufficiently correct not to contain unintended comic effect or strain the reader’s patience unduly” (p. 294). Ahlsvad (1978) believes that inverse translation is desirable in technical translation, where the importance of accuracy and specialist knowledge outweighs that of felicity of style and native competence of the target language. In medical translation, with the ready availability of many direct equivalents, a lesser knowledge of both languages may be required of the inverse translator (St John, 2003). Hornby (2000) thinks that translation into English as non-mother tongue is appropriate for informative texts, such as instructions for use, public announcements, commercial correspondence, scientific reports and tourist brochures because such writings, unlike literary and journalistic works, are highly conventionalised in verbal and non-verbal elements. To sum up, practical writing seems to be the most suitable text type for inverse translation, where the accurate conveyance of the source-text message is more important than the expressive use of the target language.

Nevertheless, translation into non-native languages has been accepted as an inevitable and regular practice in many places. Campbell (1998) deems it to be unavoidable not only in the multicultural and ethnic contexts of Australia but also in
many other settings around the world with the demand/supply paradox. Believing in the inverse translators’ advantage in understanding the source-language culture, Beeby (1996) regards inverse translation as a necessity in most countries and asserts that “it is a growing trend in most parts of the world, particularly with the predominance of English as an international trade language” (p. 6). Actually, in the world of globalization, it has become an economic necessity to translate into English as a non-native language (St John, 2003). Just as Hornby (2000) points out: “In the global village of today, one could make the categorical statement that every translator needs a working knowledge of English as international lingua franca” and “translation into English as a non-mother tongue has become a fact of modern life for which we need to train our future professional” (p. 37).

2.4.2 Translation into English within ESL Context

The great demand for translation into English calls for the training of translators who can work into that language as a non-mother tongue. According to Campbell (1998), the supply/demand paradox imposes special requirements on translator education in Australia, where inverse translation is taught to both the first- and second-generation candidates from the immigrant communities. For the former, English is their second language and for the later, the ethnic language is. In Europe, translation into a foreign language is included in all of the schools of translation (Beeby, 1996) and many translator-training programs make inverse translation a compulsory course (Congrat-Butlar, as cited in McAlister, 1992). In China, there has been a constant appeal that more translators should be trained to work into English (e.g., Huang, 2005; Li, 2007; Li & Zong, 2008; Guo Xiaoyong: China in Urgent Need of Professional Inverse Translators, 2013; Locatran, 2015). Since the late 1970s when English departments throughout the country began to offer translation courses, inverse translation has been an indispensable part of translation teaching (Mu, 2001). In the national curriculum for English majors, Chinese-to-English translation courses are listed as compulsory, with detailed requirements specified (Steering Committee
of Foreign Languages Teaching for Tertiary Education, 2000, p. 10). In the translation programs of Beijing Foreign Studies University, where the informants of this study come from, the courses on translation into English have as many class hours as those on translation into Chinese at both under- and post-graduate levels.

Here, it should be made clear that teaching translation into English as a part of translator training course is different from teaching translation to improve ESL learners’ English performance. Beeby (1996) asserts that for the former, translation is “the end in itself”, but for the latter, translation is “the means to an end,” (p. 13) that is, to improve English proficiency. After an analysis of the differences between the two kinds of translation in terms of context of situation, Zeng (1997) point outs that translation in the real-world sense aims to convey the source-text message to the target reader while the pedagogical single-sentence translation is done for practicing certain language usages. In a word, the inverse translation into English taught to translation trainees is real-life translation, which, in Hansen’s (2003) words, involves authentic texts with a social and communicative function in certain communication situation (p. 26).

An obvious fact about the translation students learning to work into English as a second language is that they are also ESL learners. This raises the issues about whether we should teach them translation proper or language skills related to translation, or both (Hatim, 2001, p. 168). A utopian solution is to teach translation only to those with highest linguistic competence, but this is obviously impossible in translator training institutions due to various practical, social and political factors (ibid.). As Pym (1992) says, the requirement for “a perfect command of foreign language before learning about translation…would mean teaching translation to virtually empty classes” (p. 281).

In the circumstances, a realistic approach has to be adopted in teaching translation into English as a second language. Pym (ibid.), for example, looks at translation teaching and language teaching as a whole rather than in isolation, and he goes on to make a distinction between translation errors and language errors. According to him,
the former are non-binary in that the mistake is opposed to at least two possible correct answers and there are other wrong ones whereas the latter are binary in that the error is opposed to only one right answer. Pym (1992) concludes that at any level of translation training or language teaching there are both binary and non-binary errors to deal with (p. 183). Proposing a comprehensive course on inverse translation from Spanish to English, Beeby (1996) discusses her students’ limitations in grammatical, sociolinguistic and discourse competences of the target language and makes it one of the teaching objectives to acquire “grammatically correct, pragmatically adequate ‘plain language’ writing and composition skills in the TL” (p. 107). Campbell (1998) finds that target-language competence at the level of text and discourse is especially lacking in trainee and novice translators, and he argues that improving English competence is also part of learning to translate into English as a second language (p. 56).

More importantly, borrowing Selinker’s (1972) concept, Campbell (2000) suggests that the output of inverse translation be regarded as a kind of “interlanguage, a dynamic individual code potentially moving towards native speaker competence” (p. 213). Interlanguage is “a separate linguistic system based on the observable output which results from a learner’s attempted production of a TL norm” (Selinker, 1972, p. 214). By using the notion of interlanguage, Campbell (1998) puts the study of inverse translation in the framework of second language acquisition; as he rightly points out, whether a student or professional, an inverse translator has “a dual role as translator and learner: any translator working into a second language is, by definition, on a development path with respect to that language” (p. 12). Seeing the translator as a second-language learner, we are able to discuss inverse translation in a systematic way and draw on the other related research fields such as contrastive analysis, bilingualism and second language acquisition (ibid.). In his monograph Translation into the Second Language, Campbell (1998) characterizes the development of translators’ textual competence by contextualizing inverse translation in a second language acquisition framework and by making use of the resources of genre and
ESL theory. It seems that acknowledging the inverse translator’s identity as a second language learner is not only a practical and realistic way of looking at the reality of inverse-translation training but also a useful and potentially productive perspective in terms of researching. Following this approach, the present thesis also places inverse translation in the context of English learning, borrows from ESL theory to account for the problems in translation learning, and regards the students’ lexical consultation as a L2 lexical acquisition process.

Moreover, taking the translator as an ESL learner on a progressive path moving towards better proficiency of English also provides a positive and constructive attitude towards the errors made by student and novice translators. If we take translation learning and English acquisition as a kind of trial and error process, then mistake making is an inevitable part and a way of learning. As Corder (1967) proposes, “we can regard the making of errors as a device the learner uses in order to learn” and the errors “provide evidence of the language that he is using (i.e. has learned) at a particular point in time (and it must be repeated that he is using some system, although it is not yet the right system)” (p. 167). Therefore, they can tell the teacher what has been learned and what needs to be learned and provide the researcher evidence about language acquisition (ibid.). Viewed from such a developmental perspective, which is also taken in the present study, the errors made in translation carry positive connotations in terms of teaching and researching.

2.5 Studies of Lexical Consultation in Translation

As this thesis is an empirical study on lexical consultation in translation, the review of research literature focuses on the projects that involve both lexical consultation and translation task. So studies of translation process without addressing vocabulary lookup are not included (e.g., Séguinot, 1989a; Tirkkonen-Condit, 1989; Fan, 2012); nor are those looking into translators’ lexical consultation but involving no translation task (e.g., Ramos, 2005; White et al., 2008).
Table 2.1
Reviewed studies on lexical consultation in translation

<table>
<thead>
<tr>
<th>No.</th>
<th>Researcher and reference</th>
<th>Discipline</th>
<th>Subjects</th>
<th>Translation Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Krings (1986)</td>
<td>Translation</td>
<td>8</td>
<td>L1-L2, L2-L1</td>
</tr>
<tr>
<td>3.</td>
<td>Tirkkonen-Condit (1987)</td>
<td>Translation</td>
<td>2</td>
<td>L2-L1</td>
</tr>
<tr>
<td>5.</td>
<td>Krings (1988)</td>
<td>Translation</td>
<td>1</td>
<td>L2-L1</td>
</tr>
<tr>
<td>17.</td>
<td>Li (1998)</td>
<td>Lexicography</td>
<td>61</td>
<td>L2-L1</td>
</tr>
<tr>
<td>24.</td>
<td>Künzli (2001)</td>
<td>Translation</td>
<td>6</td>
<td>L2-L1</td>
</tr>
<tr>
<td>30.</td>
<td>Asadi &amp; Séguinot (2005)</td>
<td>Translation</td>
<td>9</td>
<td>N.A</td>
</tr>
<tr>
<td>31.</td>
<td>Ronowicz et al. (2005)</td>
<td>Translation</td>
<td>6</td>
<td>L2-L1</td>
</tr>
<tr>
<td>33.</td>
<td>PACTE (2005, 2009)</td>
<td>Translation</td>
<td>59</td>
<td>L1-L2, L2-L1</td>
</tr>
<tr>
<td>34.</td>
<td>Laufer &amp; Levitzy-Aviad (2006)</td>
<td>Lexicography</td>
<td>75</td>
<td>L1-L2</td>
</tr>
<tr>
<td>40.</td>
<td>Heeb (2012)</td>
<td>Translation</td>
<td>14</td>
<td>L2-L1</td>
</tr>
<tr>
<td>41.</td>
<td>Wang &amp; Xu (2012)</td>
<td>Translation</td>
<td>32</td>
<td>L2-L1</td>
</tr>
<tr>
<td>42.</td>
<td>Zheng (2014)</td>
<td>Translation</td>
<td>18</td>
<td>L2-L1</td>
</tr>
</tbody>
</table>
According to the above criterion, forty-two studies have been collected, which are listed in Table 2.1, with brief information about the discipline they belong to, the number of informants and the directionality of translation tasks undertaken. As can be seen, the list covers a period of nearly thirty years since 1986, the year marking the beginning of the exploration of translation process. The collecting of these studies has benefited from the overviews of translation process research in Fraser (1996), Jääskeläinen (2002, 2011), Krings (2001), Orozco (2003) and Tirkkonen-Condit (2002) and those of dictionary use research in Dolezal and McCreary (1999) and Welker (2010). The list is not necessarily an exhaustive catalogue of studies on lexical consultation in translation, but the forty-two projects are believed to have included most of important and representative research efforts made in this respect so far. In the following subsections, a review is conducted of the listed studies in terms of their research purpose and scope, methodology and findings.

2.5.1 Research Scope and Purpose

As shown in Table 2.1, lexical consultation in translation has been investigated in two disciplines—lexicography and translation studies. Of the forty-two projects, thirteen are by lexicography researchers and twenty-nine by translation scholars. The former belong to dictionary use or user studies and the latter belong to translation process research. Generally speaking, the lexicography researchers aim to find out how dictionaries are actually used and what needs the dictionary users have whereas the translation scholars wants to explore what is happening in the translation process. However, they all touch upon the translator’s lexical consultation. A detailed analysis of their research scope and purposes reveals more differences as well as similarities between them.

In terms of research purpose, the thirteen lexicography projects can be divided into two groups. The first group seems to be interested in the general information about dictionary use. For example, in their ambitious research, Atkins and Varantola (1998)
aimed to discover the effectiveness of dictionaries in various tasks, the contrastive usefulness of and users’ attitudes toward bilingual and monolingual dictionaries, and the instructions the users received in dictionary use. In another study of a smaller scale (Atkins & Varantola, 1997), they narrowed their attention to look-ups in translation only, but still, their research focused on some general topics about the consultation process, such as the information sought, the most useful part of an entry, satisfaction rates of lookup, etc. Similar issues were explored by other scholars under various specific conditions, such as in translation by ESP (English for special purpose) students (Li, 1998) or in rendering a more specialized text (Varantola, 1998), or with access to electronic/web-based dictionaries (Frankenberg-Garcia, 2005) or on-line resources (Law, 2009). Mackintosh (1998) and He (2003) were also interested in the general information about dictionary users’ needs and preferences, lookup behaviors and strategies, and satisfaction rates, aiming respectively to provide implications for future dictionary design and to establish a model of collegiate Chinese-English Learner’s dictionary. The other group of scholars, however, had a more focused research purpose. For example, Bogaards (1991), Raudaskoski (2002) and Laufer and Levitzy-Aviad (2006) investigated the effectiveness or advantages of some particular kinds of dictionaries. Martin-Rutledge (1997) looked into the usefulness of examples in bilingual dictionaries while Bogaards (1998) examined the kinds of words students looked up.

It can be seen that the above studies focused on dictionaries rather than translation, with the ultimate purpose of providing findings for making or improving dictionaries. They were either about dictionaries, such as their design, types, effectiveness and merits, or about the users, such as their look-up habits, needs, preferences and attitudes, all of which are useful information to lexicographers. Although the studies all involved translation tasks of one kind or another, they were often used just as one of the ways to prompt dictionary use (e.g., Atkins & Varantola, 1998; Bogaards, 1998; Mackintosh, 1998). Translation was chosen to generate lookups because it is easier to evaluate than composition (Bogaards, 1991) or because guessing techniques
are less useful in translation than in reading (Raudaskoski, 2002). In some cases, the translation task was not compulsory (e.g., Atkins & Varantola, 1997) or was in form of multiple choice test (Atkins & Varantola, 1998), bilingual cloze test (Martin-Rutledge, 1997, 1998; Raudaskoski 2002), or single-sentence rendering (Laufer & Levitzy-Aviad, 2006). Moreover, in a few studies (Atkins & Varantola, 1997; Mackintosh, 1998; Varantola, 1998), the rating of consultation success was based on the user’s self-evaluation, rather than the actual success in finding the desired item, not to speak of the proper integration of it into translation. All these have showed that translation was used as a means of generating lookups in the studies by dictionary researchers and it was not an object of research.

In the 29 studies by translation researchers, however, there were three major themes. Some of the projects had two overlapping themes, and different accounts of the same project might have a shift of focus (e.g., Ehrensberger-Dow & Massey, 2008; Ehrensberger-Dow & Perrin, 2009). First, about half of the studies aimed at an overall description of the translation process, problems and strategies. While the early TPR studies were interested in what was happening in translation (i.e., Krings, 1986; Jääskeläinen, 1987; Gerlof, 1988; Kohn, 1988; Krings, 1988; Jääskeläinen, 1990), the later projects had a narrower focus, such as translators’ creativity (Kussmaul, 1995), the post-editing of machine translation (Krings, 2001), or certain aspects of translation competence (PACTE, 2005, 2009; Ehrensberger-Dow & Massey, 2008; Ehrensberger-Dow & Perrin, 2009). And the interest in translation problems and strategies never seems to flag through the years (Tirkkonen-Condit, 1987; Kiraly, 1990; Fraser, 1994; Barbosa & Neiva, 2003; Asadi & Seguinot, 2005; Göpferich, 2010; Wen & Yin, 2010; Wang & Xu, 2012). The second research topic was the professional performance of translation. Practitioners’ working process was studied so as to establish how translation was actually done in the real world (i.e., Fraser, 1994; Nord, 2002; Asadi & Seguinot, 2005; PACTE, 2009). The third research focus was lexical consultation in translation. Altogether twelve studies explored this topic, namely, Meyer (1988), Jääskeläinen (1989), Englund Dimitrova
and Jonasson (1999), Fraser (1999), Livbjerg and Mees (1999), House (2000), Künzli (2001), Livbjerg and Mees (2003), Nord (2002), Ronowicz et al. (2005), Raído (2011a), and Zheng (2014). As these studies bear direct relevance to the present thesis, they will be given a more detailed account in this review.

Understandably, no matter what their specific topics were, translation was a permanent focal point in the researches by translation scholars. But lexical consultation was not. Most of the translation studies treated it as a part, or sometimes a small part, of the bigger picture of the translation process. While Fraser (1994), Gerloff (1988), Jääskeläinen (1987, 1990), Kohn (1988), Krings (1986, 2001), PACTE (2005, 2009) and Wang and Xu (2012) paid due attention to the look-up process, it was only discussed briefly in Asadi and Séguinot (2005), Barbosa and Neiva (2003), Ehrensberger-Dow and Perrin (2009), Göpferich (2010, 2012), Kiraly (1990, 1995), Kussmaul (1995), Heeb (2012), Tirkkonen-Condit (87, 1989) and Wen and Yin (2010). So, except those focusing on lexical consultation, the other translation studies took vocabulary lookup only as a component of translation process and it was not fully explored.

Although obvious differences existed between the two groups of scholars in terms of research scope and purpose, there was no lack of common concerns in their research efforts. After all, a person translating with the help of dictionaries is a translator and a dictionary user at the same time. So it is no surprise that the two groups were interested in the same aspects of lexical consultation in translation. The first area was the look-up process itself, involving factors such as consultation purposes, patterns, strategies and success rates. The studies reviewed here dealt with at least one of these topics. The second commonly-studied aspect concerned the dictionary user attributes; and the specific topics involved his dictionary knowledge, preferences, needs and habits, and attitude to dictionaries. Besides the dictionary researchers, translation scholars also touched upon these factors (i.e., Krings, 1986; Jääskeläinen, 1987; Gerloff, 1988; Jääskeläinen, 1990; Fraser, 1999; Nord, 2002; Barbosa & Neiva, 2003; Ronowicz et al., 2005; Wang & Xu, 2012; Zheng, 2014).
The third area tackled by both groups was the effect of consultation on translation. A simple way to study this impact was to see whether a lookup had led to a proper translation (e.g., Martin-Rutledge, 1997; Li, 1998; Fraser, 1999). Some scholars, however, looked into this issue by comparing translations done with and without lookup (e.g., Bogaards, 1991; Livbjerg & Mees, 1999, 2003; House, 2000; Raudaskoski, 2002); others investigated the effect of different types of dictionaries or consultation resources (e.g., Bogaards, 1991; Künzli, 2001; Raudaskoski, 2002; Frankenberg-Garcia, 2005; Laufer & Levitzy-Aviad, 2006); still some others discussed the effect of different consultation features (Jääskeläinen, 1990; Raído, 2011a). The fourth point shared by the two groups of studies was the widened scope of consultation sources addressed in the more recent researches. With the rapid development in information technology, paper dictionaries have long lost their status as the translator’s primary tool for lexical consultation. Various electronic dictionaries and on-line resources have been used since the turn of the century. Both lexicography and translation scholars have realized this change and included different new forms of consultation sources in their studies (i.e., Künzli, 2001; He, 2003; Asadi & Seguinot, 2005; Frankenberg-Garcia, 2005; Laufer & Levitzy-Aviad, 2006; Ehrensberger-Dow & Massey, 2008; Law, 2009; Göpferich, 2010; Raído, 2011a; Wang & Xu, 2012; Zheng, 2014).

Apart from the above common interests, a research theme pursued by both dictionary and translation scholars (but mainly the latter) was to find differences between various subject groups. In over ten projects, contrastive investigations were conducted on student and professional translators (Gerloff, 1988; Krings, 1988; Jääskeläinen, 1990; Kiraly, 1990; Englund Dimitrova & Jonasson, 1999; Künzli, 2001; Barbosa & Neiva, 2003; Ronowicz et al., 2005; Ehrensberger-Dow & Massey, 2008; Göpferich, 2010; Zheng, 2014). Differences between translation students of different competence levels were also looked into (Jääskeläinen, 1987; Tirkkonen-Condit, 1987; Atkins & Varantola, 1997; Li, 1998; Ehrensberger-Dow & Massey, 2008; Heeb, 2012; Wang & Xu, 2012). Obviously, the differences found
between such subject groups may shed light on the development and training of translation competence.

Another important point where most of the reviewed studies converged was the pedagogic purpose in research. That is to produce useful information for the training of translation and reference skills. As mentioned above, quite a few translation studies focused on the differences between student and professional translators. The pedagogic nature of such research was self-evident, for the disparities found there can provide enlightenments as to the goal and direction of translation training. Actually, many translation scholars explicitly discussed the pedagogical implications of their research findings and suggested possible improvements for translation teaching (e.g., Fraser, 1994; House, 2000; Livberg & Mees, 1999; Meyer, 1988; Raído, 2011a). On the other hand, most of the dictionary researches also aimed to provide useful information for teaching lexical lookup skills (e.g., Atkins & Varantola, 1997; Bogaards, 1998; Mackintosh, 1998; Varantola, 1998; Raudaskoski, 2002; Law, 2009). Some of the findings were closely related to the development of the students’ language competence (Mackintosh, 1998; Bogaards, 1998). The didactic interest shown in the reviewed studies might have to do with the fact that the majority of the researchers were university teachers of translation or lexicography. Nevertheless, aiming to provide heuristic information for teaching, these studies took on a practical significance.

From the above analysis, the following conclusions can be drawn. First, as translation was not a focus in the lexicography studies and vocabulary lookup was treated merely as a component of translation process in most translation studies, only a dozen projects looked into the translator’s lexical consultation and at the same time gave due consideration to translation. Second, the two groups of studies had shared interests in four topics, namely, the lookup process, effect of lexical consultation on translation, dictionary user attributes and the newly-emerged reference sources, which are examined in the present study as well, especially the first two topics. Third, a common theme pursued by many studies was to identify the differences
between various subject groups. Such a contrastive approach is adopted too in this thesis to study the development of the translator’s consultation at different competence levels. Last, most of the reviewed researches aimed to serve a pedagogical purpose, which is an objective of this thesis as well.

2.5.2 Research Methods

This review of research methodology of previous studies centers on three major aspects. Section 2.5.2.1 outlines the methods used to collect data about the lexical consultation process, Section 2.5.2.2 discusses the translation tasks assigned to elicit data, and Section 2.5.2.3 focuses on the selection of participants.

2.5.2.1 Data Collecting Method

Four methods were adopted by the lexicography scholars to garner data about the consultation process. The most commonly-used one was the lookup information sheet. It could be very brief, consisting of only two or three questions as to whether or not an item was looked up, what type of dictionary was used, where the needed information was found, how many searches were made, or whether the user felt satisfied (e.g., Martin-Rutledge, 1997; Atkins & Varantola, 1998; Raudaskoski, 2002). Other studies wanted additional information, asking six to fourteen questions to know more—the consultation purpose, the looked-up entry, the cause of a failed lookup, the move taken after a failed search, the reason for consulting another dictionary, any further comments, etc. (e.g., Atkins & Varantola, 1997; Mackintosh, 1998; He, 2003; Frankenberg-Garcia, 2005). The second method is think-aloud protocol (TAP), which was utilized by Varantola (1998) in combination with direct observation to gather data similar to those mentioned above, and by Law (2009) for an analysis of different types operations according to Thumb’s (2004) dictionary lookup coding system. The third method was to simply ask the informants to underline or mark the looked-up items in the source text or dictionaries (e.g.,

Of the 29 translation studies, a large majority used the think-aloud protocol except six projects. TAP was adopted as the only data collecting method in the early researches, mostly conducted before 2000 (i.e., Krings, 1986; Jääskeläinen, 1987; Tirkkonen-Condit, 1987; Gerloff, 1988; Krings, 1988; Kohn, 1988; Jääskeläinen, 1990; Fraser, 1994; Kussmaul, 1995; Ronowicz et al., 2005). Later studies using this technique tended to combine it with other methods such as retrospective commentary, interview or questionnaire (i.e., Kiraly, 1990; Barbosa & Neiva, 2003; House, 2000; Krings, 2001; Asadi & Séguinot, 2005; Wen & Yin, 2010; Zheng, 2014), computer logging (i.e., Livbjerg & Mees, 1999; Englund Dimitrova & Jonasson, 1999; Livbjerg & Mees, 2003; Göpf erich, 2010), video recording (i.e., Englund Dimitrova & Jonasson, 1999; Asadi & Séguinot, 2005) and direct observation (i.e., Nord, 2002). Of the six non-TAP studies, Künzli (2001), PACTE (2005, 2009) and Raído (2011a) used direct observation plus screen recording or computer logging whereas Ehrensberger-Dow and Massey (2008), Heeb (2012), and Wang and Xu (2012) adopted screen recording plus cue-based retrospective verbalization or interview. Heeb (2012) was the only study that used the eye-tracking technique.

While all the reviewed studies gave plausible reasons for the selection of data collecting methods, their drawbacks were also recognized as well as their strengths. The lookup information sheet in form of multiple choices, form filling or questions is simple, economic and applicable to a large number of subjects, but at the same time it disturbs the translation and consultation process (Aktins & Varantola, 1998). The most widely-used TAP method, originally developed to study problem-solving process (Ericsson & Simon, 1984), also has its pros and cons (for detailed discussions see Bernardini, 1999; Li, 2004; Jääskeläinen, 2011). It is believed to be a possible way to access to at least part of what is going on in the translator’s mind, but it may also interfere with the translation process (Jakobsen, 2003) and leave out
the automated process (Bernardini, 1999). Direct observation, computer logging, video or screen recording do not have these faults, yet they cannot tell us about the translator’s cognitive process (Mackintosh, 1998). Retrospective interviews may shed some light on the decision-making process, but there is also a danger of distortion due to memory fail (Ivanova, 2000) or ex post rationalization (Barbosa & Neiva, 2003). Although eye tracking can produce information about the participant’s focus of attention, the cost of the device is high and its availability is limited (Artar, 2012). So, each method has its own advantages and disadvantages (Jääskeläinen, 2011).

Perhaps due to the realization of this fact, about half of the reviewed studies, especially those conducted by translation scholars after the 1980s, used more than one method to collect data. In this way, the weakness of one method may be made up by another. On the other hand, with the advance of technology, various new methods have been developed since then, such as key logging, screen recording, eye tracking, etc. They have offered the researchers more choices to suit their research aims and theoretical framework. Moreover, using more than one data collecting method makes it possible to cross-check the data for the purpose of triangulation, thus increasing the trustworthiness of the findings (Li, 2004).

As the above discussion shows, various data-collecting methods were utilized to gather information about the consultation process. Both their strengths and weaknesses were displayed in the reviewed studies. Many of the projects adopted more than one method to collect data, which was conducive to mutual complementation and triangulation. All these points have provided enlightenments for the present study in research design.

2.5.2.2 Translation Task

Translation task was used as a data-generating method in the reviewed studies. Most of them gave details about the task assigned to trigger lookup, such as the requirement, text type and length, translation direction and languages involved,
which are all discussed in this subsection. Also examined here are the methods used to obtain translation done with and without lexical consultation, and the researchers’ treatment of the participant’s translation product and consultation results.

In half of the lexicography studies, the translation done was not in the real world sense. Instead, the task was in form of bilingual cloze test or multiple choices (e.g., Martin-Rutledge, 1997; Atkins & Varantola, 1998; Raudaskoski, 2002), or single sentences (e.g., Bogaards, 1998; Laufer & Levitzy-Aviad, 2006). In some experiments, translation task or its completion was not compulsory as far as lookups were generated (e.g., Atkins & Varantola, 1997; Law, 2009). In the other half of the studies where a complete translation of a short article or full passage was required, only three projects assessed the results of lookups in the translated text (i.e., Bogaards, 1991; Frankenberg-Garcia, 2005; Law, 2009) while the rest were only interested in the dictionary users’ self-evaluated satisfaction. Such designs reflected the instrumental use of translation tasks in the lexicography studies, where the focus was on dictionary use rather than translation.

In the translation studies, however, all the tasks were designed to simulate translation in the real life. A survey of these assignments, together with such tasks used in lexicography studies, reveals the following features. First, the length of the source text was usually between 100 and 300 words. Both the longest (1,000 words) and the shortest (30 words) texts were used by Krings (2001) in his study of the post-editing process of machine-translated user instructions for various devices. While Varantola (1998), Englund Dimitrova and Jonasson (1999), He (2003) and Wang and Xu (2012) assigned a task longer than 400 words, most of the other scholars kept the length of the source text under 300 words. Second, except a couple of studies (i.e., Kiraly, 1990; Mackintosh, 1998; Ronowicz et al., 2005), other projects seemed to have set no time limit for the task. Even in those experiments imposing a time constraint, it was made sure that enough time was given for the participants to work at a normal pace (e.g., Mackintosh, 1998). In the reviewed studies, the time actually consumed for completing the translation task was generally
within two hours. Third, most of the source texts came from magazines or newspapers, and they were about topics intended for the general educated public, such as politics, diplomacy, culture, education, economics, business, science, medicine, environment, tourism and so on. Other sources include textbooks of linguistics (Barbosa & Neiva, 2003), user instructions of appliances (Krings, 2001; Göpferich, 2010), literary works (Law, 2009; Wen & Yin, 2010), and web pages (Asadi & Séguinot, 2005). In order to evoke intensive use of dictionaries, three lexicography studies used semi-technical passages, about lake fishery (Varantola, 1998), and interest-rate swap (Mackintosh, 1998) and a trade corporation (He, 2003) respectively. Fourth, except Krings (1986), who assigned a task he described as “fairly difficult,” most of the reviewed studies set the translation difficulty at a moderate level, similar to that of the tasks the informants had to deal with in their study or work. It was also made certain that the task contained adequate number of potential problems. All the above features of the translation task show that most of the researchers wanted to see how translation or lexical consultation was done under normal circumstances. Therefore, the tasks assigned in the empirical studies were designed so that they simulated those usually done by the informants in terms of requirement, length, time allowed, subject matter and difficulty level, and at the same time they were not too prolonged or strenuous for the participants.

In regard to translation directionality and languages involved, there was a clear dominance of L2-L1 direction and European languages. Apart from eight projects addressing both directions, 21 dealt with L2-L1 translation while only eleven dealt with inverse translation. So, L1-L2 translation was a less-researched direction. As for languages, most of the studies examined translation between English and other European languages. The mostly-studied were German and French, followed by Finnish, Danish, Spanish, Dutch and Swedish; and other languages included Czech, Hungarian, Italian, Norwegian, Polish, Portuguese and Russian. Of the 42 reviewed studies, only eight involved non-European languages, such as Chinese, Hebrew, Japanese, Korean and Turkish. Although six projects looked into Chinese, yet
compared with German and French, Chinese was still a less-studied language, especially when we consider the enormous number of its speakers in the world and great demand of translation in China (Locatran, 2014).

As mentioned in Section 2.5.1, several studies compared translations done with and without lookups. Three ways were used to generate data for this purpose. The first method was to ask the participant to do the task first without and then with lexical consultation sources (e.g., Livbjerg & Mees, 1999; Raudaskoski, 2002; Livbjerg & Mees, 2003). The second method was to have one group of participants working with consultation sources and another group working without (e.g., Bogaards, 1991), and the third way was to require the subjects to translate a section of source text with lookup sources and another section without (e.g., House, 2000). When comparing the three methods, one may find that the first arrangement is better in that no change is made to the subjects and task. With the second method, however, the two groups of subjects may have different lexical problems; with the third method, it is almost impossible to have two passages with the same degree of difficulty (Livbjerg & Mees, 2003). Of course, the first design is not flawless. As the lexical consultations actually happen in the editing phase when the translation has already been completed, they might have been different if consultation had been allowed in the first place. However, it is just impossible for a text to remain still unknown when retranslated with access to consultation sources (ibid.). Moreover, having longer time-span between two sessions cannot totally erase the memory of the first translation, i.e., the carryover effect, and at the same time may bring about new variables such as improved language or translation skills. Therefore, compared with the other alternatives, the first method seems to be a more practicable solution to the problem of having the same participants using the same text under different conditions.

In the 36 studies that used a short article or passage as the source text for translation, the product of translation and the results of consultation were treated differently. Sixteen projects made no examination on the translated text or the lookup outcomes. Most of them were the earlier TAP studies that focused solely on what happened in
the translation process (i.e., Krings, 1986; Tirkkonen-Condit, 1987; Gerlof, 1988; Kohn, 1988; Krings, 1988; Fraser, 1994; Kussmaul, 1995). Some more recent projects also paid little attention to the translation and lookup results as they concentrated on the aspects observable from the translation process, such as the problems encountered and strategies or resources used to solve them (i.e., Barbosa & Neiva, 2003; Asadi & Séguinot, 2005; Heeb, 2012; Wen & Yin, 2012), and the number of consultations, information sought, dictionary preferences, and time spent on the task (e.g., Krings, 2001; Ronowicz et al., 2005). And a few studies of dictionary use were only interested in the user’s satisfaction with the lookups (e.g., Atkins & Varantola, 1997; Mackintosh, 1998; He, 2003). Second, of the rest 20 projects, twelve made a general assessment of the translation product. Most of them examined the correlation between the overall translation quality and some consultation features, such as the choice of consultation sources, dictionary type, research depth, and time spent on lookups (i.e., Jääskeläinen, 1990; Varantola, 1998; Englund Dimitrova & Jonasson, 1999; House, 2000; Künzli, 2001; Ehrensberger-Dow & Massey, 2008; Raído, 2011a). Some used the evaluation to verify the stratification of the informants (i.e., Jääskeläinen, 1987; Kiraly, 1990; Wang & Xu, 2012; Zheng, 2014); and still some compared the assessment results with the participant’s self-evaluation (e.g., Frankenberg-Garcia, 2005; Raído, 2011a). Third, only nine studies looked into the results of lexical consultation. Livbjerg and Mees (1999, 2003) and Law (2009) evaluated the different effects of the lookups; Ehrensberger-Dow and Massey (2008), PACTE (2009) and Göpferich (2010) studied what strategies were used to achieve the desired results; Bogaards (1991) and Nord (2002) explored what dictionaries or resources were more helpful and Meyer (1988) analyzed the causes for failed lookups.

The above analysis shows that while many studies assessed the general quality of the translation product, only a small number of the projects evaluated the results of consultation and related the lookup process to such outcomes. As Tirkkonen-Condit (2005) points out, “studies of processes must be accompanied by an evaluation of
product quality as well, if the aim is to pin down those process features that are found to be conducive to good quality” (p. 406). Similarly, the results of lexical lookups have to be assessed and related to if we want to find out the process features that lead to consultation success. A more detailed and integrated analysis of both the consultation process and results may yield useful findings about translator’s lexical reference effort. From this perspective, it can be said that most of the reviewed studies did not pay due attention to the translated text, especially the consultation results, and it seems that better use can be made of such data.

To conclude, the reviewed projects provided a useful paradigm of translation task designed for empirical studies in terms of requirement, length, time given, topics and difficulty level. In addition, having the subjects doing the translation task first without and then with lexical consultation seems to be a practical method to obtain data for studying the effect of lookups on translation. On the other hand, however, L1-L2 translation and non-European languages were less researched areas, and there was a lack of more meticulous attention paid to the translation product and consultation results.

2.5.2.3 Participants

A broad spectrum of translators of different levels has been covered in the previous studies. The following discussion centers on the number, identity and grouping of the participants studied in the reviewed researches.

The number of informants in the reviewed projects ranged from one in Krings (1988) to 723 in Atkins & Varantola (1998). However, a close look reveals an obvious gap between dictionary and translation studies in this respect. It can be seen from Table 2.1 that most of the lexicography projects had more than 40 subjects whereas most of the translation studies had no more than 20, with a dozen projects recruiting less than ten participants each. Although the sample size is usually determined by availability and specific research needs, it also has a lot to do with the data collection methods. While dictionary researchers mainly used the methods that were
convenient and applicable to a large number of informants, such as the lookup information sheet in form of multiple choices or blank filling, most of the translation scholars adopted the TAP method, which entailed long and hard effort made in transcribing the thinking-aloud audio or video recordings. According to Krings (1986), the length of the TAP transcriptions for his eight subjects amounted to as much as 214 typed pages. Mackintosh (1998), Varantola (1998) and Law (2009) were the only three dictionary researches that used the TAP method, and the size of their sample groups was 15, 4 and 4 respectively, being the bottom three among the lexicography studies. For translation studies, the two largest informant groups, with 32 and 59 people, were researched respectively in Wang and Xu (2012) and PACTE (2009), both of which were team projects. So, the TAP method seems to have a limiting effect on the sample size, especially in the studies by a single researcher.

The small number of participants can reduce their representativeness and the generalizability of the research findings (Krings, 2001; Orozco, 2003). This problem was more serious in the studies that attempted to compare the translation performance by stratified samples. For example, Tirkkonen-Condit (1987) just had one informant to represent professional translators and another to represent non-professional translators; similarly, Jääskeläinen (1987) had only two subjects in each of the two contrasted groups. Ronowicz et al. (2005), Gerlof (1988) and Zheng (2014) had 9, 12 and 18 participants respectively but they were divided into three subject groups. In fact, none of the studies with stratified samples had more than twelve participants in each of the subject groups. The small size made it impossible to test the statistical significance of the between-group differences because the minimum number of subjects in a sub-group has to be thirty to allow such testing (Gay et al, 2012); and the generalizability of the research findings based on undersized samples was largely reduced as a result.

The reviewed studies covered a very wide range of subjects. They included students at different levels and of various majors, language or translation teachers, professional translators, experienced dictionary users, and non-translator bilinguals.
However, university students were a major source of participants. Except five studies that focused solely on professional translators, all the other projects recruited students as informants, from both the undergraduate and postgraduate levels. The mostly-studied subject type was students learning translation, used in over half of the reviewed projects; the second largest group was language students, followed by students of other majors. About one third of the reviewed studies involved both professional and student translators. Other occasionally-used subject types included language or translation teachers (e.g., PACTE, 2009; Wang & Xu, 2012), senior high school students (e.g., Raudaskoski, 2002), and non-translator bilinguals (e.g., Gerlof, 1988). On the whole, students majoring in translation or foreign languages and professional translators constituted the main force of subjects.

A dozen of the reviewed studies divided the student informants into sub-groups for comparison and there were four ways to do so. The first method was to classify the students according to their level of study. Divisions and contrasts were made between freshmen or sophomores and graduating students (e.g., Tirkkonen-Condit, 1987; Jääskeläinen, 1987; Ehrensberger-Dow & Massey, 2008; Ronowicz et al., 2005) or between undergraduate and postgraduate students (e.g., Barbosa & Neiva, 2003; Ronowicz et al., 2005). This naturalistic classification is simple and economic but it may not always reflect the participants’ translation competence, especially when the sample size is small. The second method was to conduct a placement test before the experiment. Several dictionary studies stratified the subjects according to the pretest results. He (2003) set a English vocabulary test used by many other lexicography researchers; Li (1998) and Atkins and Varantola (1998) respectively made use of China’s College English Test (CET) and a placement test devised by a British-Council-approved language school in London. Such tests can make the subject grouping more objective and reliable, but they also mean extra work for the participants. The third method was to group the subjects according to the quality of the translation assignment done in the experiment (Jääskeläinen, 1990; Wang & Xu, 2012). This way, the task functions not only as a data eliciting method but also as a
placement test. Efficient as it is, the method should be used with caution because the
task used as a translation test must have adequate reliability and validity in order to
reflect the participants’ translation competence. The last method was to ask the
subjects to evaluate their language competence themselves, which was only used in
one dictionary study (i.e., Atkins & Varantola, 1998). As a classification method,
such self-assessment, though convenient, seems to be too subjective to be reliable.

From the above review, the following conclusions can be made. Many studies had a
small sample size and the TAP method seemed to have a limiting effect on it.
Translation students made up the majority of the subjects, followed by foreign
language majors and professional translators. Last, the methods used to group the
participants had their shortcomings as well as merits.

2.5.3 Research Findings

Many useful findings have been produced in regard to the translator’s lexical
consultation, but the following review focuses on the three areas that have a direct
bearing on this thesis. Section 2.5.3.1 deals with the effect of lexical consultation on
translation; Sections 2.5.3.2 discusses the features of level consultation at different
levels; and Section 2.5.3.3 looks into the findings about causes of consultation
failures.

2.5.3.1 Effect of Lexical Consultation on Translation

The findings of the reviewed studies confirmed that lexical consultation had a
positive contribution to the quality of the translation product. In the experiments
comparing translation done with and without use of dictionaries, the lookups
producing positive effect outnumbered those producing negative effect. For example,
of the 19 changes made with access to dictionaries in Livbjerg and Mees (1999),
seven produced positive effect and three produced negative effect while nine
produced no effect (i.e., a correct rendering was changed into another correct one, or
an error into another one). Raudaskoski (2002) discovered that the use of both a
bilingualized dictionary (monolingual dictionary with translation) and a bilingual one improved the subjects’ performance from the non-dictionary round. In Livbjerg and Mees’ (2003) experiment, of the 26 instances where lexical consultation changed the quality of the translated text, 21 led to satisfactory and five to unsatisfactory solutions—so the net effect was positive. Bogaards’ (1991) study on the usefulness of three different kinds of dictionaries found that dictionary use was advantageous and the group without using dictionaries made most mistakes, whose error rate was higher than that of the three dictionary-using groups.

Lexical lookups were also found beneficial in the studies that only investigated the translation process with access to consultation sources. According to Kiraly (1990), the rates of acceptable translations resulting from lexical consultation were around 50% for both professional and novice students. In Martin-Rutledge (1997), consulting a bilingual dictionary booklet was found to have a beneficial effect, especially in L1-L2 translation. Li (1998) discovered that 73% of the total 1,231 lookups were helpful while 27% resulted in wrong translation, and Frankenberg-Garcia (2005) found that 65% of the 146 lookups were successful in finding the right equivalents. In Atkins and Varantola (1998), the success rates of dictionary use for four groups of subjects with different degrees of language competence ranged from 40% to 60%. Similarly, the acceptance rates of the consultation results in Zheng (2014) fell between 48% and 62% for the subjects from three competence levels. Nord (2002) reported thirteen professional translators’ success rates of consulting different sources including specialists and various dictionaries, which varied between 50% and 80%. Laufer and Levitzy-Aviad (2006) studied the usefulness of four dictionaries, which helped the subjects achieving an average score of 27% to 80% for the translation task. Of the total 31 searches recorded in Raído (2011a), 28 were found to be successful—a very high success rate. All these figures seemed to suggest that there was a fair chance of finding the right equivalent through lexical consultation, which was contributive to the quality of translation.
In addition, a positive correlation was observed in several studies between the number of lookups and translation quality. Jääskeläinen (1996) found that weak translations were done with an average number of only 10 consultations while those graded as mediocre and good were done with an average of 18 and 20 respectively, suggesting a positive relation between intensity of consultation and translation success. In Livbjerg and Mees (1999), the subject producing the best translation conducted the highest number of lookups. Künzli’s (2001) two subjects achieving the best translation results were also found to have made considerable use of dictionaries. Raído (2011a) noted a similar correlation between the depth of research and the quality of translation.

Moreover, the effect of lexical consultation on translation was also described in some non-numeral ways and it was found that such effect was not always positive. For instance, Varantola (1998) found that the translation produced by the subject conducting the highest number of searches and lookups turned out to be the wordiest, featuring colloquialisms and lacking proper register-specific vocabulary and sentence structures; this lengthy and vague paraphrastic style was attributed to the usually unsuccessful attempts in finding better ways in dictionaries to express the message. House (2000) discovered that the translation produced with lexical lookups seemed to be more specific and accurate while the translation produced without lookups sounded more general and fluent; this was because the informants tended to focus on smaller units when having access to dictionaries and the lexical searches might have had disturbed their flow of thought.

Although the above findings can facilitate our understanding of the effects of lexical consultation on translation quality, yet it should be noted that most of the studies had a small sample size, ranging from four to twenty, and those with a larger sample had some flaws in their design of translation tasks. As Raudaskoski (2002) commented on his own project, “a test group of twenty is far too small to make any sweeping statements” and ‘considerably larger groups” should be investigated in future studies (Conclusion section, para. 1). House (2000) also pointed out that hers with ten
subjects was “a small study” (p. 149) and the results “might well be tested out in more extensive and more rigorous research” (p. 159). A few lexicography studies did have a much bigger sample size, but it happened that their translation tasks were not the translation done in the real-world sense. For example, the 732 subjects in Atkins and Varantola (1998) were merely asked to make five “multiple choice options on the correct L2 expression to fill gaps in a given translation of a given L1 passage” (p. 28); similarly, Martin-Rutledge’s (1997) 90 informants were required to do “a kind of bilingual cloze test” (p. 46); and the 75 students in Laufer and Levitzy-Aviad (2006) only needed to translate 36 isolated sentences. Bogaard’s (1991) had a medium-sized sample of 44 informants but they were divided into four contrastive groups, and such a subgroup size was far too small to allow testing the statistical significance of any between-group differences. To sum up, the small sample size and the assignment of unauthentic translation tasks seriously limited the generalizability of the findings about the effect of lexical consultation.

Another shortcoming of the findings reviewed here was that most of them lack detailed descriptions about the effects of lexical consultation. Although they empirically confirmed our assumptions about the usefulness of lookups in translation or proved the advantage of certain resources over others, we are still not clear about the components of the consultation effects, and the kinds of problems solved or unsolved through consultation. Of the studies reviewed above, only Livbjerg and Mees (1999) had a more detailed classification of the lookup effects, i.e., positive, negative and zero effects; but they did not further analyze the lookups that brought about such effects. Another study by Livbjerg and Mees (2003) reported that besides simple spelling corrections and solutions to cultural transfer problems, only seven of the consultation-induced 26 changes were genuinely quality-improving, yet there was no further examination about the kinds of improvements made there. Other researches also lacked such analyses after reporting the number or percentage of successful and failed lookups. Instead of delving into the effects of consultation, they examined the relative advantages of various dictionaries (e.g., Bogaards, 1991;
Raudaskoski, 2002; Laufer & Levitzy-Aviad, 2006), the frequency of use of monolingual and bilingual dictionaries (e.g., Kiraly, 1990; Jääskeläinen, 1996; Atkins & Varantola, 1998; Varantola, 1998; Zheng, 2014), use of other information resources than paper dictionaries (e.g., Künzli, 2001; Nord, 2002; Frankenberg-Garcia, 2005; Raído, 2011a), or lookup procedures (e.g., Kiraly, 1990; Jääskeläinen, 1996; Raído, 2011a; Zheng, 2014). Many of the studies also looked into the consultation purposes, such as searching equivalents or definitions, checking spelling, confirming hunches, looking for usage or grammatical information, etc. Indeed, findings about these aspects can tell us how the effects of lexical consultation are produced, but the questions still remain unanswered as to what constitutes such effects, what kinds of lexical problems are solved through lookups and what kinds are not. The answers to these questions are of significance to the training of consultation ability in translation as well as the understanding of lexical consultation in translation.

To conclude, previous findings confirmed that lexical consultation had a generally positive effect on translation. At the same time, their generalizability was restricted due to the small sample size or the unauthentic translation task; and there was a lack of detailed description of the effects of lexical consultation.

### 2.5.3.2 Between-group Differences in Consultation

The findings of the reviewed studies revealed the differences in lexical consultation between the professional and student translators and between informants from different levels of learning or proficiency. Such differences involved the following six aspects, namely, preference in dictionary types, range of resources used, consultation purpose, research depth, efficiency and attitude towards consultation resources.

First of all, compared with professionals, student translators were usually found to make more use of bilingual dictionaries and less use of monolingual ones, and such a difference also existed between participants from different levels of competence.
Englund Dimitrova and Jonasson (1999) discovered that the professionals used monolingual dictionaries more often than bilingual ones while the opposite was true of the students. In Barbosa and Neiva (2003), the undergraduate subjects made frequent use of bilingual dictionaries rather than monolingual ones whereas postgraduate students rarely consulted bilingual ones. Ronowicz et al. (2005) noted that nearly all the 22 lookups in monolingual dictionaries were conducted by professional and paraprofessional translators except one by a novice translator. In Jääskeläinen (1987, 1990), the fifth-year students and participants producing good translation made more use of monolingual dictionaries than the first-year students and participants producing poor translation. However, opposite results were also reported in a couple of studies. Künzli (2001) found that compared with the students, the professional translators made less use of monolingual dictionaries, who seemed to compensate for this by using other sources of information (such as parallel texts and grammars). Zheng (2014) recorded a very low percentage of monolingual dictionary consultations for all the subjects and the professional translators demonstrated no specific preference for monolingual over bilingual dictionaries. As Zheng rightly argued, the choice of dictionary types could be affected by many factors such as text style, time pressure and personal preferences (ibid.); and it might also be possible that completing the translation task did not require much use of monolingual dictionaries. Nevertheless, judging from the findings reviewed here, it seems to be a more commonly-seen phenomenon that in contrast to beginners, professional translators and advanced learners tended to use monolingual dictionaries more frequently than bilingual ones.

Second, professional translators used a wider range of consultation resources. For instance, taking a broader view of resources than dictionaries, the commercial translators in Fraser (1999) consulted various reference works and information sources, including possibly informative friends and relatives. Künzli (2001) found that the use of non-dictionary sources distinguished between the professional and student translators. In his research, over one third of the consultations by the
professionals were made up by the use of other translators, encyclopedias, parallel texts, grammars and newspaper while such sources were employed by only one student subject. In Asadi and Séguinot’s (2005) workplace study, the professional translators also used specialized references to look up terminology and Internet sources to find parallel texts or to compare the frequency of use of translation variants. According to Wang and Xu (2012), the subject groups with high and medium translation scores made more use of corpuses, websites and specialized dictionaries than the low-score group. All these findings show that for professionals or better translators, lexical consultation sources were not limited to dictionaries.

Third, differences existed in the consultation purpose between the stratified subject groups. Jääskeläinen (1987) discovered that the fifth-year students used dictionaries as a source of inspiration while the first-year students used them to learn the meaning. Fraser (1994) found that the translation practitioners used dictionaries as a stimulus for refining meaning and selecting an appropriate rendering rather than for establishing meaning. Similarly, in Zheng (2014), most of the professional translators’ consultations were aimed at optimizing expressions while the main lookup purpose of the semi-professionals and novice translators was to discover or verify the meaning of unfamiliar expressions. Such a focus on meaning in the lookups by subjects from lower levels of proficiency was also recorded in Gerlof (1988) and Wang and Xu (2012). In addition, professional translators and subjects with better proficiency were found to have more lookups to check word usages (Englund Dimitrova & Jonasson, 1999; Asadi & Séguinot, 2005; Ronowicz et al., 2005). To sum up, more proficient translators tended to make more use of consultation sources to refine meaning and check word usage while less experienced translators usually looked up to establish meaning.

Fourth, there were differences in research depth between different subject groups. Jääskeläinen (1987, 1990) found that good translators had an average of 1.9 lookups per search while poor translators had only 1.3 lookups. In Künzli (2001), this coefficient was 1.8 for the professionals and 1.4 for the students. Ronowicz et al.
(2005) noticed that the novice translators rarely used more than one dictionary for one search. Heeb (2012) found that a higher proportion of professional translators made adequate use of consultation resources to find solutions, and they went through more steps to solve the translation problems than the students. In Zheng (2014), the professionals used multiple reverse lookup methods and usually read through the entries patiently in order to find an ideal solution, but the novice translators rarely went through the consulted item and as a result tended to overlook valuable information. The practice of taking the first equivalent in the consulted entry, labelled by Krings (1986) as one of “translation principles” (p. 273) used by the language students, was also found in low-score subject group in Wang and Xu (2012). In a word, more experienced translators tended to have more diligent searches than novice translators.

Fifth, professional or better translators were more strategic and efficient in lexical consultation. Jääskeläinen (1987) reported that the fifth-year students were better at predicting what kind of reference work might contain the needed information and therefore they displayed greater efficiency in lexical search than the beginners. The professional translator in Krings’ (1988) was also found to make use of consultation sources in a more strategic and efficient way than the students. Englund Dimitrova and Jonasson (1999) noticed that professional translators followed some trodden paths that had been proven efficient in the past while Göpferich (2010) discovered that the professionals made more strategic moves, thus more efficient than the novices. In a case study of the consultation about a special term, Ehrensberger-Dow and Perrin (2009) found that the almost all the fourth-year students were successful and very fast in finding the needed information but only a third of the second-year students were so. Moreover, both Jääskeläinen (1987) and Zheng (2014) recorded a higher number of repetitive consultation made by the inexperienced translators, a sign of lower efficiency. In short, the novice translators lacked consultation strategy and efficiency as compared with professional and experienced ones.

Last, the professional translators tended to adopt a skeptical, critical or investigative
attitude towards the consultation sources. A general skepticism about the dictionaries was detected among the commercial translators in Fraser (1994), and the paraprofessional and professional translators in Ronowicz et al. (2005) were also found not always trusting the equivalents offered in reference works. In Englund Dimitrova and Jonasson (1999), the professional translators held a critical view about the quality of dictionaries, whereas an investigative attitude was demonstrated in the process of consultation by the professionals in Zheng (2014). In contrast to such attitudes, the non-professional and inexperienced translators tended to be reliant on lexical consultation sources during the translation process (Englund Dimitrova & Jonasson, 1999; Ronowicz et al., 2005; Zheng, 2014).

The above findings revealed the disparities in lexical consultation between professional and student translators as well as between more experienced learners and novices. Such contrast is no doubt pedagogically significant in that it suggests a direction or an ultimate goal for translator training by telling us what attributes a professional translator possess. But on the other hand, an important question still remain unanswered as to what we should teach in order for our students to make better use of reference sources (Ilson, 2001) or to conduct consultation like the professionals. We need to know about the steps a novice takes in order to reach the professional level since nobody can attain professionalism in lexical consultation overnight. About twenty years ago, Fraser (1996) pointed out that the transition from the unsatisfactory student level to the professional expertise was not tackled systematically. Orozco (2003) also criticized the lack of research on “the progression involved between the two levels of competence” and “the necessary steps involved in the trainee translator’s transition to the status of professional translator” (p. 14). But until now, there has been little change to such a situation as far as lexical consultation research is concerned. Furthermore, from the above review, we can see that most of studies that divided the student informants for comparison had only two subgroups, usually one representing the completing students and other the novices. More often than not, the differences found between them turned out to be quite
similar to those between professional and student subjects. As a result, the development of the translator’s lexical consultation ability still remains unknown to us. According to Toury (1991), it is necessary to know “not only what it takes to perform translation, but also what it takes to become a translator” (p. 62). Therefore, there is a need for more detailed research on the evolution of the translator’s lexical consultation ability.

### 2.5.3.3 Consultation Failures and Their Causes

Although failed lookup was not widely studied by the reviewed projects, about one fourth of them addressed the issue. Some examined the errors made in translation after lexical consultation, and some also looked into the causes of these mistakes, including the flaws of dictionaries, consultation features or moves that lead to undesirable results in translation. The findings about these aspects are discussed as follows.

In several studies, lexical units whose meaning was dependent on situational or textual context were found to be a source for consultation failures (Atkins & Varantola, 1997; Bogaards, 1998; Li, 1998; Varantola, 1998). The translator might have neglected the context when making decisions, or the particular situational or textual meaning was not given in the consultation sources. Another type of lexical items prone to errors was those units whose integration into the translation entailed adaptation to the surrounding text (Raudaskoski, 2002) or consideration of the stylistic features (Varantola, 1998). Other items likely to be wrongly used include polysemous words (Atkins & Varantola, 1997; Li, 1998), infrequent or unfamiliar words (Varantola, 1998; Bogaards, 1998), proper names (Englund Dimitrova & Jonasson, 1999) and idiomatic paraphrases (Varantola, 1998). Faux amis (false friends) and allosemic words (words with familiar forms but used in an unfamiliar idiomatic sense) were also on the list of mistake-prone items (Bogaards, 1998).

The causes of the failed lookups were attributed to the lexical sources as well as their users. The lack of examples and collocation information, inconsistency in compiling
principles, and misleading information on the part of dictionaries were blamed for causing consultation failures (Meyer, 1988; Kussmaul, 1995; Atkins & Varantola, 1997; Varantola, 1998). On the other hand, the translators were also held responsible for lacking knowledge about dictionaries and their pitfalls (Meyer, 1988) and having some naïve consultation principles, such as taking the first, or the most literal equivalent in the entry (Krings, 1986). Some undesirable consultation features were found as the contributing factors behind failed lookup attempts, such as excessive reliance on lexical sources (Englund Dimitrova & Jonasson, 1999; Kussmaul, 1995; Livbjerg & Mees, 2003), narrow focus on lexical units and neglect of the context (Livbjerg & Mees, 2003). In addition, certain faulty consultation moves were observed and recorded, such as selecting an inappropriate dictionary, choosing a derived word as the headword (Krings, 1986), giving up an inferred meaning or equivalent that was not found in the dictionary (Kussmaul, 1995).

The above findings are of practical significance to lexicographers, translation students and teachers. The translator’s failed lookups can reflect his unsatisfied consultation need as well as the shortcomings of dictionaries. Such feedback would enlighten lexicographers about the future improvements in dictionary making. Moreover, as Corder (1967) points out, the analysis of the learner’s errors can provide useful information for language teaching as well as learning. Similarly, the above findings about failed lookups can tell us what problems the students still have with lexical consultation in translation, thus suggesting what need to be taught and learned.

However, there were still some inadequacies in the above findings about consultation failures. First, due to the lack of concentrated effort in studying failed lookups, the research results seemed to be reported in a fragmentary and anecdotal way. In the projects reviewed here, the examination of consultation errors only constituted a small part, and there were few in-depth analyses of them apart from some classification of errors and presentation of their proportions. This might be partly because of the small sample size, which made it difficult to gather sufficient
data for more detailed investigation. Second, most of the classifications of the consultation mistakes tended to be fortuitous and arbitrary, often lacking a sound theoretical basis. Moreover, dividing the lookup errors according to word types seemed to be more meaningful and relevant to dictionary making than translation research and training. In fact, almost all the findings about the error-prone word types come from dictionary studies. Last, as only a few studies related the error analysis with the lookup process (i.e., Atkins & Varantola, 1997; Englund Dimitrova & Jonasson, 1999), there was a lack of description of the undesirable moves that led to mistakes in the translated text. Generally speaking, a study of the lexical lookup process gives us an opportunity to see the observable steps taken during consultation, thus making it possible to trace the faulty moves that bring about unwanted results. This would help pinning down the undesirable consultation behaviors. Unfortunately, such a potentiality has not been fully tapped in the previous studies. To get a full picture of consultation failures and their causes, it is necessary to make a more concentrated research effort, with a sufficient sample size, a theoretically sound classification system, and an integrated approach that combines error analysis with process description.

2.6 Summary of Chapter 2

This chapter has first conducted a review of the non-research literature pertinent to the present thesis. A brief look at the history of exploration into translation process, mostly studied in its narrow sense, shows that such research is characterized by the progressive advancement, interdisciplinary nature, and pedagogical purpose and that an approach combining process- and product-oriented perspectives seems to be a more productive way to look into translation. When narrowing the focus to lexical consultation, it is found that the reference ability is recognized as the translator’s sub-competence, involving the use of various resources and serving a practical function to solve problems, and there are various models describing lexical consultation as a problem-solving process. Moreover, an overview of the literature on inverse translation reveals that translating inversely into English and training
inverse translators are a practical need in today’s world. Anyone working into English as a non-mother tongue is on a developmental path with regard to that language (Campbell, 1998). Placing inverse translation in the context of ESL learning enables borrowing from ESL theory to account for the translation learning and viewing learners’ errors as valuable research data.

In the review of the research literature, over forty projects have been examined in terms of their research scope and aims, methodology and findings. Although most studies looked into the lookup process, effect of lexical consultation and dictionary users’ attributes, only a dozen projects focused on lexical consultation and at the same time paid due attention to translation, which suggests a lack of concentrated effort made in the targeted research area of this thesis. Identifying between-level differences, addressing the newly-emerged reference resources and serving didactic aims are found as obvious characteristics of the reviewed research. With regard to research methodology, the previous studies demonstrated the advantages, disadvantages and applicability of various data collecting methods and provided a widely-adopted multi-method approach to allow triangulation, a useful paradigm for designing the translation task, and a feasible method to elicit data about the effect of lookups. On the other hand, some less researched areas can be seen from the translation tasks, such as inverse translation and non-European languages, and there was a neglect of the research value of the translation product and consultation results.

A wide spectrum of subjects was recruited in previous studies, but most of them suffered a small sample size, which restricted the amount of data and the generalizability of the findings. In addition, various criteria or methods were used to divide the informants into subgroups for comparison, each with obvious merits and shortcomings.

Producing plentiful findings, the reviewed studies confirmed a generally positive effect of lexical consultation on translation and revealed a marked contrast between professional translators and novices; useful information was also provided about the error-prone word types, shortcomings of reference sources, and undesirable
consultation features or moves. However, there existed an absence of findings about the evolution of the consultation ability from the novice to professional level, and a want of detailed and systematic description of the consultation effect and causes of lookup failures. Moreover, the generalizability of many findings was restricted by the small sample size and use of unauthentic translation tasks, and the research depth might have been affected by a lack of concentrated effort, a sound theoretical basis and an integrative approach to consultation process and results.

In a word, this chapter has outlined the background and theoretical perspectives that inform or underpin the present study, and it has also identified the insights and shortcomings of the previous studies, thus obtaining valuable examples to follow and establishing the need for further research.
Chapter 3

Theoretical Framework

Chapter 3 establishes an integrated theoretical framework to guide this research on lexical consultation in translation. As the object of study is lexical consultation taking place during translation, this thesis needs a model of the translation process to show the context of lexical lookup; as this study aims to examine both the consultation process and results, it needs a model to describe the lookup process and a theory to analyze the results of consultation as shown in the translated text. To satisfy these research needs, a theoretical framework is built up to combine (1) a background model of translation process that includes lexical consultation and shows its position in translation, (2) a descriptive model of lexical lookup in translation that outlines its major components for studying, and (3) an analytical model of second language (L2) lexical development to account for the translator’s use of lexical items extracted from reference sources (see Figure 3.1).

![Diagram of three models integrated to build the theoretical framework.](image)

*Figure 3.1 Three models integrated to build the theoretical framework.*
In the following, Section 3.1.1 provides an overview of Bell’s (1991) psycholinguistic model of translation process. Necessary adjustments are made to it in Section 3.1.2 so as to fit the present study and to place vocabulary lookup in the context of translation. Next, Hartmann’s (2001) model of consultation process is introduced in Section 3.2.1 and adapted for describing a translator’s lexical search in Section 3.2.2. The modified model is tested for examining the three focused phases of the lookup process in Section 3.2.3. After that, Section 3.3.1 gives a detailed account of Jiang’s (2000) psycholinguistic model of lexical development in L2, which postulates three stages of vocabulary acquisition. Then, Section 3.3.2 discusses the applicability of Jiang’s theory to this thesis, and in Section 3.3.3, his model is modified for investigating the integration of the looked-up item into translation. Last, Section 3.4 presents a summary of this chapter.

3.1 Background Model of Translation Process

To develop a process model that contains lexical consultation and reflects its role in translating, it is necessary to understand what is going on during the translation process and at what point in that process lexical lookup cuts in. This entails a model which can clearly show the steps to be taken to complete the translation task. There have been various process models, developed with different emphases and for different purposes. Such examples include Nida and Taber’s (1969) three-stage model originally meant for biblical translation, Krings’ (1986) tentative model featuring five types of translation strategies, Nord’s (1991) looping model for functional analysis of the source text, Hönig’s (1991) model of an idealized translation process describing the translator’s mental processing, Gile’s (1995) two-phase sequential model for pedagogical purpose, and Kiraly’s (1997) model of the translator’s mental space. While these models are instrumental in serving their particular purposes, they tend to lack an explicit presentation of the integrant parts at each stage. Their division of the components seems too general to allow the translator’s reference act to be seen in the whole translation process. Most of them do not take into consideration the process of lexical decision in translating.
Bell’s (1991) model of translation process, however, is found to be conducive to the purpose and needs of the present study. There are three reasons for choosing it as a part of the theoretical framework in this research. First, it provides an elaborate flow chart of the translation procedure, featuring clearly-defined phases and their constituent elements. More important, the process of lexical choice is addressed in this model. The postulation of frequent lexis store and lexical search mechanism as two interactive components in syntactic analyzer and syntactic synthesizer (see Figure 3.2) makes it easy to spot in the whole process the place for possible lexical consultation. Second, Bell’s is a psycholinguistic model, which not only describes the translation process but also outlines the necessary knowledge and skills a translator must have (Silveira, 2008). It covers almost all the essentialities that constitute translation competence. This competence orientation coincides with the one of the purposes of this study, that is, to describe the development of the translator’s reference ability. Last, Bell’s (1991) model “derives from work in psycholinguistics and in artificial intelligence on real time natural language processing” and “also represents an updated version of earlier models of the translation process itself and an amalgamation of elements of other models” (pp. 43-44). Its validity was tested out in a detailed and convincing illustration of the actual process of translating a short French poem into English. In other words, its validity, competence orientation and detailed description of the process components make Bell’s model an appropriate choice for this study of lexical lookup in translation.

3.1.1 Bell’s Model of Translation Process

Bell (1991) divides the translation process into the analysis of the source language text and the synthesis of the target language text, where there are three specialized areas of operation, i.e., (1) syntactic, (2) semantic and (3) pragmatic. The analysis process is composed of a visual word recognition system and syntactic, semantic and pragmatic analyzers while the synthesis process is made up of pragmatic, semantic and syntactic synthesizers and a writing system (see Figure 3.2).
Figure 3.2 Bell’s (1991, p. 59) model of translation process.
Considering the focus of this study, the following discussion will center on the components relevant to the translator’s lexical consultation, namely, the frequent lexis store, lexical search mechanism, semantic representation and the synthesis process.

**Frequent Lexis Store**

Bell (1991) defines frequent lexis store (FLS) as the mental (psycholinguistic) correlate of the physical glossary or terminology database, i.e. an instant “look-up” facility for lexical items both “words” and “idioms” (p. 47). The source language and target language each have their own frequent lexis store. In the analysis process, when the parser has completed the task of analyzing the target language clause, it will be passed on to the FLS to find the lexical items that can be matched with the items in the clause.

**Lexical Search Mechanism**

However, if there is any lexical item that cannot be matched with items already stored in the FLS, the lexical search mechanism (LSM) will be activated to explore or make sense of the item. Here Bell mentioned “the frustrating ‘tip-of-the-tongue’ phenomenon which often afflicts the translator” and the “inability to ‘find the right word’ or, at times, any word at all” (ibid., p. 50). However, the LSM provides a tool to solve this lexical problem. The translator may (1) assign a meaning to the item on the basis of its surrounding co-text, (2) ignore the item and hope that increasing information of a contextual kind will provide a meaning, or (3) search in memory for similar items, making use of some kind of internal thesaurus. When the problem is somehow solved, the clause will exit the syntactic stage and enter the next processor.

**Semantic Representation**

After the three-way analysis of a source language clause, the result is a semantic representation—“a set of abstract, universal concepts and relationships, which represents the whole of the thought expressed in the clause” (ibid., p. 56). The semantic representation is language-free, different from the language-specific clause.
But it contains the syntactic, semantic and pragmatic information analyzed out from the original source language clause, such as the clause structure, propositional content, thematic structure, register feature, illocutionary force and speech act. At this point, the semantic representation is stored in the reader/translator’s long-term memory and will serve as the basis of the three-way synthesis of a target language clause if a decision is made to translate it. Meanwhile, having absorbed all the analysis, the idea organizer and planner are ready for further actions, with the former organizing the speech acts in the texts and the latter in charge of making plans for realizing goals of all kinds (Bell, 1991).

**Synthesis Process**

As mentioned above, the synthesis process is composed of the pragmatic, semantic, syntactic processors and a writing system. According to Bell (ibid.), if the planner decides to translate, the pragmatic synthesizer will first take in all the information provided by the semantic representation, and then determine whether to preserve or change the original purpose, the thematic structure and the stylistic features with considerations of discourse parameters of tenor, mode and domain. Next, after receiving a signal of the illocutionary force, that is, the purpose, the semantic synthesizer will work out structures to convey the propositional content and create a satisfactory proposition to pass on to the syntactic synthesizer. The proposition produced here carries the content as well the style features, which are determined by the semantic and pragmatic synthesizers respectively.

When the syntactic processor absorbs the information from the semantic synthesizer, the FLS of the target language will be scanned for suitable lexical items, and the frequent structure store (FSS) will also be checked in for an appropriate clause-type to represent the proposition. If there is no available clause in the FSS to carry the particular meaning, the parser will play the role of a syntactic synthesizer before the writing system is activated to realize the clause as a string of symbols in the target language. Here, Bell does not explain explicitly what will happen if no appropriate lexical item can be found in the FLS to express the processed semantic
representation. But from his flow chart and his previous discussion of the translator’s “tip-of-tongue” frustration, it can be inferred that the problem has to be resolved by resort to the LSM of the target language.

When proposing this model, Bell (1991) also rightly points out that the process is an integrated, cascaded and interactive one, rather than a course where one action follows another in a sequential order. Although it is compulsory to go through each stage, there is no fixed order and “back-tracking, revision and cancellation of the previous decisions are the norm rather than the exception” (ibid., p. 40). Moreover, quick passing through some stages, going by a default track, and combining bottom-up and top-down procedures are all common practices in the analysis or synthesis process.

3.1.2 Adapted Model of Translation with Lexical Consultation

Elaborate and comprehensive as it is, Bell’s model of translation does not involve the translator’ lexical consultation. Following a psycholinguistic approach, it focuses on what is happening in the translator’s memory systems. However, Bell (1991) did address the translator’s “tip-of-the-tongue” phenomenon and inability to “find the right word” (p. 50). The same trouble in vocabulary retrieval was also used by Levelt (1989) as evidence for his model of two-stage lexical access in speech production. Applying Levelt’s (1989) blueprint of the speaker to L2 speech production, Poulisse (1993) explains the problem as the inability of the formulator to retrieve from the mental lexicon “the lemma that best matches the semantic information carried by the corresponding chunk of the preverbal plan” (Kormos, 2006, p. 10). Nevertheless, according to Bell (1991), when the FLS does not have the needed lexical item, the LSM will be activated to “make sense” of the problematic item. He proposes three strategies to solve the problem, namely, inferring from the co-text, waiting for more information and searching for similar items from the mental thesaurus (see Section 3.1.1). To illustrate how the LSM works, Bell cites an artificial example of understanding the word *ashlar*. According
to him, “unless the reader knows that the dictionary definition of *ashlar* is ‘a carefully finished and well-fitting building stone’, the lexical item cannot pass through the FLS and must be processed by the LSM” (ibid., p. 50). He goes on to show how the last of the three approaches might lead to a tentative meaning of the word in question: \( \text{ash} + \text{poplar} = \text{ashlar} \), that is, a *hybrid tree*. This, of course, is just an illustrative instance, but it reveals a possible situation which is relevant to the present study. That is, the LSM may fail. It may be unable to make sense of a lexical item that cannot be matched with the items already stored in the FLS, as is shown in the case of *ashlar*. The same situation may also arise in the synthesis of the target language text when no proper lexical item can be found in the FLS and through the LSM to express the proposition produced by the semantic synthesizer. In this case, the translation process will be blocked since the proposition cannot pass through either the FLS or LSM to the next processing stage. This brings up the question of what else can be done to overcome this lexical difficulty in order for the translation process to go on.

Interestingly, when giving the example of *ashlar*, Bell indicates that knowing the dictionary definition of the word would have spared translator the necessity of the LSM processing (see the quote above). In other words, if the translator grasps the meaning of the word by consulting some reference sources, he can bypass the LSM and move on to the next processing stage. In reality, when a translator meets such an unknown word as *ashlar*, it would be a natural reaction for him to look it up for its definition if he decides to translate it and has some reference sources at hand. Such possibility is even higher for a student translator, whose reliance on lexical consultation has been confirmed by many empirical studies (e.g., Krings, 1986; Tirkkonen-Condit, 1987; Livberg & Mees, 2003). Of course he may resort to other resources (like, asking a colleague or fellow student), but consulting reference works is surely a practical choice he can make in order to pass on the phrase being processed to the next stage.
As a possible solution to the lexical problem that cannot pass through either the FLS or LSM, lexical consultation can function like these two parallel components in the translation process. When the FLS is short of words, lexical consultation sources can serve as an extension of the limited mental lexicon; when the LSM fails to make sense of an item or find a proper word to express the processed proposition, vocabulary lookup may lead to the needed information or item. Serving the same function as the FLS and LSM, lexical consultation can be seen as an alternative to them. Thus in the process model of translation, *lexical consultation* can be placed as a possible stage beside the FLS and LSM (see Figure 3.3).

*Figure 3.3* Adapted model of translation process with lexical consultation.
It must be noted that lexical lookup is an observable behavioral process while Bell’s model is a psycholinguistic one describing the mental process of translation. Therefore, it is put outside of the boxes of memory systems.

Apart from the placing of *lexical consultation*, other changes are made to suit the present study. A major modification is the omission of the elements which are not focused on in this thesis. It must be made clear that such omission does not mean that they are not there or they are not functioning. They are left out only to show that they are not the focal points of this research. For instance, another box of *lexical consultation* should have been added beside the source language *FLS* and *LSM* in the syntactic analyzer because inverse translators also need lexical consultation for understanding the source text in their native language. But since this study aims to explore lexical consultation for production rather than for reception purpose, the translation task used in this study is about a common topic intended for the general public so that the translator would not have much difficulty in analyzing and understanding the source text in his mother tongue (see discussion in Sections 2.4.2.2 and 4.3.3). The analysis process would be mostly passed through by taking what Bell (1991) called the “default track” (p. 47). Therefore, the box of *lexical consultation* is not added to the syntactic analyzer, and the components in the syntactic, semantic and pragmatic analyzers are left out.

Moreover, as the task used in this study is text-type evident with a clearly stated translation brief, the boxes of *idea organizer, planner, translate?* and the components in the *pragmatic synthesizer* are also taken out of the model. So are the *visual word recognition* and *writing systems* for they will not be discussed in this thesis. Besides, the *source language text* and *target language text* in the original model are changed to *Chinese* and *English text* respectively to show the language pair addressed in the present study. In addition, the *parser* and *frequent structure store*, both in charge of the structure forming, are merged to be *structure formers* for the sake of convenience. Combining or excluding the above elements does not mean that they are not important in the translation process. Such simplifications are merely
made for the purpose of highlighting the processes and components that are most relevant to this research.

In spite of the omissions, the adapted model still displays a complete translation process, with all the major stages preserved from the original one. It can well serve as a framework to contextualize the lexical lookup process to be explored in the study. The modified flow chart clearly shows where vocabulary consultation is located in the translation process. Besides, the model also reveals the function of lexical consultation by placing it parallel to FLS and LSM as an alternative processing stage. Moreover, the chart is also indicative of the relations and interactions between lexical consultation and the processing stages before and after it, such as what needs to be accomplished prior to the reference act and how the result of the lookup would be processed at the next stage. Before the consultation, for instance, the semantic representation has been processed into a proposition by the pragmatic and semantic synthesizers, where decisions are made on its style and content; and after the lookup, a found lexical item will be integrated into the text being created. In brief, this adapted model provides an informative framework that enables us to see the context and role of the lexical lookup process to be studied.

3.2 Process Model of Lexical Consultation

The need for a theory describing the consultation process is self-evident in this study. More or less similar schemas of the lookup procedure have been proposed by lexicography researchers, including Scholfield (1982, 1999), Nesi (1999), Bogaards (1993, 2003) and Hartmann (1989, 2001). Of them, the first two scholars focused on the dictionary use in comprehension while the last two designed models applicable to both reception and production. However, they all contain the key stages such as problem identification, decision to use a dictionary, search and extraction of the needed information, and exploitation of the obtained information.

In this study, Hartmann’s (2001) model will be used to describe the consultation process. The decision to choose this model is guided by the following factors. The
recursive flowchart (see Figure 3.4) was built up by combining various scholars’ descriptions of the consultation process and drawing on his earlier diagram (Hartmann, 1989). Besides, the model is concise and explicit, and the procedural stages are suggestive of the knowledge and skill needed to pass through them. For example, the bracketed annotations added to the *external* and *internal searches* indicate that the understanding of macrostructure and microstructure is required in order to go through the stages of information search. More important, Hartmann’s model contains all the major components of the lookup process, some of which will be observed and explored in this thesis. Thus, it will be adapted and applied to account for the translator’s consultation process in this study.

![Diagram](https://via.placeholder.com/150)

*Figure 3.4* Hartmann’s (2001, p. 91) model of dictionary consultation process.

### 3.2.1 Hartmann’s Model of Dictionary Consultation

Hartmann (2001) divides the dictionary consultation process into seven stages. They are (1) identifying a problem, (2) determining the problem word to look up, (3) selecting a dictionary, (4) searching in its macrostructure for the headword, (5)
searching in the microstructure for the needed information, (6) extracting the data, and (7) integrating it into the task that first prompted the lookup process (see Figure 3.4).

A close look at the seven steps reveals that they can be categorized into three major stages, namely, the problem finding phase comprising [1] and [2]; the dictionary access including [3], [4] and [5]; and the problem solving phase containing [6] and [7]. The whole process starts from and ends in USER CONTEXT, which is the activity the user is engaging in, such as reading, writing or translating (ibid.).

Hartman (ibid.) admits that his was an extremely simplified model of the dictionary lookup procedure, which is not meant to encompass all the possible complexities that may arise from all reference acts. The purpose of designing such a model is to help identify the major components of the process for the convenience of further studies.

3.2.2 Adapted Model of Lexical Consultation in Translation

Hartmann’s is an all-purpose model of dictionary use, which can be used to describe dictionary reference act in almost any activity. To adapt it to the present study, a major change will be first made to the user context, together with the renaming of the first step of lookup process. Another important change has to be made so that the model can be used to describe the use of various newly-emerged consultation resources other than dictionaries. Some graphic adjustments will also be introduced to maintain formal consistency with the model of translation process.

Let us start with the user context. The subjects of this study are student translators rendering an article from Chinese, their native language, into English. It is assumed that their lexical consultation mainly occurs in their synthesis of the English text, which is the focus of the present study. Using the model of translation process discussed in Section 3.1.2, we can see a clearer picture of the user context. According to the model, when the semantic representation goes through the
pragmatic and semantic synthesis processes, a satisfactory proposition will be produced, with its content and style already determined. The next step is to pass the FLS or LSM so that a proper lexical item can be found to express the proposition. If the FLS and LSM fail, a lexical problem comes up, calling for lexical consultation. So the user context is that the translator, during the syntactic synthesis, needs to solve a lexical problem in order to express the proposition whose content and style have been determined. Thus, the broad context is the translator’s synthesis of the English text while the narrow one the syntactic synthesis. To show them as the user context, the whole synthesis procedure, together with the resultant semantic representation from the analysis stage, is included in the adapted model in Figure 3.5.

![Figure 3.5 Adapted process model of lexical consultation in translation.](image-url)
Correspondingly, the first step of the consultation process, originally named as *activity problem*, is changed to *identifying lexical problem* because the activity that triggers the reference process is already indicated by the adapted *user context*.

Before making modifications to Hartmann’s model to include electronic and on-line dictionaries as well as web search engines and on-line corpora, it is necessary to compare traditional dictionary lookup and consultation to the newly-emerged reference sources. Both types of consultation start with identifying a lexical problem and determining a problem word, the first two steps in consultation, and end with extracting the wanted data and integrating the found information, the last two steps. The differences lie in the third, fourth and fifth steps. First, the translator ready to solve a lexical problem through consultation may choose from sources other than paper dictionaries. In that case, the external search is not done by searching the problem word in the macrostructure of a dictionary but by typing it into some search box (or by reading it aloud if speech recognition is available). For electronic or on-line dictionaries, the internal search is still done in the microstructure; but for web search engines and corpora, the search area is a newly opened web page or information box. In spite of these differences in search and retrieval mode, the operative functions of these lookup moves remain unchanged. Like dictionaries, web search engines and on-line corpora can also be used for lexical lookup though they may serve different consultation needs; turning the dictionary pages for the problem word and keying it in have the same purpose of locating the sought information; both scanning the microstructure of a dictionary and reading through the web page or information box are steps made to obtain the needed data. So it can be said that the steps taken in traditional dictionary lookup and consultation to the new sources for lexical information may look different from outward but are the same in essence.

Based on the above analysis, two adoptions are made to the consultation model. First of all, the third step *selecting dictionary* is replaced by *selecting consultation source*. Second, *macrostructure* and *microstructure* are deleted for being dictionary-specific and at the same time, the fourth and fifth steps are redefined to cover consultation to
sources other than paper dictionaries. *External search*, originally referring to “searching in the dictionary macrostructure for the headword,” now has an extended meaning of “keying problem word in the search box;” and *internal search* is broadened to include “information search in the opened web page or information box.”

As can be seen, the *syntactic synthesis* is the activity that prompts the reference process, and it is also where the result of the reference goes for further processing (i.e., structure forming). The circular process in Hartmann’s model is actually preserved in the new model, except that the seven steps are now arranged in a bottom-up vertical manner with arrows in between to show direction. These changes are made to keep consistent with the flowchart of the translation process. Moreover, *problem finding*, *reference source access* and *problem solving* are added beside the seven steps to show that they can be grouped into three more general categories for the convenience of the following discussion; and a box named *text of reference source*, replacing the original *dictionary text*, is put in the model pointing to the fourth, fifth and sixth steps, showing that they involve the text of the consulted reference source.

### 3.2.3 Application of Adapted Model of Lexical Consultation

In this section, the adapted model of the consultation process will be used to describe the specific reference moves in the translation scenario to be studied in this research. Meanwhile, three focal points, namely, determining problem word, internal search and integrating information, will be picked out for studying from the seven lookup steps according to their relative importance and relevance to this research. Special attention will be given to the characteristics of the translation task and subjects to be used in this study. As mentioned, the informants will be asked to translate from Chinese, their native language, into English, a foreign or second language. Such a translation direction determines the productive nature of the task. According to Rundell (1999), L1-to-L2 translation, like speaking and writing, is a typical
productive skill as opposed to the receptive ones such as listening, reading and L2-to-L1 translation. This productive orientation has significant bearing on the consultation process. Another noteworthy factor is that the participants are university students with at least seven years’ experience of using various lexical consultation resources. They may not be highly experienced users but they are not first-time users, either. Such features of the subjects and translation task will be taken into account in the following discussion of the lookup procedures.

Problem Finding

The first step at this phase is identifying lexical problem. In a productive task such as L1-to-L2 translation, the lexical problems usually fall into two kinds. The first is a void of an English lexical item on the part of the translator to express some concept of the proposition produced by the semantic synthesizer. The second type is the translator’s uncertainty about an English lexical unit found in his FLS or through his LSM. He may want to confirm its spelling, meaning, usage or grammatical features. In both cases, it is the need to represent certain concept that prompts the lexical problem and search.

To illustrate the two situations, a clause will be taken out as an example from the translation task used in this study:

……(学生)不许穿拖鞋在校园里行走。

Suppose the clause has already passed through the all the processors before the syntactic synthesizer and a proposition has been generated with its content and stylistic features specified. However, the translator now has a lexical problem when trying to express the concept of underlined term 拖鞋. In the first situation, he does not know how to express it in English, which means that the needed item cannot be found either in his FLS or through his LSM. In the second, he has searched out a word for the concept but is not sure about its spelling, meaning or usage. In both situations, a lexical blank needs to be filled in the English clause being synthesized: …(students) are not allowed to walk in ____ on campus.
To solve the problem through lexical consultation, the translator has to determine what word to look up. With a problem of the first type, he does not know how to encode the concept of 拖鞋 in English, or does not even know whether the needed lexical item exists or not in English (Rundell, 1999). What he can do is to go back to the source language text to trace the origin of the concept, that is, the Chinese term 拖鞋. He has to use it as the problem word in the lookup and here the motivation for reference is to look for its English equivalent or translation. However, when the problem is of the second kind, the translator just needs to check out certain aspect of the English item he has found. Thus, the problem word is an English item, which, in our example, might be *slipper*, *sliper*, or even *sleeper*; and the lookup motivation is to check or confirm it.

However, determining an appropriate problem word is not always as easy as is shown in above. In the case of lexical void, for example, it is not rare that the equivalent of the Chinese term traced cannot be readily found in consultation sources or it may turn out to be inappropriate. A typical example is a rather difficult phrase 喂哺式 from the translation task used in this study. Then the translator may have to reconsider the decisions he has previously made on the content and style during pragmatic and semantic synthesis and reshape the original concept accordingly. In this way a new problem word can be found on basis of the modified concept so as to continue the lexical search.

As a process of trial and error, selecting a proper problem word can be a demanding task during the consultation. Theoretically, it entails a series of appropriate decision-making at all the processing stages before the syntactic synthesis. In other words, behind the judicious selection of a problem word are the knowledge and skill needed to pass through all the source language analyzers, and the pragmatic and semantic synthesizers of the target language, which involve most of components of what Bell (1991) calls as “the translator expert system” (p. 40). According to him, the system is made of (1) a knowledge base comprising the knowledge of source and
target languages, text-type, domain, and contrastive knowledge of each of the above; and (2) an inference mechanism for the decoding and encoding of texts (ibid.).

Considering that the subjects of this study should have little difficulty in understanding the source language text, the most pertinent factors affecting the choice of problem word are the decisions made on the content and style when the semantic representation is processed by the pragmatic and semantic synthesizers. The concept in question, with its content and stylistic features, constitutes the basis of the problem word, which, in return, is the lexical realization of the concept. In addition, at the starting point of the reference act, identifying the problem word is also a crucial step that will directly affect the rest of the process and the result of the consultation, for an inappropriate choice will result in a wrong word incorporated in the target text. Therefore, as an important step that links the precedent translation procedures and the lookup process, determining problem word will be made an area of focus in this study.

Reference Source Access

The first two steps at this stage are selecting reference source and external search. If the problem word is a Chinese item, the reference source has to be bilingual, such as a Chinese-English dictionary. With an English problem word, the translator can choose from both monolingual and bilingual sources, such as English monolingual or English-Chinese bilingual dictionaries. Having chosen a reference source, the translator will start the external search. He will look for the needed headword by searching through a paper dictionary’s macrostructure, that is, “the ordered set of all lemmata (headwords)” (Hausmann & Wiegand, 1989, p. 328), or typing the sought item into some search box. If the headword cannot be found, such as sliper, or there is no results found, the translator will have to change to a substitute word or go to another source to start a new search.

When the headword is found or typed in, the search will go on in the reference source. For dictionary lookup, internal search is made in the microstructure, “an
ordered structure made up of classes of items which have the same function” (ibid., p. 344). The microstructure of a typical Chinese-English dictionary usually contains the headword’s character pattern, pronunciation, English translation or equivalents; its collocations, example phrases/sentences and their English translation (e.g., Wu & Cheng, 2005; Wu, 2010). Some dictionaries also provide part of speech, register information. In an English dictionary, the microstructure generally contains formal information such as spelling, morphology and pronunciation of the head word, and its semantic information including its meaning and usage in particular contexts (Roberts, 1997).

Figure 3.6 Examples of dictionary microstructure.

Figure 3.6 shows the contents of the entry 拖鞋 or slipper from two dictionaries widely used by Chinese students and an online English dictionary. If the content shows that the entry is not the wanted item, such as sleeper, or the needed data cannot be found under the entry, such as the usage information of slipper, the translator has to go back to the previous steps to pick up a new problem word or try another reference source.
Results of your search
Your query was
slipper
Here is a random selection of 50 solutions from the 117 found.

A0D 1327 On his knees he took off the slipper, slid the white high-heeled sandal on to her foot.
A1Y 333 Some 22 per cent of the mothers had used an implement — a strap, cane or slipper — and another 53 per cent had threatened one.
A23 15 MANY OF the 60-odd species of slipper orchid, the best known and most popular orchid in the West, could be extinct within 10 years without tough measures to halt the vast illegal trade in wild varieties.
A3U 276 As for the flowers, the Dutch delegation will be calling for a total ban on trade in some rare slipper orchids, which they say face extinction in 10 years unless something drastic is done.
A59 426 Botanists yesterday welcomed the agreement by the CITES plants committee to press for a wild slipper orchid ban.

British National Corpus at http://bnc.bl.uk

slipper - 必应词典
最佳答案 glass slipper 玻璃鞋双语对照词典结果: glass slipper[英][ˈɡlæsˈslɪpər][美][ˈɡläsɪˈslɪpər]n.水晶鞋;以上结果来自金山词霸例句:1. It turned out that my glass slipper, the one she lost, was found by the prince and eventually led him to her.
www.bing.com/knows/ 2015-03-21
Amazon.com: slippers 翻译此页
Product Features Cable-knit slipper featuring faux-shearling lining and lugged outsole…
Slipper - Wikipedia, the free encyclopedia 翻译此页
Types. The following is a partial list of types of slippers: Slip-on slippers - slippers usually made with a fabric upper layer that encloses the top of the foot and ...
slippers, women's shoes, shoes : Target 翻译此页
Shop for slippers at Target. Find slippers ..... www.target.com/c/slippers-women-s-shoes/-N-5xtcq
slipper - 微软必应搜索 - 全球搜索,有问必应 (Bing)
必应词典为您提供 slipper 的释义, 美[ˈslɪpər], 英[ˈslɪpər(r)]; n. 拖鞋; 室内便鞋; v. (用拖鞋)打(孩子等); 穿着拖鞋走; 网络释义: 滑块; 拖鞋式; 使鞋; cn.bing.com/dict/slipper
Slippers | Shipped Free at Zappos 翻译此页
Free shipping BOTH ways on Slippers, from our vast selection of styles. Fast delivery, and 24/7/365 real-person service with a smile. Click or call 800-927-7671.
www.zappos.com/slippers

Figure 3.7 Examples of search results from on-line corpus and search engine.
If the translator consults an online corpus, he will conduct the internal search in a list of sentences with the sought word *slipper* (see Figure 3.7). When he uses some search engine, the internal search will be made in the pages showing search results (see Figure 3.7), where the search may continue if he opens another web page by clicking a website he is interested in.

At this stage of lookup, knowledge about lexical reference sources is no doubt of vital importance. Take dictionary lookup for example, for productive use, there are at least three kinds of knowledge that are essential for going through the three procedures discussed here. According to Roberts (1997) and Roberts and Martin-Rutledge (2008), an efficient dictionary user should be familiar with, among other things, the dictionary types, the arrangement of headwords and the entry format. Adequate working knowledge of dictionary typology would enable the user to choose a suitable dictionary; basic familiarity with the macrostructure would lead to the quick discovery of the targeted headword; and recognition of the microstructure organization would facilitate the search for the needed data. The three types of information are prerequisites for any fruitful reference process, not to mention the effect on efficiency. Similarly, for the use of non-dictionary reference sources, familiarity with the typology of such sources, the access to the needed data and the organization of information is also necessary for successful lookup. So, knowledge about the consultation sources plays an essential part at the stage of reference source access.

However, in this study, the subjects have already had some practical knowledge in this area. All of them have at least seven years’ experience of using various sources, the longest being 15 years. Besides, the general topic of the translation task used in this study has ruled out the need to consult any specialized reference sources. So it can be assumed that they would not have much trouble in choosing the right type of consultation source and locating the needed information entry. Therefore, the third and fourth steps of the consultation process, *selecting lexical source* and *external search*, will not be focused in this research.
In contrast, the fifth step, *internal search*, is more complicated and demanding. It sometimes entails not only the knowledge about the organization of information but also the skills to decode the needed data that is not explicitly presented, but encoded in different parts of the text of reference source. For instance, in the above-cited entry of 拖鞋 from the *Chinese-English Dictionary* (see Figure 3.6), it is not directly stated that *slipper* is usually used in plural form or that it is the most commonly-used word of the three given equivalents. If such information is needed, the search within the entry may involve more sophisticated effort or skills, and the student subjects from different levels are likely to display different features. Moreover, the internal search may reveal different consultation purposes. For example, if the lookup stops at the definition, the reference purpose may be just to find out the meaning of the headword; if the search centers on the example sentences, the wanted information may be the word usage. So, for the above reasons, *internal search* will be studied in this thesis as a significant area that can reveal various reference purposes as well as between-group differences.

*Problem Solving*

The first move at this stage is *extracting relevant data*, which is closely linked with the last lookup procedure *integrating information*. According to Rundell (1999), the information a student needs to perform a production task may include the syntactic behavior, collocational preferences and selectional restrictions, sociolinguistic features (including register and regional variety), semantic features and contextual effects. As mentioned in the last section, these categories of data are encoded in different parts of the reference source text and the translator needs to decode and extract them. However, the extraction is not directly observable unless he records the data by writing it down. Usually, a mental note will be taken of it (Nesi, 1999) before the obtained information is incorporated into the translation task at the next stage. In most cases, the extracted data takes the form of some lexical item. Whether the translator’s problem is lexical void or uncertainty, the two reference paths converge when the needed item is taken out from the consultation source and put
into the text being created. In our example, it would be *slipper*, which will then be used at the next stage to fill in the blank in the clause *(students) are not allowed to walk in ____ on campus.* As can be seen, the exact data taken out from the consultation source may not be perceivable at this stage, but it is embodied in the lexical item to be integrated at the next stage, thus recognizable from the target text. For this reason, emphasis will be put on the next consultation move in the present study.

The last component of the lookup process is *integrating information* into the text that prompted the lookup activity in the first place. At this stage, the extracted lexical item will be passed on to the next processing stage—structure forming—and eventually incorporated into the English text being created. Here, *integrating information* actually extends beyond the consultation proper into the synthesis process of target text. Since this study aims to explore the lookup process in relation to the translation product, the information integrating procedure will be expanded to include part of the target-text forming process that involves the data obtained from consultation sources, and the affected segment of the translated text will be discussed as the result of the consultation.

In our example, the extracted item *slipper* will now be filled in the lexical blank of the clause in question. Ideally, the clause will be completed as “...*students are not allowed to walk in slippers on campus.*” However, it is not impossible for translation students to produce clauses such as “...*students are not allowed to walk in slipper on campus*” or “...*students are not allowed to walk in slipers on campus.*” If so, we cannot say that the lexical problem that prompted the consultation has been satisfactorily solved, even though the extracted data has been put into the text. Considering the context of lexical consultation discussed earlier, *problem solving* should be understood as *finding a solution to the lexical problem in the synthesis of the target language text.* This means that the information extracted from the consultation source must be *appropriately* integrated into the text. Otherwise, the original lexical problem will remain unsolved and all the previous lookup efforts
will be wasted. In this sense, integrating the extracted data is the last critical step in
the consultation process, for it is at this point that the problem which triggered the
lookup process is to be finally solved. Given its importance, integrating information
will be made another area of focus in this study.

It should be admitted that the above is a rather simplified account of the consultation
process and various complications may arise in the actual lookup. But the tentative
description has shown the key reference moves to be made to solve a lexical
problem in inverse translation. Furthermore, by weighing their relative importance in
the process and their relevance to this research, three lookup moves have been
singled out as the focal points to be studied, namely determining problem word,
internal search and integrating information, representing the stages of problem
finding, reference source access and problem solving respectively. The prerequisites
for performing the first two moves are also discussed: translator’s knowledge and
skills needed to have an appropriately-shaped concept as the basis for determining
the problem word; and the familiarity with the organization of information in the
reference source and the decoding ability for searching the needed data. As for the
last move, Section 3.3 will present a detailed discussion about what is required for
the successful integration of the extracted information.

3.3 Development Model of Second Language Vocabulary

Previous studies of the lookup process have shown how needed information is
searched from reference sources to solve a lexical problem in translation. However,
this information search is also a vocabulary-learning process. When an unknown
equivalent is found in the consultation source, a new lexical item is actually acquired;
and when a known item is confirmed, a better understanding of it is thus gained. So
the consultation can be regarded as a lexical acquisition process. Moreover, placed
in the context of translation, this process is also goal-oriented. The purpose of
learning is to solve the lexical problem in translation. At the end of the last section, it
was mentioned that such a learning process might not necessarily lead to a
satisfactory resolution to the problem. When the extracted item is not appropriately incorporated into the translated text, we wonder what might have gone wrong with the last lookup step of integrating data, or what could have been done to prevent this slip between the cup and lip. To find a theoretically convincing answer to these questions, we need to understand how a word is acquired within the context of L2 learning. Thus, in the next section, a theory of L2 lexical development will be introduced.

3.3.1 Jiang’s Model of L2 Lexical Development

Jiang’s model (2000, 2004a) of lexical development is built on his adaption of Levelt’s (1989) description of the lexical entry in L1 and a characterization of the unique L2 learning conditions. Levelt’s lexical entry is made of meaning, syntax, morphology and phonology (p. 188). In Jiang’s model, meaning is renamed semantics, and orthography is added beside phonology (see Figure 3.8). The modified structure of the lexical entry, like that of Levelt’s, is still made up of two parts, the lemma and the lexeme. The lemma contains semantic and syntactic specifications about a word, such as word meaning and part of speech, while the lexeme, with the addition of orthography, contains morphological and formal information, such as inflection information, spelling and pronunciation.

![Internal structure of the lexical entry (Jiang, 2000, p. 48).](image)

According to Jiang (2000, 2004a), in contrast to L1 acquisition, there exist two practical constraints on L2 lexical development in instructional settings. The first is
the lack of adequate and contextualized input in L2, which makes it arduous for a L2 learner to acquire and create semantic, syntactic and morphological specifications about a word and combine such properties into the lexical entry of it. The second restriction is an established conceptual and L1 system, which will inevitably be activated and involved in the process of L2 acquisition. Based on such analysis, Jiang proposed a three-stage model of lexical development in L2 (see Figure 3.9).

**Figure 3.9** Jiang’s (2000, p. 51; 2004b, p. 418) model of L2 lexical development.

The first is called the *formal stage* (Jiang, 2000), or *lexical association stage* (Jiang, 2004b), at which the L2 lexical entry contains only formal knowledge—phonology and orthography. The other sections of the entry are vacant but there is a lexical pointer that connects the word to its L1 translation. At this stage, the use of L2 words entails the activation of the links between the L2 words and their L1 equivalent. In productive L2 use, the lexical items first activated by the pre-verbal message are not L2 words but their L1 counterparts whose semantic specifications match the message fragments. These L1 items then trigger the corresponding L2 words through the lexical links between them.

As Jiang (2004b) points out, when the associations between L2 and L1 words grow stronger, the semantic and syntactic information of the L1 words are copied or transferred to the empty space of the L2 words, thus producing lexical entries with L2 lexical forms but semantic and syntactic specifications of their L1 equivalents.
Such a transfer marks the second stage of lexical development—the *L1 lemma mediation stage*, where the copied L1 lemma information mediates the use of L2 words. The link between a L2 word and the conceptual representation may be established both directly through the L1 lemma in its entry and through lexical association with its L1 translation. The activation of L1 translation in L2 may decrease but the morphological section is still empty because the language-specific inflection information tends to be less susceptible to transfer. The connection between L2 words and the concepts is weak, which can be attributed to the fact that the lemma information is copied from L1, rather than created in its own right, thus not thoroughly integrated into the entry, or the fact that the representation of the lemma information copied from L1 is weak in itself because of the loss of some information in translation.

The final stage of the lexical development features the extraction of the semantic, syntactic and morphological information of an L2 word from exposure and use, and the integration of all these lexical properties into the entry. It is called the *L2 integration stage*. With the L1 specifications already discarded, the L2 lexical entry is now almost the same as a lexical entry in L1 in terms of representation and processing, and a direct link is finally built between a L2 word and the concept.

According to Jiang (2000), since more contextualized exposure and use “may also automatically reinforce L1 lemma mediation by strengthening the connection between the L1 lemma and the L2 lexeme”, the development of a L2 entry tends to stop before reaching the final stage of L2 integration (pp. 54-55). This stagnation brings about three unique features to lexical representation in L2, namely, the combination of its own formal specifications with semantic and syntactic information of its L1 translation, a lack of morphological specifications, and a weak connection between the L2 entry and its conceptual representation.

Jiang (2000) points out that his model aims to describe the gradual development of a specific word in L2 learning, rather than that of a person’s overall lexical competence. The words in a learner’s L2 lexicon are more likely to be at different
stages, and a learner can be seen at one of the three stages in the sense that a majority of his L2 words are at that stage. Moreover, instead of being clear-cut, the stages have grey areas between them, where a word is evolving from one stage into another.

To support his model, Jiang (2000) draws extensive evidence from the studies in two areas: the bilingual lexicon and L2 production. In the first area, results from tasks of picture naming, translation or translation naming were found supportive to the transition from lexical association to conceptual mediation (e.g., Chen & Leung, 1989; Kroll & Curley, 1988; Talamas, Kroll & Dufour, 1999); the asymmetrical pattern verified in masked cross-language priming experiments provided positive proof of the weak connection between L2 words and conceptual representation (e.g., De Groot & Nas, 1991; Sánchez-Casas, García-Albea & Davis, 1992; Gollan, Forster & Frost, 1997; Jiang, 1999). On the other hand, the interference errors in word choice and usage found in L2 production lent convincing support to the claim of L1 lemma information existing in the L2 word entry (e.g., Zughoul, 1991; Hakuta, 1987; Dalgish, 1991; Yu & Atkinson, 1988); various inflectional errors made by L2 learners and even very advanced users provided abundant evidence for the lack of morphological specifications within the lexical entry (e.g., Long, 1997; Aaronson & Ferres, 1987; Mukkatesh, 1986). Results from a few longitudinal studies of lexical fossilization also proved that the morphological information of a L2 word was usually the last to be acquired (e.g., Long, 1997; Lardiere, 1998).

Jiang himself has also conducted a series of studies to further underpin his theory of lexical acquisition. He deals with cross-language priming asymmetries (Jiang & Forster, 2001, Forster & Jiang, 2001), form-meaning mapping in L2 lexical development (Jiang, 2002), morphological insensitivity in L2 processing (Jiang, 2004a), and semantic transfer (Jiang, 2004b, 2004c). These research efforts yielded more empirical evidence for his model and confirmed its validity from different aspects. Thus, it can be concluded that his model is an empirically well-sustained theory of L2 lexical development.
3.3.2 Applicability of L2 Lexical Development Model

Jiang’s model of lexical development in L2 will be adapted for examining the lexical consultation in translation. But before discussing how to modify it, it is necessary to discuss its applicability to this study.

As introduced in the last section, Jiang’s model is based on the diagnosis of the L2 learning setting, which is characterized by two actual restraints. One is the scarcity of natural L2 exposure in terms of both quality and quantity; the other is the learner’s pre-existing conceptual and L1 system. These two factors also apply to the participants in this study. As native Chinese, they started to learn English as a formal subject in high school, they learn it in the mode of classroom instruction, and they have no extended period of exposure to authentic English-speaking environment. So in their lexical learning process, they face exactly the same barriers as the ones described by Jiang.

If we regard their lexical lookup in translation as a word-learning process and take a micro view of it, we will find even greater relevance of Jiang’s model to the translation students’ consultation process. Let us focus on the three major lookup stages, namely, determining problem word, internal search and integrating information, which were highlighted in Section 3.2.3.

As mentioned in that section, in the case of the lexical uncertainty, the problem word will be a L2 word. Here the uncertainty itself is an indication that the L2 entry has an empty space or incomplete part in it. According to Jiang (2000), such an incomplete entry is a major feature of L2 lexical development. Considering the fact that the translator has to read the L1 text before translating it into L2, there is also a strong possibility that the L2 problem word is activated by its counterpart in the source text, rather than by a concept in the semantic representation. This activation route is typical of L2 lexical processing described in Jiang’s model. As for a L2 lexical void in inverse translation, the problem word for consultation has to be a L1 word because the translator does not even know whether or not the needed L2 item exists
in English (Rundell, 1999). So, the needed L2 word tends to be found by looking up its L1 translation or counterpart in some bilingual sources. This process was clearly illustrated by the *slipper* example in Section 3.2.3, where the word *slipper* is acquired from a Chinese-English dictionary by looking up the Chinese problem word 拖鞋. The connection between the L2 word and its L1 counterpart is established from the very beginning when the L2 item is acquired. Such a connection, or what Jiang (2000) called as *lexical pointer*, between L2 word and its L1 equivalent, is an essential characteristic of the first two stages of lexical development in L2.

In the internal search, the reference source text or microstructure is the source of lexical information from which the needed L2 word or information about it is sought. Such input is limited, second-handed and context-wanting, even when compared with classroom instruction. Although remarkable improvements and innovations have been made over the years on dictionaries and other reference sources in providing more situational specifications, greater number and variety of examples and equivalents (Roberts, 1996; Newmark, 1998; Scholfield, 1999; de Schryver, 2003; Dziemianko, 2010; Pastor & Alcina, 2010), the exposure thus provided is nowhere near the natural and highly contextualized environment of L1 lexical acquisition. These unfavorable circumstances would make it difficult for a L2 student to grasp all the necessary lexical specifications to form an integral L2 entry.

When integrating the information extracted from consultation sources into the translation, the translator is in fact using the L2 item he has just acquired or confirmed to create the target text. The part of the translated text with the incorporated data can reflect the lexical representation of the newly-learned L2 item. Again, let us return to the *slipper* example. It was mentioned that the clause produced after the consultation might contain errors like *walk in slipper*, or even *walk in slipers*. Applying the theory of L2 lexical development, we find that the former shows a lack of morphological specifications within the newly-acquired entry of *slipper* while the latter, a shortage of orthographical information. Such empty
spaces within the lexical entry indicate the word’s status in its evolving process. As can be seen, the developmental perspective on L2 lexical acquisition not only explains why the consultation effort may fail at the last stage, but also answers the question as to what is needed for successful data integration into the translation task—a fully-developed and integral lexical entry in the target language. Such powerful diagnostic strength makes the model of L2 lexical development an outstanding theoretical tool for studying the use of the extracted item in translation.

To sum up, by having a macro view of the informants’ L2 learning environment and a micro view of the consultation process, the above discussion has demonstrated the strong applicability of Jiang’s theory to this study and established it as an analytical model instrument for this probe into the inverse translator’s lexical consultation.

### 3.3.3 Adaptation of L2 Lexical Development Model

To adopt the model of L2 lexical development in examining the translator’s use of lexical items extracted from consultation sources, necessary modifications will be made to the internal structure of lexical entry in terms of its intension and extension.

First of all, the contents of the lexical entry will be adjusted, confirmed and redefined. Since this study focuses on written translation, the formal information phonology in the lexeme section is deleted. So the lexeme of the entry is now made up of morphology and orthography (see Figure 3.10). The former stands for the inflectional specifications of the lexical item concerning its grammatical function or attributes such as tense, mood, person, number, case, or gender, and the latter, its spelling. In the lemma hemisphere, syntax refers to “the item’s syntactic category, its assignment of grammatical functions, and set of diacritic feature variables or parameters” (Levelt, 1989, p. 190), such as tense, aspect, mood, person, number, etc.

The other type of lemma information semantics was originally defined from the point view of language production by Levelt (1989) as “a specification of the item’s meaning”, “the set of conceptual conditions that must be fulfilled in the message for
the item to become selected” (p. 182). Although such a perspective, focusing on the word’s conceptual specification rather than its meaning, offers an adequate explanation of the lemma activation and retrieval, it is not suitable to the present study on the translator’s use of the looked-up lexical item, where the word meaning is an element of utmost importance. In view of this, Jiang’s (2000), simple definition of semantics as “word meaning” (p. 48) will be adopted. Moreover, Baker’s (2011) description of the components of lexical meaning will be borrowed for the subdivision of an item’s semantic properties. The classification is largely based on Cruse’s (1986) structuralist theory of lexical semantics. According to it, there are four main types of lexical meaning, namely, propositional meaning, expressive meaning, presupposed meaning and evoked meaning. Propositional meaning is the part of the meaning that determines the truth condition; expressive meaning relates to the speaker/writer’s feelings or attitudes and cannot be judged as true or false; presupposed meaning arises from co-occurrence restrictions, such as selectional and collocational restrictions while evoked meaning derives from dialect and register variation (Baker, 2001, pp. 11-13). Figure 3.10 shows the changes made to the contents of the lexical entry, including the components of the semantic and syntactic properties.

Figure 3.10 Adapted internal structure of the lexical entry.
Apart from the above modifications, the conceptual extent of lexical entry will be broadened to include phrases in this study. The first reason for doing so is a practical one: there exists no one-to-one correspondence between orthographic words and elements of meaning across languages (Baker, 2011). Such non-equivalence in lexical unit is common between Chinese and English. A Chinese word (ci) that can be found in dictionaries as a headword may have a phrase as its counterpart in English (e.g., middle school for 中学). Besides, a Chinese headword itself may be a phrase, such as four-character set phrases. Another reason for including phrases in the conceptual range of the lexical entry is that its internal structure also applies to phrases. Although Levelt did not discussed in detail the activation and retrieval of phrases and idioms (Komos, 2006), he regards them as entries in the mental lexicon. Through examples such as red tape and kick the bucket, he illustrates that phrases, like individual words, have their characteristic conceptual and syntactic specifications (Levelt, 1989). In addition to these lemma conditions, phrases, as a group of words standing together, also have their morphological and orthographic properties. Therefore, a phrase can be seen as an enlarged lexical entry made up of more than one word, having its own lemma and lexeme specifications as a lexical entry does. So in this thesis, lexical item refers to not only words but also phrases.

3.4 Summary of Chapter 3

By drawing from the studies of translation, lexicography and second language acquisition, this Chapter established an interdisciplinary framework based on three theoretical models. The first was a model of translation process derived from Bell (1991), which helped pin down the place and function of lexical consultation in the translation process. It served as a background model to contextualize lexical consultation in this study. The second model, adapted from Hartmann (2001), depicted the reference process in translation and highlights three areas of focus, namely, determining problem word, internal search and integrating information. It acted as a descriptive model outlining the process from the finding to solving of the lexical problem. Borrowed from Jiang (2000), the third model, of lexical
development in second language, was modified for examining the translator’s use of information obtained from lexical lookup. It functioned as an analytic model for looking into the interface between translation and lexical reference sources. The three models combined to form an integrated theoretical basis for the hypothesis and research questions of this empirical study.

Moreover, Chapter 3 also pointed out the knowledge and skill needed for going through the three key phases of lexical lookup. Determining problem word requires the translator’s expertise to produce an appropriate concept in terms of content and style as the basis of the problem word; internal search entails familiarity with reference sources and the ability to decode the needed data; and integrating information demands comprehensive knowledge of the semantic, syntactic, morphological and orthographic specifications of the lexical item. Such an emphasis on the knowledge and skill behind the reference act was expected to steer the present study of lexical consultation towards a more informative psycholinguistic direction.
Chapter 4

Research Questions and Methodology

Based on the literature review in Chapter 2 and the theoretical framework established in Chapter 3, three research questions are proposed here for the present effort to fill some of the gaps in previous studies, and a description is made of the methodology adopted to answer the questions. This chapter consists of five parts: (1) research questions and hypotheses, (2) research methodology, (3) method of data collection, (4) method of data analysis and (5) a summary. First, research questions are put forward in Section 4.1 concerning the effect of lexical lookup, consultation process, and causes for unsuccessful reference efforts. Hypotheses are formulated for these questions so that they can be broken down into more specific and workable sub-issues. Second, a multi-method design is proposed in Section 4.2 in order to explore the research questions and the corresponding hypotheses. Two studies are introduced, namely, the experiment on effect of lexical consultation and observation of the consultation process. A detailed description is made of them, followed by a discussion about how they contribute to arriving at answers to the research questions and what strengths and shortcomings they have. Third, an account of the specific methods used to collect data is given in Section 4.3 in terms of informant recruitment and grouping, ethical issues, information elicitation procedures, and translation task and grading. Fourth, Section 4.4 deals with the quantitative and qualitative methods of data analysis and the approach used to examine the lexical errors in this study. Last, a summary of the preceding sections is made in Section 4.5.

4.1 Research Questions and Hypotheses

Three research questions are put forward to achieve the aims of this study. They
center on (1) the effect of lexical consultation on translation, (2) the process of lexical consultation, and (3) the causes of unsuccessful consultation. Following each research question, two hypotheses are proposed, which are given a number that corresponds to the research question they address. The research questions and hypotheses are as follows,

(Q1) What are the effects of lexical consultation on translation at different levels of translation competence?

Hypothesis 1A: Lexical consultation will bring about a generally positive effect on translation across all levels of competence.

Hypothesis 1B: The subjects from higher levels or with higher scores in translation will have a higher success rate of consultation while those from lower levels or with lower marks will have a higher failure rate of consultation.

(Q2) What are the characteristics of lexical consultation at different levels of translation competence?

Hypothesis 2A: Differences exist in the kind of lexical problems to be solved through lexical consultation at different levels.

Hypothesis 2B: Differences exist in the lookup process among the subject groups, especially in terms of determining problem word, internal search, and integrating information.

(Q3) What are the causes of unsuccessful lexical consultation in translation?

Hypothesis 3A: An unsuccessfully-solved lexical problem can be attributed to a faulty step in the consultation process, especially in determining problem word, internal search, or integrating the information.

Hypothesis 3B: An erroneous item in the translated text as a result of consultation will demonstrate certain empty space in the internal structure of the entry.
In the following subsections, these research questions and hypotheses are discussed one by one, together with the theoretical motivations and assumptions behind them. Relevant findings of the previous studies are employed to support them, and considerations are also given to the research focuses and the informants’ background.

### 4.1.1 Effect of Lexical Consultation

The main objective of this thesis is to investigate development of the translator’s consultation ability. As pointed out in the previous chapters, the function of lexical consultation in translation is to solve the vocabulary problem in translation by finding the needed word or phrase for the synthesis of the target text. So, the consultation ability is actually the ability to fulfill the function of lexical consultation. In that case, one way to examine the development of the translator’s consultation ability is to find out to what extent the function of lexical consultation is fulfilled at different level of competence. Such fulfillment is reflected in the effect of lexical lookup on the target text, where we can see whether the lexical problem is solved or not. Therefore, the first research question for this study is

(Q1) What are the effects of lexical consultation on translation at different levels of translation competence?

As consultation functions as an aid to solving lexical problems and lexical lookup was found to play an overall constructive role in translation (see Section 2.5.3.1), we may assume that the effect of consultation is positive across all levels of competence. The assumption is formulated as the first hypothesis for Research Question 1:

_Hypothesis 1A: Lexical consultation will bring about a generally positive effect on translation across all levels of competence._

However, as revealed by the previous studies, there is a gap between translators from different levels in consultation efficiency and skillfulness (Jääskeläinen, 1989; Atkins & Varantola, 1997, 1998; Fraser, 1999). Generally speaking, subjects from higher levels or with higher translation scores are more likely have successful consultation
while those from lower levels or with lower scores are more likely to have failed consultation. As lexical consultation usually decreases with increasing expertise (Tirkkonen-Condit, 1987), the effect of lexical consultation should be measured in terms of success or failure rate of consultation rather than the quantity of successful or failed lookups. Hence,

*Hypothesis 1B: The subjects from higher levels or with higher scores in translation will have a higher success rate of consultation while those from lower levels or with lower marks will have a higher failure rate of consultation.*

To test the above hypothesis, it is necessary to have the total number of the informant’s lexical searches and work out the proportion of successful and unsuccessful searches in the total. Such rating is used in lexicography studies to measure the effectiveness of lookup (e.g., Atkins & Varantola, 1997, 1998; Bogaards, 1998; Li, 1998; Varantola, 1998; Frankenberg-Garcia, 2005; Laufer & Levitzy-Aviad, 2006). In this study, the success and failure rates are measured in terms of lexical search, which is a consultation attempt to solve one lexical problem and may include more than one lookup (see Sections 5.2.5 and 6.2); and a successful lexical search refers to one that results in the integration of an appropriate item into the translated text while an unsuccessful search is one that leads to the integration of an inappropriate item into the translated text.

### 4.1.2 Process of Lexical Consultation

Previous studies have found a sharp contrast in consultation behavior between professional and student translators, which implies a maturing process of lexical consultation. This suggests that students at different levels may display different consultation features. So the second research question is

(Q2) What are the characteristics of lexical consultation at different levels of translation competence?

This question will be approached from two perspectives. The first one concerns what
kind of lexical problems are solved through consultation at different levels. As discussed in Chapter 3, lexical problems in inverse translation usually fall into two kinds—lexical void and lexical uncertainty. Since a translator’s vocabulary will presumably expand with his growing experience in translation, participants from lower levels tend to encounter more cases of lexical void. On the other hand, when facing lexical uncertainty, the translator needs to check or confirm certain specifications of the lexical entry. According to the model of lexical development discussed in the previous chapter, it may be assumed that the informants from lower levels are likely to have more problems with the formal specifications, i.e. orthography and morphology. These differences in consultation needs have a direct bearing on the lookup process and constitute an important part in the contrastive description of the consultation features. So for Research Question 2, the first hypothesis is

_Hypothesis 2A: Differences exist in the kind of lexical problems to be solved through lexical consultation at different levels._

Another way to address Research Question 2 is to look into the consultation process. As discussed in Section 2.5.3.2, many studies have found that subjects from different levels demonstrated different lookup behaviors (Kohn, 1988; Krings, 1988; Jääskeläinen, 1989; Atkins & Varantola, 1997, 1998; Fraser, 1999; Barbosa & Neiva, 2003). Exploring such differences will help to not only establish the pattern of consultation behaviors at different levels but also explain the different effects of lookup on translation. Following the consultation model built in Chapter 3, the probe into the lookup process will center on the three key steps highlighted therein, namely, determining problem word, internal search, and integrating information. Therefore, the second hypothesis for Research Question 2 is

_Hypothesis 2B: Differences exist in the lookup process among the subject groups, especially in terms of determining problem word, internal search, and integrating information._
4.1.3 Causes of Unsuccessful Consultation

Chapter 3 has pointed out the knowledge and skills required for going through the three key phases of lexical lookup and illustrated that a lack of the knowledge and skills may result in an unsuccessful consultation effort. But in reality, what actually causes failures in consultation at different levels is still an unanswered question. Considering that the informants in this study are translation students ranging from beginners to advanced learners, they must be on different levels in terms of the necessary knowledge and skills they possess. Identifying the causes behind unsuccessful consultation will reveal what knowledge and skills are lacking at different levels. The answer to this question is of pedagogical significance, for it can tell us what should be taught to enable the students to make better use of consultation. So, the third research question is

(Q3) What causes unsuccessful consultation at different levels of translation competence?

According to the consultation model introduced in Chapter 3, one needs to go through the phases of problem finding, reference source access and problem solving to complete a lookup. If a lookup fails to solve the lexical problem, there must be something wrong in the consultation process. Stressing the three areas of focus pointed out in the previous chapter, this assumption can be formulated into

_Hypothesis 3A: An unsuccessfully-solved lexical problem can be attributed to a faulty step in the consultation process, especially in determining problem word, internal search, or integrating the information._

Though theoretically the three steps are all important in the consultation process, yet considering the background of the subjects in this study, information integration tends to be a move where they may display more between-group differences than in the other two phases. First, as native Chinese, the participants should not have much difficulty in understanding the original Chinese text, which is of general topic intended for the public. So when determining a problem word, they are not very
likely to have comprehension problems as may arise when translating other text types, such as specialized or literary ones. Second, the subjects have at least seven years’ experience of using various lexical reference sources; so assumably, they have adequate knowledge about the reference sources to go through the internal search during the consultation. In contrast, however, the participants may have more problems when integrating the information into the target text if we consider that they are still translation students, and that their English learning environment and lexical acquisition through lexical lookups are input-lacking and context-wanting (see Section 3.3.2). Given this, the information integration may be a step in the consultation worthy of more research attention. According to the model of L2 lexical development discussed in Chapter 3, the proper use of a lexical item entails an integral entry made up of the four kinds of properties, namely, orthography, morphology, syntax and semantics. The improper use of an item, however, is usually the result of certain specification vacancy in that entry. Based on this assumption, the second hypothesis for Research Question 3 can be formed as

*Hypothesis 3B: An erroneous item in the translated text as a result of consultation will demonstrate certain empty space in the internal structure of the entry.*

It should be noted that in this study an empty space found in a misused English entry refers to the lack of certain L2 (English) specification in one of the four sections of the internal structure. It does not mean that a whole section is empty, nor does it mean that the place for the missed English specification is uniformly empty. The place may be occupied by the some specification transferred from the L1 (Chinese) counterpart of that misused English entry (see Section 3.3), or even from another English entry that can be easily mixed up with the misused one.

So far, three research questions have been raised and six hypotheses have been formulated to address them. The next section will introduce and discuss the methodological approach and design employed to answer the research questions and test the hypotheses.
4.2 Research Methodology

A multi-method design was adopted in order to examine the above research questions and hypotheses. Two empirical studies using different methods were conducted as follows:

Study 1: Experiment on the effect of lexical consultation on translation by comparing the translated texts produced without and then with lexical consultation.

Study 2: Direct observation of the participants’ lookup behaviors, followed by a brief retrospective interview.

Study 1, an experiment involving a translation task performed without and then with lexical consultation, will answer Research Question 1 about the effect of vocabulary lookup on translation, part of Research Question 2 concerning the features of lexical consultation at different levels, and part of Research Question 3 regarding the causes of unsuccessful consultations. By observing the informants’ lookup, Study 2 is expected to produce answers to Research Question 2 and Research Questions 3 from the perspective of consultation process.

The general settings of the two studies are introduced in the following sub-sections, followed by a discussion on how they help serve the research needs. Section 4.2.1 describes the experiment on the effect of consultation (Study 1) and its role in addressing the research questions and the corresponding hypotheses. Section 4.2.2 provides an account of the observation of the lookup process (Study 2) and an explanation of its contribution to fulfilling the research purpose. Last, a brief summary is made in Section 4.2.3.

4.2.1 Experiment on Effect of Lexical Lookup

This experiment is devised to answer the question concerning the effect of lexical lookup on translation and part of the questions regarding the consultation features at different levels and causes of failed lookup. The basic setup of the study is borrowed
from Livberg and Mees (2003), the feasibility of which was ascertained in Section 2.5.2.2. In the experiment, 90 participants, representing three levels of competence, were asked to produce a translated text (TT1) of an article first without lexical consultation. Then they were allowed to improve TT1 by using lexical consultation sources to produce a modified text (TT2). In this way, the participant produced two versions for the original article, TT1 and TT2, of which the former is done without lexical consultation and the latter with.

First, TT1 and TT2 were compared to find out the changes made through consultation. These changes were studied in terms of their effect, which could be positive, negative or zero. The positive-effect changes were counted to see how much they made up in the total number of changes. The data thus obtained were used to examine Hypothesis 1A, which predicts that lexical consultation will bring about a generally positive effect on translation. Then, the proportion of positive-, negative- and zero-effect changes to total changes were compared among the groups to test Hypothesis 1B, which presumes that participants from higher levels or with higher scores in translation will have a higher success rate of consultation. Moreover, the changed places in TT1 and changes made in TT2 were scrutinized one by one to find out what kind of lexical problems were tackled through consultation at different levels. The between-group differences thus found were summarized to assess Hypothesis 2A that there are differences in the kind of lexical problems to be solved through consultation. Last, the misused items, taken from reference sources and incorporated into TT2, were looked over to test Hypothesis 3B that the wrong use of the extracted items will reflect some empty space in the internal structure of the entry.

To sum up, by testing Hypotheses 1A, 1B, 2A and 3B, the experiment on the effect of lexical lookup produced answers to Research Question 1 and part of Research Questions 2 and 3.

This experiment on the effect of lexical lookup was a product-oriented study since it focused on the translated texts rather than the translation process. Though it produced informative data about the results of consultation, what brought about such results
still remained unknown. To remedy this shortcoming, the next study of direct observation examined the consultation process in translation that had led to different effects. Moreover, the observed participants, with access to lexical reference sources when they set about translating the same article, could function as controls for crosschecking data in this study.

4.2.2 Observation of Consultation Process

The observation of consultation behaviors is intended to explore the features of the lookup process and the causes of unsuccessful consultations. Fifteen participants, representing three levels of competence, were observed one by one when performing the same translation task done in the experiment with access to lexical reference sources. At the same time, the researcher, i.e., the author of this thesis, noted down all the observable lookup-related behaviors in the translation process. The record centered on the items looked up, information extracted, and items integrated into the translation while attention was also paid to details such as reference sources consulted, marks made on the source text, movements of the cursor on the computer screen, etc. Meanwhile, the screen activities were recorded by using a piece of software named Blueberry Flashback. After the translation task, the subjects were asked a few questions about their lookup purpose, search focus, lexical choice, etc.

The observation focused on the three major steps of the consultation process, namely, determining problem word, internal search, and integrating information. The rationale for emphasizing the three phases was given in Section 3.2.3. During each lookup, the researcher first wrote down the problem word being looked up so that he could see whether it was a source language or target language word, whether it was a word directly taken from the source text or a synonym to the original word, and whether the word was found or not in the reference source. As for the internal search, records were taken of the kind of information sought from the entry, such as equivalents, definitions, usage or examples. Very often, such records needed further clarification or confirmation through post-experiment interviews. When the extracted
information was integrated, the researcher noted down the lexical item put into the target text so that he could see whether it was the item found in the reference source and whether it was properly incorporated. Apart from the three focal areas, other relevant data were also recorded, such as the kind and number of reference sources consulted, the number of lookups per search, completed and aborted reference efforts, etc. Information thus collected were analyzed and between-group comparison were made to test Hypothesis 2B that postulates the existence of differences in the lookup process among the subject groups, particularly in the phase of determining problem word, internal search, and integrating information. The differences found among the groups were summarized to establish the pattern of lookup behaviors of each group, thus answering Research Question 2 about the characteristics of lexical consultation at different levels.

Apart from the evidence collected through observation, the participant’s translation was also looked into as important data in this study. The translated texts were examined and the places affected by lookup were picked out according to the observation record. The unsolved lexical problems in the translated texts were studied in relation to the corresponding lookup process recorded in the observation. There were two purposes for doing this. The first was to trace the particular step that caused the failing. The data thus collected were used to examine Hypothesis 3A that unsolved lexical problem is caused by a faulty step in the consultation process. The second purpose was to find out the wrong use of lexical items extracted from lexical sources. Such misuses were combined with those found in the experiment in an error analysis to test Hypothesis 3B that wrong use of extracted items reflects some empty space in the internal structure of the entry. By examining Hypotheses 3A and 3B, this investigation of the consultation process provided answers to Research Question 3 about the causes of unsuccessful lookup in translation.

Though the observation focused on the translator’s lexical lookup process, the translation product was also studied in relation to the lookup act in this process research. According to Tirkkonen-Condit (2005), “studies of processes must be
accompanied by an evaluation of product quality as well, if the aim is to pin down those process features that are found to be conducive to good quality” (p. 406). On this account, the combination of process- and product-oriented approaches in this study is expected to help find out what lookup characteristics may lead to successful or failed consultation.

4.2.3 Summary

This section on research methodology proposed two empirical studies, i.e. an experiment on the effect of lexical lookup and observation of the consultation process, to arrive at answers to the research questions. A general description was given of the set-ups of the studies, followed by an explanation of how the research designs would contribute to examining the research questions and the corresponding hypotheses.

It can be seen that this multi-method design combines the product- and process-oriented approaches to translation studies. The experiment examines the translation product while the observation focuses on the translation process. Moreover, the translation product and process are studied in relation to each other. Such an integrative approach is expected to enable an in-depth investigation of lexical consultation in translation, thus providing a comprehensive picture of the translator’s consultation behaviors.

4.3 Method of Data Collection

This section gives a detailed account of the specific methods used for collecting data. It is organized as follows: Section 4.3.1 discusses the recruitment and grouping of the informants and ethical issues, Section 4.3.2 introduces the data elicitation procedures, and Section 4.3.3 deals with the translation task and grading, followed by a brief summary in Section 4.3.4.

In view of the importance of validity in the choice of data eliciting instruments, justification of each method and design is provided. The overriding consideration
governing the methodological decisions was the research purpose and questions investigated in this thesis. The method chosen should best serve the research needs and the exploration of the research questions. Another factor that had to be taken into account was the resources available, which involved the supply of informants, technical support, and the researcher’s individual conditions, such as his time, energy and capability. Moreover, experience and lessons were also drawn on from the previous studies in terms of methodology. So, the research purpose and questions, existing resources, and past experience are referred to from time to time in the following discussion. Apart from the justification of the methods and designs adopted, their weaknesses are also discussed, together with relevant precautions and remedies.

4.3.1 Informants, Groupings and Ethic Issues

Informants

Altogether 105 Chinese students were recruited from the under- and postgraduate translation programs, School of English and International Studies (SEIS), Beijing Foreign Studies University (BFSU). They were all English majors specializing in translation. Of them, thirty-five informants were taken from the third and fourth year of the four-year undergraduate program respectively. Another thirty-five were recruited from the three-year postgraduate program. All the students were in the middle of their first semester when they participated in this study. The 105 informants were divided into three groups of thirty five. From each group, thirty participated in the experiment on the effect of lexical consultation, and the other five were studied as the subjects of the observation of consultation process.

Aimed at describing the developmental pattern of the translator’s lexical consultation by examining the features of consultation at different levels, this research adopted quasi-stratified sampling, which had also been used by some previous studies (e.g., Jääskeläinen, 1989; Atkins & Varantola, 1997, 1998; Ehrensberger-Dow & Perrin, 2009). As introduced above, the sample was drawn from three stages of translation
training. Beginning to take specialized courses in translation from the second semester in their second year, the third-year undergraduates had already had translation training for nearly a year by the time they participated in this study. They were expected to bear more characteristics of novices. The fourth-year students were about to graduate after two and a half years’ training in translation. They were supposed to show more attributes typical of translation trainees at intermediate level. The recruitment of subjects from postgraduate level was somewhat more complicated. Ideally, they should all be the second or third year students so that there would be a gap of at least one year’s training between them and the fourth-year undergraduates. But due to the smaller class size at this level, the thirty-five informants had to be recruited from all the three levels. Of them, ten were from the first year, ten from the second and fifteen from the third. The first-year students had had about half a year’s postgraduate translation course when recruited. It was hoped that these graduate students would display more features of advanced translation students.

It should be pointed out that like most institutions of higher education in China, BFSU practices a cohort system in both the under- and postgraduate programs. The undergraduate students have to pass either provincial or national entrance examinations to be admitted; and the postgraduate candidates have to pass an English proficiency test and an examination in a specialized field they choose to major in, such as literature, foreign studies, translation, etc. During the three or four years in the university, the students study in a rather stable class, taking the same compulsory courses, such as English skill courses and translation. As for the undergraduates recruited for this study, the third-year and fourth-year students had passed the national Tests for English Majors-Band 4 and -Band 8 respectively a few months before taking part in this study. Based on these facts, it can be said that each of the three subject groups has shared characteristics in educational background and English proficiency, thus homogeneous for sampling.

Compared with previous studies (see Section 2.5.2.3), the sample size of this
research was considerably greater. According to Gay et al. (2012), at least 30 participants are needed to form a sub-group if between-group differences or the existence of correlations are to be detected quantitatively. This minimum number was obtained for the experiment in this study since it aimed to examine the between-group differences in the effect of lexical consultation and the relationship between vocabulary lookup and the translation competence. On the other hand, thirty was almost the maximum number the researcher could achieve when trying to form three equal-sized groups. The students who had done the translation task earlier had to be excluded. While the undergraduate translation program at SEIS offered a larger population size of 48 at each year, the postgraduate program had altogether 40 students, making it necessary to recruit informants from all its three levels. Luckily, of the 40 postgraduate students, 35 agreed to participate. To sum up, from the population of 136 translation students, 105 participated in the research, making up 77.2 per cent of the total. According to the table of sample size requirement proposed by Krejcie and Morgan (1970), 103 informants are required for a population of 140. By this standard, the number of students recruited in this study complied with the requirement, hence large enough to represent the investigated population.

*Grouping*

Though an equal number of informants were recruited from three training stages, they were not simply categorized by the learning level they belonged to. Instead, the 105 student participants were grouped according to the marks they got for the translation task they did in the experiment or observation. For the informants of the experiment, it was their marks of the TT2 that counted. Such regrouping was made to serve the research purpose to discover the correlation between the translator’s lexical lookup pattern and his translation competence. It is true that students from a higher level as a whole generally have better competence than those from a lower level. But it is also not rare to find the opposite in individual cases. In other words, the learning level may not necessarily have a positive correlation with a student’s translation competence. Moreover, the informants’ background questionnaires showed that
while the third- and fourth-year undergraduates had the same lengths of training in translation practice and inverse translation within their group, the postgraduate students from three stages of learning had various lengths of such training, which made it problematic to group the informants according to their natural level of learning. Considering this as well as the pros and cons of various grouping methods used in previous studies (see Section 2.5.2.3), the scores for the translation task were taken as a more meaningful and objective criterion for classifying the participants in this thesis. Thus, the translation task was used not only as a data eliciting method but also as a placement test. This saved an extra burden on the informants to take a pre-test. Besides, the translation task was taken from China’s National Accreditation Examinations for Translators and Interpreters (NAETI) and the rating of the translated texts also strictly followed the rules of that examination system. So, it could be said that the scores of the translation task better reflected the participants’ translation competence than their natural learning level.

For the sake of clarity and convenience, the informants’ results of the translation task were converted to the hundred-mark system (see Section 4.3.3 for more details about the rating standards and process). The 90 participants of the experiment were ranked in ascending order of their translation scores and evenly divided into three groups of thirty. The top thirty students were labeled as advanced learners, whose marks ranged between 78 and 90; the bottom thirty informants with scores between 50 and 70 were taken as novice learners, and the thirty in between, whose marks fell between 70 and 76, were regarded as intermediate learners. Table 4.1 below shows the grouping of the informants with their coded numbers, translation marks and the level they came from: $U$ stands for undergraduate, $P$ for postgraduate and the following number indicates the year. Of the 30 third-year undergraduates, a majority of 19 stayed in the novice group while eight and three jumped to the intermediate and advanced groups respectively. Of the fourth-year undergraduates, twelve were taken into the intermediate group, four into the novice and 14 into the advanced level. As for the
postgraduates, thirteen went to the advanced group, ten to the intermediate and seven
to the novice group.

Table 4.1
Grouping, scores and original levels of informants for experiment.

<table>
<thead>
<tr>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>N01</td>
<td>50</td>
<td>U3</td>
<td>I01</td>
<td>70</td>
<td>U4</td>
<td>A01</td>
<td>78</td>
<td>U3</td>
</tr>
<tr>
<td>N02</td>
<td>50</td>
<td>U3</td>
<td>I02</td>
<td>70</td>
<td>P1</td>
<td>A02</td>
<td>78</td>
<td>U3</td>
</tr>
<tr>
<td>N03</td>
<td>52</td>
<td>U3</td>
<td>I03</td>
<td>70</td>
<td>P3</td>
<td>A03</td>
<td>78</td>
<td>P1</td>
</tr>
<tr>
<td>N04</td>
<td>52</td>
<td>U3</td>
<td>I04</td>
<td>70</td>
<td>U4</td>
<td>A04</td>
<td>78</td>
<td>U4</td>
</tr>
<tr>
<td>N05</td>
<td>54</td>
<td>P3</td>
<td>I05</td>
<td>72</td>
<td>U3</td>
<td>A05</td>
<td>78</td>
<td>U4</td>
</tr>
<tr>
<td>N06</td>
<td>56</td>
<td>U3</td>
<td>I06</td>
<td>72</td>
<td>U3</td>
<td>A06</td>
<td>80</td>
<td>U4</td>
</tr>
<tr>
<td>N07</td>
<td>58</td>
<td>U3</td>
<td>I07</td>
<td>72</td>
<td>U3</td>
<td>A07</td>
<td>80</td>
<td>U4</td>
</tr>
<tr>
<td>N08</td>
<td>60</td>
<td>U3</td>
<td>I08</td>
<td>72</td>
<td>U4</td>
<td>A08</td>
<td>80</td>
<td>U4</td>
</tr>
<tr>
<td>N09</td>
<td>60</td>
<td>U3</td>
<td>I09</td>
<td>72</td>
<td>U4</td>
<td>A09</td>
<td>80</td>
<td>U4</td>
</tr>
<tr>
<td>N10</td>
<td>62</td>
<td>U3</td>
<td>I10</td>
<td>72</td>
<td>U4</td>
<td>A10</td>
<td>80</td>
<td>P3</td>
</tr>
<tr>
<td>N11</td>
<td>62</td>
<td>U3</td>
<td>I11</td>
<td>72</td>
<td>P1</td>
<td>A11</td>
<td>80</td>
<td>U3</td>
</tr>
<tr>
<td>N12</td>
<td>62</td>
<td>U3</td>
<td>I12</td>
<td>72</td>
<td>P1</td>
<td>A12</td>
<td>82</td>
<td>P2</td>
</tr>
<tr>
<td>N13</td>
<td>64</td>
<td>U3</td>
<td>I13</td>
<td>72</td>
<td>P2</td>
<td>A13</td>
<td>82</td>
<td>P2</td>
</tr>
<tr>
<td>N14</td>
<td>64</td>
<td>P1</td>
<td>I14</td>
<td>72</td>
<td>P3</td>
<td>A14</td>
<td>82</td>
<td>P2</td>
</tr>
<tr>
<td>N15</td>
<td>64</td>
<td>P2</td>
<td>I15</td>
<td>72</td>
<td>U4</td>
<td>A15</td>
<td>82</td>
<td>U4</td>
</tr>
<tr>
<td>N16</td>
<td>64</td>
<td>U3</td>
<td>I16</td>
<td>74</td>
<td>P3</td>
<td>A16</td>
<td>82</td>
<td>P3</td>
</tr>
<tr>
<td>N17</td>
<td>66</td>
<td>P1</td>
<td>I17</td>
<td>74</td>
<td>P1</td>
<td>A17</td>
<td>82</td>
<td>U4</td>
</tr>
<tr>
<td>N18</td>
<td>66</td>
<td>U3</td>
<td>I18</td>
<td>74</td>
<td>U4</td>
<td>A18</td>
<td>82</td>
<td>P2</td>
</tr>
<tr>
<td>N19</td>
<td>66</td>
<td>U3</td>
<td>I19</td>
<td>74</td>
<td>U3</td>
<td>A19</td>
<td>84</td>
<td>P2</td>
</tr>
<tr>
<td>N20</td>
<td>66</td>
<td>P2</td>
<td>I20</td>
<td>74</td>
<td>U3</td>
<td>A20</td>
<td>84</td>
<td>P2</td>
</tr>
<tr>
<td>N21</td>
<td>66</td>
<td>U4</td>
<td>I21</td>
<td>74</td>
<td>U4</td>
<td>A21</td>
<td>84</td>
<td>U4</td>
</tr>
<tr>
<td>N22</td>
<td>68</td>
<td>U3</td>
<td>I22</td>
<td>74</td>
<td>U3</td>
<td>A22</td>
<td>84</td>
<td>U4</td>
</tr>
<tr>
<td>N23</td>
<td>68</td>
<td>P3</td>
<td>I23</td>
<td>74</td>
<td>U4</td>
<td>A23</td>
<td>84</td>
<td>U4</td>
</tr>
<tr>
<td>N24</td>
<td>68</td>
<td>U3</td>
<td>I24</td>
<td>74</td>
<td>U4</td>
<td>A24</td>
<td>84</td>
<td>P3</td>
</tr>
<tr>
<td>N25</td>
<td>68</td>
<td>P1</td>
<td>I25</td>
<td>76</td>
<td>U3</td>
<td>A25</td>
<td>84</td>
<td>P3</td>
</tr>
<tr>
<td>N26</td>
<td>68</td>
<td>U3</td>
<td>I26</td>
<td>76</td>
<td>U3</td>
<td>A26</td>
<td>86</td>
<td>P3</td>
</tr>
<tr>
<td>N27</td>
<td>68</td>
<td>U4</td>
<td>I27</td>
<td>76</td>
<td>U4</td>
<td>A27</td>
<td>86</td>
<td>U4</td>
</tr>
<tr>
<td>N28</td>
<td>70</td>
<td>U4</td>
<td>I28</td>
<td>76</td>
<td>P3</td>
<td>A28</td>
<td>88</td>
<td>U4</td>
</tr>
<tr>
<td>N29</td>
<td>70</td>
<td>U3</td>
<td>I29</td>
<td>78</td>
<td>U4</td>
<td>A29</td>
<td>88</td>
<td>U4</td>
</tr>
<tr>
<td>N30</td>
<td>70</td>
<td>U4</td>
<td>I30</td>
<td>78</td>
<td>P1</td>
<td>A30</td>
<td>90</td>
<td>P1</td>
</tr>
</tbody>
</table>

The majority of the students from the original top and bottom levels remained in the strata corresponding to their natural learning level except the in-between fourth-year undergraduate students, of which 14 went up to the advanced level. In contrast, only 13 from the postgraduate level stayed in the advanced group. A possible explanation was that the fourth-year undergraduates had studied in the translation program at SEIS for four consecutive years while most of postgraduates might not have as much formal training in translation, especially those ten first-year postgraduates, who, as a
whole, might not be much different from the fourth-year undergraduates in term of their inverse translation ability. As a result, eight of the ten first-year postgraduates went down to the intermediate or novice level. Besides, informants N04 and N15 classified as novice were actually third- and second-year postgraduates. Their low marks might have to do with the fact that they, as students from disadvantaged areas in the west part of China, were admitted to the postgraduate program with marks considerably lower than the normal admission line.

As Table 4.1 shows, of the seven informants who scored 70, three were classified as novice learners and four as intermediate, and of the eleven informants with 76 points, five were taken into the advanced group while six into the intermediate. Such divisions were made on the basis of the ranking of these same-mark informants determined by the two NEATI raters after they were asked to grade the translations to decimal point.

It is undeniable that dividing the informant groups according to their translation performance was not flawless, especially when we look at the informants at the intermediate level. Unlike the other two groups, whose scores covered a range of more than 15 points, the group in between concentrated within a range of 9 points, i.e. from 70 to 78. Such concentration seemed unavoidable if the scores of all the informants were to be normally distributed to form a bell shape. One way to solve this problem was to have a larger sample size so that three groups of thirty could be more evenly obtained from three equally broad score ranges, such as 50-63, 64-77 and 78-90. But that would entail a much greater population size than the one available. Another way out was to reduce the group size, say, to 20, so that each group would have their scores more evenly spread. In this way, however, one-third of the recruited informants had to be given up, which would inevitably affect the representativeness of the sample. According to Gay et al. (2012), a group size of 20 is too small for between-group differences to be detected statistically.

Caught in such a dilemma, the researcher chose to keep the original sample size of 90 and divide them into three equally-sized groups in the belief that they, as a whole,
could represent the population, and that they were distinctively different from each other, thus able to display between-group differences. To test the first assumption, a normality test was first done to see whether the score distribution of the whole sample yielded or approximated a normal curve. As shown in Table 4.2, all the four M-estimators (see Section 4.4.2 for details) were greater than the mean score 72.7778, which indicated that the scores showed a negatively skewed distribution. However, since the M-estimators were quite close to the mean, it could be said that the distribution approximated a normal curve. Moreover, as the sample size exceeded 50, the result of the Kolmogorov-Smirnov test (see Table 4.2) rather than the Shapiro-Wilk was checked and the p-value was found to be .082, which is greater than the alpha level of .05. This meant that the data set was not distinctively different from a normal curve and one did not reject the null hypothesis that the data were from a normally distributed population. So, the distribution of the 90 informants’ scores formed an essentially normal curve, suggesting that the sample was representative of the investigated population in terms of translation results.

### Table 4.2
M-estimators and test of normality

<table>
<thead>
<tr>
<th>M-Estimators</th>
<th>M-Estimator(^a)</th>
<th>Tukey’s Biweight(^b)</th>
<th>Hampel’s M-Estimator(^c)</th>
<th>Andrews’ Wave(^d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huber’s M-Estimator(^a)</td>
<td>73.3391</td>
<td>73.5302</td>
<td>73.2829</td>
<td>73.5255</td>
</tr>
</tbody>
</table>

\(^a\) The weighting constant is 1.339.  
\(^b\) The weighting constant is 4.685.  
\(^c\) The weighting constants are 1.700, 3.400, and 8.500.  
\(^d\) The weighting constant is 1.340\(\pi\).

### Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov(^a)</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic</td>
<td>df</td>
<td>Sig.</td>
</tr>
<tr>
<td>Score</td>
<td>.088</td>
<td>90</td>
</tr>
</tbody>
</table>

\(^a\) Lilliefors Significance Correction

Since the individual normality tests on the score distribution of the three groups showed that not all of them yielded a normal curve, the Mann-Whitney U test was...
chosen to examine the hypothesis that distinctive difference existed among the three groups in their translation scores. Comparison was made between the three pairs, i.e. Groups 1 and 2, Groups 2 and 3, and Groups 1 and 3. According to the test results in Table 4.3, the p-values of the three tests were all .00, less than the alpha level of .05. This meant that the three groups were significantly different from each other in terms of their translation results.

In spite of that, the informants on or near the “borderlines”, i.e. the scores of 70 and 78, did share similar or even the same marks. So when discussing the between-group differences, it would be improper to attribute the characteristics they displayed in lexical consultation to the group they were divided into. Based on this consideration, the forthcoming qualitative analyses deliberately excluded the data derived from those “borderline” informants.

Table 4.3
Mann-Whitney U Test Statistics

<table>
<thead>
<tr>
<th>Levels 1 &amp; 2</th>
<th>Score</th>
<th>Levels 2 &amp; 3</th>
<th>Score</th>
<th>Levels 1 &amp; 3</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>6.000</td>
<td>Mann-Whitney U</td>
<td>5.000</td>
<td>Mann-Whitney U</td>
<td>.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>471.000</td>
<td>Wilcoxon W</td>
<td>470.000</td>
<td>Wilcoxon W</td>
<td>465.000</td>
</tr>
<tr>
<td>Z</td>
<td>-6.608</td>
<td>Z</td>
<td>-6.631</td>
<td>Z</td>
<td>-6.676</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Grouping Variable: Level

The informants recruited for the observation were also divided according their translation scores. To be consistent, the dividing lines used in the experiment were followed, which fell on 70 and 78. Since one would not know the informant’s translation mark until the task was done and graded, the informants’ translation teachers had been consulted about their performance in inverse translation before the actual recruitment in order to make sure there were enough recruits at each of the three levels. Table 4.4 shows the three groups of observed informants, together with their identifying numbers, scores and original levels.
Table 4.4
Grouping, scores and original levels of observed informants.

<table>
<thead>
<tr>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
<th>Informant No.</th>
<th>Translation Score</th>
<th>Original Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>N31</td>
<td>64</td>
<td>U3</td>
<td>I31</td>
<td>72</td>
<td>U3</td>
<td>A31</td>
<td>80</td>
<td>U4</td>
</tr>
<tr>
<td>N32</td>
<td>66</td>
<td>U4</td>
<td>I32</td>
<td>72</td>
<td>U4</td>
<td>A32</td>
<td>82</td>
<td>U3</td>
</tr>
<tr>
<td>N33</td>
<td>68</td>
<td>U3</td>
<td>I33</td>
<td>74</td>
<td>P1</td>
<td>A33</td>
<td>82</td>
<td>P3</td>
</tr>
<tr>
<td>N34</td>
<td>70</td>
<td>U3</td>
<td>I34</td>
<td>76</td>
<td>U4</td>
<td>A34</td>
<td>84</td>
<td>P2</td>
</tr>
<tr>
<td>N35</td>
<td>70</td>
<td>P3</td>
<td>I35</td>
<td>76</td>
<td>U4</td>
<td>A35</td>
<td>86</td>
<td>P3</td>
</tr>
</tbody>
</table>

To conclude, a multi-group design was adopted in the experiment to serve the research purpose of identifying the between-group differences; and a single-subject design was employed in the process observation in the sense that the informants were observed one by one. Moreover, the researcher also strived to make full use of the available sample so as to obtain richer data and guarantee its representativeness.

**Ethical Issues**

Before this study commenced, approval had been obtained for the research proposal of this thesis from the Human Research Ethics Committee, Western Sydney University. In accordance with the ethical guidelines issued by the Committee, participants’ privacy, confidentiality and welfare were respected throughout the research process. A few days before the study was conducted, the participants were contacted and met in person when the purpose, nature and procedures of the research were explicitly explained to them. A request of favor was made for them to take part in the experiment or observation on purely voluntary basis. They were also informed that the study would involve a brief interview and recording of the screen activity. Clear assurance was given to the informants that their grade or relation with the researcher and school would not in any way be affected no matter they decided to participate or not. During the meeting, copies of Participant Information Sheet and Consent Form were provided to the participants, who were encouraged to take the forms away with them, contact the researcher if they had any questions, and think carefully about their willingness before making decisions.
Prior to the commencement of the study, signed consent was obtained from all informants and each of them was assigned a number to ensure their identity would not be revealed. Promise was made to them that the study would include no identifying information. It was also assured that the information they provided would be used to fulfill the aims of research only. All the participants were made aware of their right to withdraw from the study at any time without giving any reason and without any consequences. During the experiment and observation, a ten-minute break was given every fifty minutes so as to minimize any stress or discomfort likely to be caused by the translation task.

4.3.2 Data Eliciting Procedure

As mentioned earlier, two studies were carried out in this research, namely, an experiment on the effect of lexical effect on translation, and a direct observation of the lookup behaviors. The specific data collection procedures of the two studies are illustrated as follows.

Experiment

A short questionnaire on the informants’ background was conducted as an introductory session before the translation task in the experiment and observation. The venue was a standard classroom where the participants have lessons. When briefing on the purpose of the survey, giving the instructions for filling the form or clearing up any doubts that might arise during the study, the researcher saw to it that he communicated with the participants in a friendly, grateful and accommodating manner so as to create a relaxed atmosphere. It was hoped that in the translation session the participants would work in an environment that resembled their natural working conditions, as if they were doing an in-class assignment, so that their translation and consultation process would maximally reflect the reality. In this sense, the questionnaire also served as a warm-up and tone-setter for the following the experiment or observation.
The questionnaire was made up of five questions (see Appendix A for the questionnaire and its English translation). They were about (1) their experience of doing Chinese-English translation, (2) training in translation practice, (3) training in Chinese-English translation, (4) training in use of reference books, and (5) frequency of lexical consultation in inverse translation. As a quick preliminary survey, the questionnaire featured a respondent-friendly design. First, it was written in Chinese, the informants’ mother tongue, and the style was clear and concise. Second, the format was easy to follow. Throughout the survey the participants only needed to tick the chosen answer or fill in numbers without having to write any words. Last, the one-page question sheet was short, with just five questions; it could be completed within a couple of minutes, thus unlikely to cause any extra stress to the informants.

The experiment proper started after the question sheets had been completed and collected. It was made up of two sessions involving 90 subjects, who had been informed of the translation direction, topic and length of the task and told to bring with them any paper reference works they normally used for such a task. First, they worked on a translation task without consultation to produce a translated text (TT1). They could use the automatic spell and grammar checkers as they always did when doing translation. This way, they would not be compelled to use lexical reference sources to solve the problems that could have been solved by using the two functions since such forced lookup might distort true picture of lexical consultation. However, the thesaurus was not allowed until the informants started to prepare TT2 because of its similar nature to that of a dictionary. (As it turned out, no informants used that function when it was allowed.) In the second session, TT1 was returned to the informants for improvement, who were allowed to use lexical consultation sources to prepare a modified version (TT2). Both TT1 and TT2 were collected in digital form at the end of the experiment and later printed out for grading and studying.

One flaw of this design was that the lexical lookups took place when the translation had already been completed, and they might have been different if the informants had
been allowed to make consultation from the very beginning. There are other alternative setups, such as having one subject group working with consultation and another without, asking the subjects to translate one task with lookup and another without, or having a longer time-span between the session without consultation and the session with. But these methods all have their own shortcomings, and by comparison, the present design seemed to be more advantageous than the other alternatives (see the discussion in Section 2.5.2.2). In the observation, however, the informants were allowed access to reference sources when doing the task, who could acted as a control group to check the results from the experiment.

As the translated texts were taken as the main data in this experiment, their truth value was one of the prime considerations when the research setting was designated. To guarantee the reliability of the data, efforts were made to create a research environment “as close to the subjects’ ‘normal’ environment as possible” (Li, 2004, p. 303). First, the venue chosen for the study was a classroom familiar to the participants. Second, they carried out the translation task on their own personal computers, in the same way as they did their homework. Third, no time limit was set for the task so that they translated under no time pressure. These measures helped keep the external interferences to a minimum and provide a familiar setting so that the informants felt at ease during the experiment.

Since the translated texts produced with and without lexical consultation would be contrasted to examine the effect of lookup, it was important to ensure that only the alterations made through consultation in TT2 were counted as meaningful changes in the comparison. For this purpose, the following actions were taken. First of all, the participants were encouraged to edit their first version to their heart’s content before saving it and handing it in; and when they improved their translation with access to reference sources, they were required to only make changes by using lexical reference sources. Second, their screen activities were recorded with a piece of
screen-recording software installed in the participants’ computers\(^1\). The screen recording could clearly show which changes were made through consultation if it was conducted on the computer; and a long pause in typing might be a sign of lookup in paper or portable electronic dictionaries. Last, when there was still doubt, the participants would be shown the screen recording and interviewed about the changes made in the second version for final confirmation.

**Observation**

This study focused on the consultation process during translation so as to discern the features of lexical lookup by different subject groups and causes of unsuccessful consultation. To record the fifteen participant’s lexical lookup, direct observation was adopted as the main method for collecting data. During the study, the researcher sat beside the participant in a seat a bit behind the latter’s so as to reduce interference of the observer’s presence. The translation and consultation processes were watched and noted down without being interrupted. Besides, as a precaution against the observer effect, the informants had been told that the translation task was not a test and they were expected to do it as a piece of homework. Moreover, the researcher had met and talked with the participants at least twice beforehand and it was hoped that the familiarity would help relieve the stress caused by the researcher’s presence. In addition, the validity measures taken in the experiment were also applied in this observation, such as relaxed atmosphere, familiar venue, use of personal laptops, and unlimited time for the task.

Using direct observation as the major data collection method was based on the need

\(^1\) A few days before the study, the informants had been asked to download Blueberry Flashback from its official website http://www.bbsoftware.co.uk, which offered a 30-day free trial. This 13.4Mb software developed by Blueberry Software can record the computer screen, sound and webcam without causing any disturbance to the computer users except a small window that can be minimized to tray. The participants were encouraged to “play with it” so as to get familiar with its functions. They were also told that only their screen activities would be recorded so that they would not have to bear extra stress or discomfort caused by working in front of a microphone or camera.
of maintaining ecological validity since this process study was meant to examine the translator’s lookup behaviors in a natural or quasi-natural setting. As pointed out in Section 2.5.2.1, the existing methods for studying translation or consultation process all have their downsides. However, after weighing its pros and cons, the researcher decided that, among other methods, direct observation was the one that best suited the present research purpose. In spite the interference caused by the presence of the observer, the translation and consultation process can proceed smoothly without interruption as would happen if the informants are asked to note down each of their lookups (e.g., Varantola, 1998). Unlike TAP, which can interfere with the translation process by slowing down translation speed and making translators work in smaller units (Jakobsen, 2003), direct observation allows the informants to concentrate on their work without imposing on them an extra burden of verbalizing their thoughts. In addition, a familiar observer sitting behind seems to be less stressful than a rolling camera in front. In a word, direct observation can help minimize artificial change or external inference to the informants’ usual working condition, thus better preserving the ecological validity of the study.

On the other hand, observation cannot tell what is going on in the translator’s mind (Mackintosh, 1998). Such information is needed in consultation process studies, especially when we have to discern the reason or motive behind a reference act. To make up for this shortcoming, a brief retrospective interview was conducted after the observation, in which questions were asked about the decision-making process in lexical consultation, and the screen recording was played as a reminder if necessary.

To sum up, a multi-method design was adopted in this project. The major apparatus included translation experiment and process observation, supplemented with other tools such as informant background questionnaire, screen recording and retrospective interview. It was hoped that the use of mixed methods would facilitate an exploration of the translator’s lexical lookup from different perspectives, produce more reliable and comprehensive data, and allow mutual complementation of different research procedures, thus minimizing the risk of bias caused by using a single method.
4.3.3 Translation Task and Grading

Based on the paradigm provided by previous studies (see Section 2.5.2.2 for detailed discussion), a translation task of medium difficulty was selected from the tests conducted by the National Accreditation Examinations for Translators and Interpreters (NAETI). The test is co-organized by Beijing Foreign Studies University and the National Education Examinations Authority under China’s Ministry of Education. The task was taken from a published sample test paper meant for paraprofessional translators in Guidelines for the National Accreditation Examinations for Translators and Interpreters (NAETI) (National Education Examinations Authority of the Ministry of Education, 2008). Below are the translation task and its reference translation from the Guideline (p. 12).

Source Text:

保姆校长

常常听到一些大学校长说：“我把学生当自己的儿女看待。”他真做得像个严父慈母: 规定学生睡眠要足 8 小时, 清晨 6 点必须起床做操, 不许穿拖鞋在校内行走, 等等。

我一直以为大学校长是高瞻远瞩、指导学术与教育大方向的决策人，而不是管馒头稀饭的保姆。教育者或许会说: “这些学生如果连入大学以前, 就已经学会自治自律的话, 我就不必如此喂之哺之; 就是因为基础教育没教好, 所以我办大学的人不得不教。”

听起来有理，可是学生之所以在小学、中学 12 年间没有学会自治自律，就是因为他们一直接受喂哺式的辅导，大学再来继续进行“育婴”，这岂不是一个没完没了的恶性循环？我们对大学教育的期许是什么？教出一个言听计从、循规蹈矩的学生，还是教出一个自己会看情况、做决定的学生？

Reference Translation:

A Nanny or a University President?

I often hear university presidents say, “I treat my students as if they were my own children.” And indeed they act just like strict but compassionate parents, telling the students that they should get at least eight hours of sleep, that everyone must get up for morning exercises at six a.m., that they are not allowed to walk around campus in slippers, and so on and so forth.

I have always considered university presidents to be visionary policy makers who set the course of academic research and education rather than mere nannies in charge of daily matters. These educators might say, “If these students had learned a bit of self-reliance and self-discipline before they came to college, I wouldn't need to babysit
them so much. It is because they were not taught all these things in primary and secondary schools that I, a university president, have to teach them now.”

These remarks sound reasonable. Yet since it is because the students have all along been taught in a spoon-fed manner that they haven’t learned to be self-reliant and self-disciplined after 12 years of schooling, wouldn’t it merely result in an endless vicious cycle if this sort of “babysitting” is continued at university level? Besides, what do we expect from higher education? To turn out submissive students who stick to the accustomed rules, or independent students who are able make decisions?

From the NEATI Marking Scheme

The source text was a short article of 289 characters about a commonly-seen phenomenon in China’s institutions of higher education, a general topic for the public involving little specialized knowledge. The task made up one fourth of the original translation examination, worth 25 points out of 100. Stylistically, the article is clear and simple, without any jargons or much rhetoric. So the native Chinese students recruited for this study should have no difficulty in understanding it. To provide a more specific context of situation for the task, a translation brief was added, saying that the translated text was to be published in the column Readers’ Comments in China Daily, the country’s most influential English newspaper.

However, since the task was intended to generate lexical lookup so that its effect and process could be studied, the chosen text contained several kinds of phrases or expressions considered problematic for the student translators. They included (1) phrases whose English translation or equivalents might not be familiar to the informants, such as 保姆 (babysitter or nanny)², 大校长 (university presidents) and 恶性循环 (vicious circle); (2) idiomatic Chinese expressions, such as 高瞻远瞩 (looking far ahead and aiming high), 言听计从 (readily listen to somebody’s advice and accept it) and 循规蹈矩 (accord with the custom and law); (3) metaphors, such as 保姆校长 (baby-sitter kind of university presidents) and 喂哺式的辅导 (spoon-fed education); and (4) culture-specific terms, such as 馒头稀饭 (steamed

² In this thesis, the Chinese words, phrases or clauses taken from the source text or used as problem words are italicized followed by their English equivalents or definition, also italicized, in brackets; and the underline is used to indicate the discussed segment of the example.
buns and congee). There were also terms whose instantial meaning had to be worked out in order to be appropriately rendered, such as 辅导 (coaching or tutoring but meaning teaching or training within the context) and 基础教育 (elementary or fundamental education but instantially meaning elementary and secondary education). These lexical difficulties were expected to induce the participants’ lexical consultation. On the other hand, most of the potential problem phrases and expressions could be found as headwords in the Chinese-English dictionaries commonly used by the informants.

On the whole, the translation task was neither too difficult nor too easy for the informants, which was in line with the practice of the previous studies. Apart from the above considerations, such a selection was also partly based on the teaching experience of the researcher, who had used the task as an assignment for his former students at different levels. This, in a broad sense, might be regarded as a kind of pretest. In the present study, it turned out that the translation task was a satisfactory choice in terms of the difficulty because the informants’ score distribution yielded an approximate bell-shaped normal curve, as reported in Section 4.3.1.

The informants’ translation was rated by two NAETI raters according to the “NAETI Standards of Grading” (see Appendix B for it and its English translation) in the Guidelines for the National Accreditation Examinations for Translators and Interpreters (NAETI) (National Education Examinations Authority of the Ministry of Education, 2008). Both of the raters were academic staff members at BFSU who had more than five years’ experience working as raters for NEATI. Each paper was co-graded by two raters and a mark was given after they reached an agreement. The NEATI code of points was mostly an impressionistic one, consisting of five evaluation bands described in terms of task fulfillment, understanding and expressing, language naturalness and smoothness, grammar and diction. The bands each covered five points, making a full mark of 25 points for one task. Apart from the grading standards, NEATI raters also used a system of error count, in which a grave error accounted for .5 point and a minor one for .25 point. Distinction was made between
the two kinds of errors by seeing whether it was serious enough to cause misunderstanding. In short, the rating of the translated texts in this study was conducted according the NEATI practice.

4.3.4 Summary

In the above discussion of data collecting methods, a detailed account was first given of the informants, grouping, and ethical issues. Judging from the normal distribution of their translation scores and the size of the investigated population, the sample of 105 student informants, evenly recruited from three natural strata, was adequate for the research purpose of this thesis in both quality and quantity. The translation score was used as an objective criterion for grouping the informants; the three groups thus divided were found to be distinctively from each other in terms of their performance of the translation task. During the studies, the ethical guidelines issued by the Human Research Ethics Committee was strictly observed, and due respect was accorded to the participants’ privacy, confidentiality and well-being.

Then, a description was made of the data elicitation procedures. Each method was discussed in terms of their weaknesses as well as their strengths. The multi-method design of this study enabled triangulation, i.e. the use of multiple data sources to address each of the research questions, and also increased the trustworthiness of the data collecting procedures. Furthermore, much attention was paid to the potential threats to the internal and external validity of this experimental research; some counter or remedial measures were taken as necessary safeguards against possible detrimental effects on the outcome of the study.

Last, the translation task and grading process were reported in detail. The translation task, playing a dual role as a placement test for regrouping the informants and an activity to prompt lexical lookup, was taken from NEATI, an authoritative national examination on translation. The translated texts were marked by two experienced NEATI raters according to the official grading procedures of the examination. Such
arrangements were expected to help guarantee the reliability and consistency of the measuring instruments.

4.4 Method of Data Analysis

A combination of qualitative and quantitative analysis was adopted in the current research, but used with different weight when tackling a particular research question. The research questions introduced in the Section 4.1 are repeated here:

(Q1) What are the effects of lexical consultation on translation at different levels of translation competence?

(Q2) What are the characteristics of lexical consultation at different levels of translation competence?

(Q3) What are the causes of unsuccessful lexical consultation in translation?

In answering Q1, the analyses were mainly conducted in a quantitative way while Q3 were addressed mostly by using qualitative methods. A more balanced combination of the two approaches was employed in tackling Q2. In the following two subsections, details are given about how the two methods were applied to this study. As the probe into the causes of failed lookup makes up an important part in this thesis, the methods used to analyze lexical errors are presented in Section 4.4.3.

4.4.1 Qualitative Analysis

To answer Q1, a qualitative study was first done as a preparation for the forthcoming quantitative analysis. The changes made in TT2 through consultation were classified into three kinds in terms of their effect, namely, positive-, negative- and zero-effect changes. A positive-effect charge was one that rectified an error in the TT1 or led to an obvious improvement over the rendering in TT1. A negative-effect change was one that brought about a new error in TT2 or impaired the originally good enough rendering in TT1. A zero-effect change was one that neither improved nor worsened
the original rendering. The classification was done with the help from the two NEATI raters.

A considerable part of Q2 was answered through qualitative analysis. First, the lexical problems tackled through consultation were examined and classified to find out the major problem types. The problems produced by unsuccessful lookups were also studied qualitatively to see what went wrong. Second, the observation records and the screen activity recording were scrutinized to make a qualitative description of the features of lookup process in terms of determining problem word, internal search and integrating information. Last, the data concerning consultation needs, the types of reference sources used, and depth of lexical search was also analyzed qualitatively.

Q3 was examined mainly by using qualitative methods. To find out the causes for unsuccessful consultation, the process observation notes and screen recording were checked in relation to the unsuccessfully-solved lexical problems in the translated texts. After that, qualitative descriptions were given of the moves that caused the failure of consultation attempts so as to sum up the pattern that led the lookup astray. Moreover, the erroneous items incorporated into the translated text were analyzed qualitatively to discover the empty space in the lexical entry.

4.4.2 Quantitative Analysis

Q1 was mostly answered by using quantitative methods. First, the positive-, negative- and zero-effect changes were added up respectively, and their proportion in the total number of changes made consultation was calculated to provide a numeral description of the effects of lexical lookup. Such effects were also contrasted among the three groups by using SPSS (Statistical Product and Service Solutions), a software package used for statistical analysis, to see whether the differences were statistically significant. Then, the correlations were sought between the lookup effects, success and failure rates on the one hand, and the translation score and competence level on the other. Moreover, the connections between the total number
of changes and the number changes causing different effects were also detected numerically. Though the examination of Q3 and Q2 did not involve much quantitative analysis, a quantitative account was given of the between-group differences in the types of lexical problems addressed, and numeral reports were presented of the causes of consultation failures and the vacancies found in the lexical entry of misused words or phrases.

Four statistical tests were employed in this thesis for quantitative analysis. The first one is M-estimators, already used Section 4.3.1. M-estimators are robust measures of central tendency. When the M-estimators are close to the mean, the distribution can be said to approximate a normal curve, suggesting that the data set forms a roughly normal distribution, thus representative of the studied population. The second is Tests of Normality consisting of Kolmogorov-Smirnov and Shapiro-Wilk tests. The former is used for large samples while the latter is used for samples smaller than 50. In this study, Kolmogorov-Smirnov test was used to check whether the frequency distribution of the translation scores and lookup-induced changes formed a normal curve. When the p-value is greater the alpha level (.05), the data set is not distinctively different from a normal curve and can be regarded as representative of the investigated population. The third is named Mann-Whitney U Test, which is used to compare differences between two independent groups when the dependent variable is not normally distributed, but ordinal or continuous. This test was conducted many times in this study to find out whether a between-group difference was statistically significant. The fourth is Spearman’s Rank-Order Correlation Test, which is used to measure the strength and direction of correlation between two variables. It was employed in this thesis to examine the association between translation scores or subject group levels on the one hand, and various lookup-related variables on the other.

4.4.3 Lexical Error Analysis

To answer the three research questions and the corresponding hypotheses, it was necessary to examine what lexical problems were addressed, solved and left
unsolved. Such lexical problems appeared in the translated texts in the form of lexical errors. To describe them, an analytical method was needed. There are various error taxonomies proposed from different perspectives and for different purposes (e.g., Richards, 1974; James, 1998), but in this study, as introduced in Section 3.3, a theory of lexical development in L2 was adopted to study the lexical problems. How the theory was applied to analyze the lexical errors is presented as follows.

According to the adapted model of L2 lexical development introduced in Section 3.3.3, the internal structure of a lexical entry is made up of four kinds of properties, namely, orthography, morphology, syntax and semantics (see Figure 3.8), and L2 learners’ lexical errors will display a lack of certain specifications within the entry. So an error can be described as an item defective in one of the four aspects. For instance, when *slippers* was misspelt as *sleepers* or *slipers*, it could be said that the entry in question was defective in orthography; and inflectional mistakes such as *self-disciplines*, *to be baby-sitten* and *well-behaving students* were classified as entries lacking morphological specifications. Errors in the lexical item’s syntactic behaviors, such as transitivity (e.g., *they care students’ daily life* or *we think it further*) or part of speech (e.g., *no slippering on campus* or *good-mannered students*), were considered defective in syntactical properties.

Lexical errors in meaning were classified as entries defective in semantics. According to the further division of a lexical item’s semantic specifications in Section 3.3.3, there are four types of lexical meaning, namely, propositional, expressive, evoked, and presupposed meaning. In this study, a meaning-related mistake was examined to see in which of the four respects it was found defective. First, if an entry did not signify the intended meaning, it would be considered defective in propositional meaning, i.e., truth value, such as the word *principal* that was used to refer to *university president*. Apart from such obvious mistakes, lexical items that were inaccurate in meaning were also thought as being defective in propositional meaning, such as *regard* or *consider* that were used where *treat* was more accurate. Second, lexical items wrongly conveying the original author’s feeling
or attitude were deemed to be defective in expressive meaning, such as a commendatory term that as used to express a derogative view. Third, lexical mistakes related to dialect or register variation were regarded as being defective in evoked meaning, such as a bunch of that was used where a more formal expression was needed. Fourth, errors breaching selectional and collocational restrictions regarding fixed expressions and combinations were categorized as lexical items defective in presupposed meaning, such as bad circle used to mean vicious circle, or grow their self-discipline used to mean develop their self-discipline.

From the above discussion of the criteria and examples, it can be seen that errors in orthography, morphology and syntax are actually those called as language mistakes that violate spelling, inflectional and syntactic rules; errors in presupposed meaning are in fact collocational mistakes that feature a breach of combination conventions; and errors in propositional, expressive or evoked meaning can be labeled as meaning-related mistakes that contain words whose sense is wrong or inaccurate. An omission of some source text item in translation is also regarded as a meaning-related mistake if it causes a loss of original meaning. When presenting the research results, these three broader categories were employed as well to describe the lexical problems. The reason is that these less theoretical terms are more often heard in English or translation teaching and easier to understand.

To sum up, the lexical errors examined in this study were first classified as entries defective in one of the four specifications, i.e., orthography, morphology, syntax and semantics; and then those found defective in semantics were further categorized as items inappropriate in propositional, expressive, evoked, or presupposed meaning. Besides, errors thus classified were also grouped into three more general categories, namely, language mistakes, collocational mistakes and meaning-related mistakes.

4.5 Summary of Chapter 4

On the basis of the literature reviewed and the theoretical framework set up in the previous chapters, this chapter raised three research questions on (1) the effect of
lexical consultation, (2) the process of lexical consultation, and (3) the causes of unsuccessful consultation. Six hypotheses were put forward, which broke up the research questions into more specific and manageable problems.

To answer the research questions and their corresponding hypotheses, a multi-method design was proposed, involving an experiment on the effect of lexical consultation and a direct observation of the consultation process. Detailed explanations were offered about how each of the studies served to examine the research questions and hypotheses.

Then, a comprehensive account was given of the specific data collection methods. The discussion covered a whole range of methodological issues, including sample selection, informant grouping, ethical considerations, data eliciting process, translation task and grading procedure. Moreover, justifications were provided for the major methodological choices in relation to the research aims, questions and hypotheses, and to the experience and lessons drawn from previous studies. At the same time, this chapter also reported the measures taken to safeguard the validity of the data collected.

Last, information concerning the methods of data analysis was presented, illustrating how qualitative and quantitative approaches were combined and how lexical errors were analyzed to realize the aims of the current research.
Chapter 5

Effect of Lexical Consultation on Translation

This chapter presents the research data gathered from the experiment on the effect of lexical consultation on translation to see how they address the Research Question (Q1) and the two related hypotheses posed in the previous chapter, which are repeated as follows:

(Q1) What are the effects of lexical consultation on translation at different levels of translation competence?

Hypothesis 1A: Lexical consultation will bring about a generally positive effect on the translation across all levels of competence.

Hypothesis 1B: The subjects from higher levels or with higher scores in translation will have a higher success rate of consultation while those from lower levels or with lower marks will have a higher failure rate of consultation.

First, Section 5.1 focuses on the effect of lexical consultation made by the whole sample, that is, the 90 informants representing three levels of competence in the experiment. As mentioned in Chapter 4, they completed a translation task first without and then with consultation so that they produced two translated texts, TT1 and TT2, which were compared to find out the changes made through consultation (see Section 4.2.2). In this section, these changes are added up, split up and weighed up to examine Hypothesis 1A—whether lexical consultation has a positive effect on translation. In addition, changes of different types are scrutinized to give a detailed account of the exact makeup of the consultation effect. Then, in Section 5.2, the between-group differences in the effect of lexical consultation are analyzed to test out Hypothesis 1B about the correlation between the informants’ translation results
and competence level on the one hand, and their consultation effect on the other hand. In both Sections 5.1 and 5.2, the reported results are synthesized and discussed in relation to the research aims. Last, a summary is made in Section 5.3 of the whole chapter.

5.1 Changes Made by Whole Sample

This section deals with the changes made by the 90 informants of the experiment as a whole. First, Section 5.1.1 presents the descriptive statistics on the changes made through consultation, which are classified into positive-, zero- and negative-effect changes according to the definitions given in Section 4.4.1. Then, the three types of changes are discussed respectively in Sections 5.1.2, 5.1.3 and 5.1.4, where the changed parts in TT1 and the replacements in TT2 are grouped according the system of classification based on the internal structure of lexical entry (see Sections 3.3.3 and 4.4.3). Finally, the findings are summed up and interpreted in Section 5.1.5 in an attempt to explore their possible implications.

5.1.1 Descriptive Statistics on Changes Made

The descriptive statistics on the lookup-induced changes show that the 90 informants of the experiment made a total of 602 changes, averaging at 6.7 changes per person, with the minimum of one change and maximum of sixteen.

Figure 5.1 illustrates the frequency distribution of changes, in which the vertical number line indicates the number of occurrence while the horizontal one, that of the changes at each frequency. The longest rectangle shows that altogether 17 participants made seven changes each. As many as 76 informants, or 84.4% of the total, made at least four changes to TT1 while 62 informants; and over two thirds of the total made four to ten changes. These statistics show that the translation task did a good job in bringing about an adequate number of lookups for studying.
Figure 5.1 Frequency distribution of changes.

Figure 5.1 also contains a curve of frequency distribution, resembling an ideal normal curve of symmetrical bell-shape. This is an indication that the frequency of the changes made by the 90 informants may be normally distributed. The result (i.e., p-value = .107 > .05) of a further normality test, Kolmogorov-Smirnov test, confirmed that the data came from a normally distributed population. So it can be said that frequency distribution of the changes made to TT1 was representative of the investigated population.

Table 5.1
Top ten most modified units.

<table>
<thead>
<tr>
<th>Modified Unit</th>
<th>Frequency of Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 高瞻远瞩 (looking far ahead and aiming high)</td>
<td>49</td>
</tr>
<tr>
<td>(2) 喂哺式 (spoon-fed way)</td>
<td>40</td>
</tr>
<tr>
<td>(3) 循规蹈矩(accord with the custom and law)</td>
<td>39</td>
</tr>
<tr>
<td>(4) 严父慈母 (stern father and loving mother)</td>
<td>38</td>
</tr>
<tr>
<td>(5) 恶性循环 (vicious circle)</td>
<td>35</td>
</tr>
<tr>
<td>(6) 馒头稀饭 (steamed buns and congee/trivial matters)</td>
<td>29</td>
</tr>
<tr>
<td>(7) 言听计从 (readily listen to somebody’s advice and accept it)</td>
<td>25</td>
</tr>
<tr>
<td>(8) 自治自律 (self-control and self-discipline)</td>
<td>25</td>
</tr>
<tr>
<td>(9) 基础教育 (elementary and secondary education)</td>
<td>25</td>
</tr>
<tr>
<td>(10) 指导 (guide/lead)</td>
<td>19</td>
</tr>
</tbody>
</table>

A contrastive study of TT1, TT2 and the source text reveals that the 602 changes involved 60 different lexical units of the original text, ranging from one-character
phrases like 管 (take care of) in 管馒头稀饭 (take care of trivial matters) to idiomatic four-character phrases such as 高瞻远瞩 (looking far ahead and aiming high) and 言听计从 (readily listen to somebody’s advice and accept it). The top ten most modified units, shown in Table 5.1, brought about 324, or 53.7%, of the total changes. The most changed unit was 高瞻远瞩, which induced as many as 49 changes to TT1. This means that 49 of the 90 informants changed their TT1 translation of the phrase when preparing TT2 with access to reference sources. Each of the ten most modified units led to at least 19 instances of change in TT2. Nearly all the anticipated problematic elements discussed in Section 4.3.3 appeared on the above list. In other words, the translation task turned out to have the level of lexical difficulty intended for this research. In addition, Table 4.1 also shows that there was a high degree of consensus among the informants about what constituted a lexical problem and what needed to be consulted about. This can be interpreted as a success in exposing the informants to some commonly-seen lexical problems and in generating adequate consultation behaviors and effects to be studied in this thesis.

Figure 5.2 Three types of consultation effects achieved by the whole sample.

Figure 5.2 shows the composition of the changes in terms of their effect. Of the 602 changes, 331 brought about a positive effect, accounting for 55% of the total; 234 were zero-effect changes, constituting 38.9%; and 37 produced a negative effect, making up 6.1%. On average, each informant had 3.7 positive-effect changes, 2.6 zero-effect changes and 0.4 negative-effect changes. Based on these figures, it can be
said that a large majority of changes brought about a positive effect on the translation and a remarkable proportion was ineffective while a very small part led to adverse results.

As can be seen from the above statistics, the bulk of the changes produced positive effects. Considering that 37, or 6.1%, of the changes brought about negative effects, the net number of positive-effect changes is 294 after the deduction, which makes up 48.8% of the total, still being the largest proportion. So it can be said that lexical consultation brought about a positive effect on the translation, thus confirming Hypothesis 1A, which postulates a positive effect of lexical lookup on translation.

To sum up, the following conclusions can be made from the descriptive statistics on the changes made to TT1. First, the translation task assigned in the experiment elicited adequate data for this study. Second, the normal frequency distribution of the changes indicated the representativeness of the data. Third, most of the changes produced a positive effect on translation and a considerable part was futile while a small proportion brought about a negative impact. Last, the analysis of the composition of the changes revealed that lexical consultation brought about a positive effect on translation, thus confirming Hypothesis 1A. Nevertheless, it is still unknown how the changes exerted a beneficial effect on the translation. So, the following subsections will present a detailed discussion of the changes in terms of their effect.

5.1.2 Positive-effect Changes

As mentioned in Section 4.4.1, a positive-effect change was one that corrected an error in the TT1 or led to an obvious improvement over the rendering in TT1. A comparison of TT1 and TT2 reveals that of the 331 positive-effect changes, 276, or 83%, were modifications of the first version, while 55, or 17%, were pure additions to TT1. In the first case, a rendering produced in TT1 was later found inappropriate and replaced with a new item after consultation. In the latter case, a lexical void left in TT1 was filled up in TT2 after lexical lookup. In the following discussion,
changes of positive effect made through modification are introduced in Section 5.1.2.1 and those made through pure addition are presented in Section 5.1.2.2.

5.1.2.1 Changes Made Through Modification

An analysis of the 276 modifications was conducted by looking into the changed places in TT1. The classification system based on the adapted internal structure of lexical entry (see Sections 3.3.3 and 4.4.3) was used to determine what kind of lexical error was rectified through consultation. Each changed unit in TT1 was examined to see which of the four sections, namely orthography, morphology, syntax and semantics, was lacking. These deficiencies were all made up in TT2 through lexical consultation. Figure 5.3 sums up the composition of the positive changes made through modification. The left pie chart shows the quantity and distribution of the improvements in semantics, syntax, orthography and morphology. The right pie chart displays the makeup of the semantic improvements, divided according to the classification of four types of meaning, i.e., propositional, presupposed, expressive and evoked meaning.

![Figure 5.3 Composition of positive-effect changes made through modification.](image)

As can be seen, the positive-effect changes made through modification helped bring about remedies to the defects in all the four types of specifications of a lexical entry. While the improvements in orthography, morphology and syntax added up to about
14% of the total, nearly 86% of the positive effect was contributed by improvement in semantics. Of such improvement, over 76% was brought about by mending propositional meaning; nearly 22% was achieved by correcting errors in presupposed meaning; and the betterment in expressive and evoked meaning was negligible. Next, a detailed report is presented of the four categories of betterment under the subheadings Semantic, Syntactic, Orthographic and Morphologic Improvement.

**Semantic Improvement**

As already mentioned, there were 237 instances of semantic improvement, making up almost 86% of the positive changes. All the changed parts in TT1 were looked into by using categorization system of lexical meaning, which proposed four types of lexical meaning, namely, propositional, expressive, presupposed and evoked meaning (see Sections 3.3.3 and 4.4.3). A contrastive study of TT1 and TT2 showed that, of the total 237 changes, 182 brought about improvement to the TT1 renderings that were defective in terms of propositional meaning. Apart from that, 51 led to improvement in presupposed meaning, three in expressive and one in evoked meaning. In the following, these four categories of betterment are reported one by one from the dominant to the minority kind. Due to their small number, the cases of improvement in expressive and evoked meaning are combined to be presented under one subheading.

(1) **Improvement in Propositional Meaning**

Of the 237 positive changes causing semantic improvement, 182, an overwhelming majority, brought about repair in terms of the propositional meaning, i.e., the truth value, of lexical items. These revisions can be roughly divided into two groups. The first group, with 87 instances, featured the correction of some obvious mistranslation that was judged as false in its truth value. For example, in twelve cases, the phrase 大学校长 (university president) was first translated as principal, headmaster or schoolmaster in TT1, whose propositional meaning was misleadingly divergent from that of the original phrase. Such mistranslations were later changed to
There were twelve instances where the mistranslations of 自治自律 (self-control and self-discipline), such as self-autonomy, self-regulation, self-government, to behave oneself, etc., were replaced by self-discipline, self-control, to discipline oneself, or to control oneself. In eight changes, the incorrect translations of 學术 (academic research), such as academics, academy, or academia, were corrected. Another four cases involved the translation of 基础教育, which, in the context of the source text, referred to not only primary/elementary education but also secondary education; the latter was added in TT2 after consultation. In three changes, the wrong renditions of 教育者 (educator), i.e., educationalists, instructors or school faculty, were put right in TT2. Another two instances saw the rectification of the mistranslation of 严父慈母 (a stern father and a loving mother), i.e., deserving parents and a strict father and benevolent mother.

The other group of the positive changes was characterized by an improvement, instead of a black-and-white correction, to the lexical choice in the first draft. Those changed lexical items in TT1 were not totally wrong in their truth value, but they were not as accurate as the modified renderings in TT2 produced after lookup. There were 95 instances of such improvement. Of them, 15 involved the translation of the phrase 高瞻远瞩 (look far ahead and aim high). Its TT1 renderings included future-oriented, plan for the future, have clear future plans in their mind, take into account long-term benefits, etc. After lookup, they were changed to far-sighted, forward-looking, look far ahead, or have great foresight. Nine instances of improvement concerned the rendition of 循规蹈矩 (accord with the custom and law), which was rendered in TT1 as well-behaved, follow old patterns, follow every instruction of the teachers, follow every rule he is taught to, etc. These translations were replaced with more accurate renderings, such as orthodox, always walk the chalk, always stick to the convention, be a blindly obedient rule-follower, only know to follow rules to the letter, etc. In six cases, 继续“育婴” (continue the baby-sitting/continue to babysit) was translated in TT1 into keep raising babies, continue “baby-caring”, continue to “rear” them, etc. In TT2, they were replaced
with keep babysitting, continue the baby-sitting, or continue to “babysit” them. Another four cases were related to 严父慈母 (a stern father and a loving mother), translated in TT1 as qualified parents, good parents or great parents, but they were changed to phrases with more precise wording, such as a stern father and a kind mother or a strict but loving parent. There were three instances involving the translation of 看待 (treat), whose TT1 translations, such as regard and consider, were replaced with treat, a word more appropriate in the context.

(2) Improvement in Presupposed Meaning

There were 51 instances of improvement in presupposed meaning, which arises from selectional or collocational restrictions on co-occurrence. Among them, as much as 25 concerned the translation of the phrase 恶性循环, of which an English counterpart was vicious circle, a fixed expression. Such a set phrase allows little variation in collocation. Not knowing it, especially the word vicious, many informants used other words as substitutes, such as bad, terrible, worsening, harmful, negative, malicious or derogative, all of which were replaced with the right word in TT2. Other instances had to do with less rigid collocational restrictions. About a dozen of them involved repairing the breach of verb+object co-occurrence restrictions, such as mould/cultivate obedient students, grow students’ self-discipline, obtain education, etc. Some awkward modifier+noun and preposition+noun collocations were also corrected through consultation, such as weak education, benign mother, in campus, etc. Another three cases of collocational improvement were more subtle, where the inappropriately-used adverbial phrases in make their own decisions depending on circumstances and make decisions on their own in accordance with changing circumstances (自己看情况做决定) were replaced with according to changing circumstances after consultation. On the surface, it was a case more of predicate+adverbial collocation than of lexical choice. But a close look reveals that it was the misuse of the lexical units depending on and in accordance with, whose presupposed meaning, i.e., co-occurrence restrictions, was not fully understood.
Improvement in Expressive and Evoked Meaning

Only a minute number of instances were found of improvement in expressive and evoked meaning, of which the former relates to the author’s attitude or feeling and the latter derives from dialect or register variation. There were only three instances where the changes brought about refinement in terms of expressive meaning. One informant replaced the TT1 rendering a student who abide by all rules and regulations (循规蹈矩的学生) with a student who stick rigidly to all the rules and regulations; another changed the phrase a nanny who cares about the small things in daily life (管馒头稀饭的保姆) into a nanny who cares about trifles in daily life after consultation; still another one used interminable to replace endless in the phrase an endless vicious circle (一个没完没了的恶性循环). In these cases, the use of the newly-found lexical items stick rigidly to, trifle and interminable better reflected the original author’s feeling or attitude, which, judging from the context of the source text, was critical and deprecatory. The new versions in TT2 conveyed the derogatory tone of the original. It should be added that the three cases were different from most changes in that the TT1 renderings were considered satisfactory or passable by the NEATI grading criteria. But according to the two raters, the TT2 replacements could be regarded as a plus in the actual grading. So, the three changes stood out as improvement over the already satisfactory TT1 translation.

The single instance of improvement in evoked meaning involved the deletion of the phrase a bunch of from the TT1 translation to produce a bunch of students who are obedient and conservative (教出一个言听计从、循规蹈矩的学生). In terms of register, the informal measure word bunch was not an appropriate choice in an article written in a fairly formal tone about tertiary education.

Syntactic Improvement

Of the 16 syntactic mistakes corrected through lexical lookup, nine had to do with the part of speech. Verbs were used as predicative units (e.g., someone who is foresee), as nouns (e.g., they would set various stipulates), or as adjectives (e.g.,
endless worsen circle); adjectives were used as nouns (e.g., with farsighted visionary) or as adverbs (e.g., good-mannered students); and nouns were used as verbs (e.g., no slippering on campus). Three errors involved transitivity (i.e., who cares only students’ life, when we think it further, and if we carry on this mode). Another three were related to word order, where preposition phrases used as modifiers were placed too far away from the head noun (e.g., a decision maker in charge of academic guidance and educational development of foresight). Such misplacement of modifiers was rectified when needed adjectives were found after consultation (e.g., a farsighted decision maker in charge of academic guidance and educational development). Another syntactic error was an unparalleled coordinate structure: a university president is academic, and a policymaker. In TT2, it was changed to a university president is an academic mentor and a policymaker. Here, the addition of the newly-found word mentor made the new version more balanced than the previous one.

Orthographic Improvement

Of the seventeen rectified orthographic errors, seven were made in the word slipper, which was misspelled as sleeper, slippery or flipper. This was probably because they have similar spelling and pronunciation. In almost the same way, acclaim, boost, chaos, pundit, minister and recycle were mistaken respectively for claim, boast, chores, pedant, administer and cycle. In other instances, non-existing words were invented, such as definitity, trivil, rodile and educationer, which were later correctly changed to definite, trivial, docile and educator. The screen recording of the TT1 translation process showed that all the four misspelled words were flagged, but the first two seemed to be somehow overlooked though they could have been rectified with the help of the spell checker; and the other two were left uncorrected after failed attempts to find a satisfactory substitute from the list of suggested items. However, all the seventeen spelling mistakes were either corrected or displaced by other correctly-spelt words after lookup.
Morphologic Improvement

Of the six morphologic errors corrected through consultation, three involved the misuse of morphologic word formation by derivation. Many English adjectives are formed by adding -ing to a verb, such as following (follow+ing) and entertaining (entertain+ing), but over-generalization of this rule may lead to errors, such as the underlined modifiers in the following phrases found in TT1: no-ending vicious circle, obeying and disciplined students, and mild and well-behaving students. These misused derivatives were replaced with endless, obedient, and well-behaved respectively. Besides, two mistakes in grammatical number, as underscored in to learn self-disciplines and academic researches, were put right after consultation, so was another error in past participle (i.e., if they go on to be baby-sitten in college) by turning the passive voice into the active voice— if colleges go on to “babysit” the students.

Based on the statistics reported above (see Figure 5.3) and analysis of the positive-effect changes made through modification, the following conclusions can be made: (1) the overwhelming majority of positive changes made through modification brought about improvement in semantics; (2) of the semantic improvement, the major part witnessed a repair to the defect in propositional meaning of the lexical item, the minor part helped mend the presupposed meaning, and an infinitesimal proportion brought about an upgrade in expressive and evoked meaning; and (3) a noteworthy proportion of changes led to improvement in syntax, orthography and morphology.

5.1.2.2 Changes Made Through Addition

There were 55 cases of positive effect achieved by filling the lexical void left in TT1. Here, faced with lexical difficulty when preparing TT1, the informants chose to either evade a whole phrase in the source text or omit a part of the phrase which they did not know how to translate. There were eleven instances involving the translation of 严父慈母 (a stern father and a loving mother). In four of them, the phrase was
totally omitted in the first draft, remaining untranslated until access to reference sources was available. In the other seven cases, only part of the term was transferred in TT1. The left-out elements, i.e., 严厉 (stern) or 慈 (loving), or both, were made up for in TT2 after lookup. In the ten instances related to the phrase 循规蹈矩 (accord with the custom and law), the whole term was omitted in TT1. This had to do with the parallel synonymic structure of the original phrase, of which 循规 and 蹈矩 mean almost the same. Therefore, if one of them is an obstacle, so is the other. The same happened in about a dozen cases involving other phrases of parallel synonymic structure, such as 没完没了 (endless) and 言听计从 (readily listen to somebody’s advice and accept it). There were five instances concerning the phrase 恶性循环 (vicious circle), where the avoided element 恶性 (vicious) was added in TT2. In another five cases, the left-out phrase 看情况 (judge the situation/according to circumstances) was only translated after lookup. Other instances of positive changes made through addition involved the translation of 自治自律 (self-control and self-discipline), 拖鞋 (slippers), 馒头稀饭 (steamed buns and congee/trivial matters), 教育者 (educator), etc. The evaded phrases or elements were not rendered until lexical lookup was allowed.

As already mentioned, such instances of improvement achieved through addition amounted to 55, making up 16.6 % of the total positive changes made through consultation. Based on these figures, it can be concluded that a remarkable proportion of the positive changes was made by filling the lexical voids in TT1.

5.1.2.3 Discussion

This discussion focuses on the different types of the positive-effect changes reported above. The quantity and distribution of these changes are summarized in the double pie chart of Figure 5.4. The inside pie displays the classification based on the internal structure of lexical entry (consisting of orthography, morphology, syntax and semantics), plus the changes made by addition, which is named Void Filling. The outside circle keeps all that is in the inside pie except the changes of improvement in
semantics, which is further split up according to the four categories of lexical meaning (i.e., propositional, presupposed, expressive and evoked meaning). The data labels indicate the category, number and percentage of the total positive changes. Though it is not very scientific to put the differently-categorized data all at one level in the outer circle, yet such presentation can illustrate the weight of different changes in the total and their contribution to positive effect.

![Figure 5.4 Distribution of different types of positive-effect changes.](image)

As can be seen from Figure 5.4, the changes that led to improvement in propositional meaning accounted for more than half (54.9%) of the total positive changes, making this category the major contributor to the positive effect. Next, the filling of lexical void was also a remarkable contributor (16.6%); so is the improvement in presupposed meaning (15.5%). The revisions in orthography (5.2%), morphology (1.8%) and syntax (4.8%) added up to more than one-tenth of the total, which made up a noteworthy part of the positive changes. Last, the improvement in evoked and expressive meaning (0.3% and 0.9%) contributed only an insignificant proportion.

The upcoming discussion will be conducted under the following subheadings: (1)
Propositional Meaning, (2) Void Filling, (3) Presupposed Meaning, (4) Orthography, Morphology and Syntax, and (5) Evoked and Expressive Meaning. The improvements in these aspects will be looked into to define what kind of specific positive effect they produced on translation, and a summary will be given at the end of the discussion.

(1) Propositional Meaning

As introduced in Section 5.1.2.1, of the 182 changes that repaired propositional meaning, nearly half (87) involved rectification of some obvious mistranslation of the original text, such as using principal, headmaster or schoolmaster to refer to university president, or using academics, academy, or academia to mean academic research. Such renderings featured what Pym (1992) called binary errors that “opposes a wrong answer to the right answer” (p. 282). The truth value of the misused lexical items was strikingly different from that of the original ones in the source text so that the wrong words could make the translation misleading and confusing. For example, the reader of the target text may wonder what a schoolmaster of university is, or why a university president is compared to a benevolent mother. The correction of such mistranslation in terms of propositional meaning no doubt helped prevent the distortion of the original meaning, thus helping guarantee the meaning-accuracy of the translation.

Apart from the black-and-white correction above, more than half (95) of the 182 positive changes concerning propositional meaning brought about a noticeable improvement to the TT1 renderings. An analysis of the changed parts in the first draft revealed that communication strategies (for detailed discussion see Cook, 2008) were employed to solve lexical problems when the access to reference sources was denied. The adopted strategies included generalization (e.g., using good/great parents to mean strict but loving parents), description (e.g., paraphrasing vicious circle as situation that will become even worse), approximation (e.g., using future-oriented to express the meaning of far-sighted), and substitution (e.g., using this kind of way of teaching to refer to the spoon-fed education). Such tactics are
used to solve problems in communication, hence the name *achievement strategies* (Færch and Kasper, 1984). Although they helped filling vocabulary gaps in the second language (Poulisse, 1999), yet the “fillers” were usually subject to the comment Pym (1992, p. 281) described as “It’s correct, but....” Obviously, there were better lexical choices. Aware of this, the informants replaced the “strategic solutions” in TT1 with the newly-found lexical items that they thought were better.

In fact, such replacements in TT2 were found more precise than the previous TT1 translations in terms of propositional meaning, which can be seen from the examples cited in the above paragraph. A typical instance was the replacement of the rough TT1 rendering *good/great parents* with a more specific version—*strict but loving parents*. The TT1 translation exemplified “the tendency to fall back on very general descriptive terms (such as bad, nice, big, happy, important)” when communication strategies were used, and the result would be a “loss of clarity, variety, vividness, and stylistic appropriacy” (Rundell, 1999, p. 38). Another example was the translation of the phrase *看待* (*treat*). Its TT1 translations, as underlined in the sentence *I consider/regard my students as my own children* (*我把学生当自己的儿女看待*), had largely expressed the idea conveyed in the original term. However, their TT2 replacement *treat* seemed to be a more accurate word if we consider the fact that what follows in the passage is about the university president’s actions rather than perceptions concerning the students. A similar example involved changing *behave* to *act* in the sentence *He did behave like a strict father and loving mother* (*他也真做得像个严父慈母*), the context of which showed that the focus was on the university president’s action rather than behavior. Apart from being more precise in wording, many of the TT2 translations were also more concise than the original circumlocutory renderings in TT1, such as *farsighted*, a replacement of *having clear future plans in their mind*, and *vicious circle*, a placement of *situation that will become even worse*. In addition, some of the TT2 translations seemed to be more natural than the previous renderings in TT1 when we compared *continue to “babysit” in universities* with *keep the “nursery” in universities, cramming way of education*.
with knowledge-feeding education, etc. Moreover, a couple of idiomatic expressions were found to be used in the second version, such as walk the chalk and act at one’s beck and call.

From the above discussion, it can be seen that the changes that repaired defects in propositional meaning not only rectified the renderings that were astray in their truth value but also helped improve precision in wording.

(2) Void Filling

Figure 5.4 shows that filling lexical void (55 cases) made the second largest contribution to the positive-effect changes. First of all, it should be pointed out that in these cases the omissions in TT1 were not a result of active use of the translation-by-omission strategy when “the meaning conveyed by a particular item or expression is not vital enough to the development of the text to justify distracting the reader with lengthy explanations” (Baker, 2011, p. 43). At least in the eyes of the informants, it was necessary to translate those left-out elements; otherwise, they would not have bothered to make up for them in the second version through consultation. So it was more likely that those parts of the source text were left untranslated because they contained some lexical problems which were found unsolvable without the access to reference sources. In other words, the informants were caught in what Bell (1991) called the translator’s “tip-of-the-tongue” phenomenon, an inability to “find the right word” (p. 50). Faced with such a lexical void, however, they did not resort to the achievement strategies. Instead, they adopted what Faerch and Kasper (1984) labeled as avoidance strategies, omitting a whole phrase or a part of it in TT1 as shown in Section 5.1.2.2.

Fifty-five such omissions were rectified in TT2 after consultation. The filling of lexical void made up for the loss of some significant message in TT1. Take for example the TT2 translation a stern but loving parent. It was a more comprehensive conveyance of the meaning of the original phrase 父慈母 (a stern father and a loving mother) in contrast to the previously abridged translation, a parent. The added
element, i.e., *stern but loving*, was an important modifier in the simile *they did act like a stern but loving parent* in that it vividly depicted a quality of the university presidents who made all those rigid and overprotective rules described in the subsequent text. Another example involved *没完没了的恶性循环* (*an endless vicious circle*). In the source text, the phrase appeared in a rhetorical question 大学再来继续进行“育婴”，这岂不是一个没完没了的恶性循环? (*Wouldn’t it merely result in an endless vicious circle if this sort of babysitting is continued at university level?) . Here, the phrase *没完没了的恶性循环* was a segment of the rhetorical status. The omission of 恶性 (*vicious*) in the translation would leave out an essential qualitative judgment in the original text, while the deletion of 没完没了 (*endless*) would lead to the deprivation of the emphatic effect of the original phrase (even though *vicious circle* already carried the connotation of *inexorability*). However, such losses of important message in TT1 were repaired by filling in the missed-out elements. Besides, in over 20 instances, the left-out phrase was one of the two near-synonyms placed side by side in the source text. The affected parallel structures of such kind included 言听计从、循规蹈矩 (*submissive and conventional*), 看情况、做决定 (*adapt to circumstances and make one’s own decisions*), etc. Though the paired terms shared closely-related meaning, there were differences in meaning and focus, making them semantically complementary, not to mention that such coordinative wording might also be seen as a stylistic feature. So both of the paired terms were indispensable and deleting one of them would cause a notable loss of the original meaning. Through consultation, however, the addition of the omitted element recouped such losses, bringing about fuller conveyance of the message carried in the parallel structure. In short, the filling of lexical void made up for the loss of some significant message in translation and helped realize a more comprehensive transfer of the original meaning.

(3) *Presupposed Meaning*

According to Figure 5.4, the 51 changes leading to improvement in presupposed meaning made a notable contribution (15.5%) to the total changes of positive effect.
As reported in Section 5.1.2.1, as many as 25 instances involved the translation of the phrase 恶性循环 (vicious circle), which had an English counterpart—vicious circle—a fixed expression. According to Barker (2011), idioms and fixed expressions are “frozen patterns of language which allow little or no variation in form” (p. 67) and one of the things we cannot normally do with them is to replace a word with another. So the TT1 translations of 恶性循环, such as bad, negative, harmful, terrible circle, etc., violated the collocational norm concerning fixed expressions; and replacing such mistranslations with the right one corrected the mistake in collocation. Other instances also had to do with repairing the breach of restrictions on combination. The following are some examples of improvement in collocation: cultivate/train obedient students, obtainreceive education, growdevelop self-discipline, benignkind mother, and in/on campus, in which the word before the slash was the TT1 version and the one after was the later replacement. The latter versions produced after lookup sounded more natural than the former ones. So, changes bringing about improvements in presupposed meaning rectified collocational mistakes and thus made the translation acceptable in terms of combination.

(4) Orthography, Morphology and Syntax

The reason for combining the changes leading to improvement in orthography, morphology and syntax was given in Section 4.4.3—they all contributed to the correction of language mistakes of one kind or another. Actually, as reported in Section 5.1.2.1, misspelled words were rectified in the changes bringing about orthographical improvement; mistakes in inflection were put right in those producing morphologic improvement; and errors in part of speech, transitivity, word order, etc., were corrected in the changes resulting in syntactical improvement. So they served the same function of repairing some breach of language norms. Though each of the three categories of changes made up only a fraction of the total number of positive changes, they added up to a noteworthy proportion (i.e., 11.8%) when they were thought to have exerted the same function of correcting language errors. So it can be
concluded that the changes bringing about improvement in orthography, morphology and syntax helped correcting various language mistakes in spelling, inflection, word class and sentence structure.

(4) Evoked and Expressive Meaning

The pie-in-pie chart in Figure 5.4 shows that there were only a minute number of instances in which improvement was achieved in expressive and evoked meaning of a lexical item, making up 0.9% and 0.3% of the total positive changes respectively. As reported in Section 5.1.2.1, the three cases of improvement in expressive meaning led to better transfer of the original author’s feeling or attitude while the only positive change concerning evoked meaning brought in a replacement that was more appropriate than the previous version in register. As a tiny fraction of the total, their contributions to the positive effect of consultation on translation were undoubtedly limited and negligible. However, they also contributed to better conveyance of the original meaning and the existence of these few instances showed that lexical lookup could help bringing about better conveyance of the original attitude or feeling or improvement on translation in terms of register.

Table 5.2 sums up the above-discussed specific effects on translation brought about by different categories of positive changes made through lexical consultation. The changes are listed in order of proportion from the dominant to the minor kind, together with a brief description of the effect.

**Table 5.2**

Effects of changes of different categories.

<table>
<thead>
<tr>
<th>Category of Changes</th>
<th>Percentage</th>
<th>Effects on Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Changes repairing defects in propositional meaning</td>
<td>54.9%</td>
<td>Correcting translations wrong in meaning and improve precision in wording</td>
</tr>
<tr>
<td>(2) Changes filling lexical void</td>
<td>16.6%</td>
<td>Repairing loss of significant message and helping comprehensive conveyance of original meaning</td>
</tr>
<tr>
<td>(3) Changes repairing defects in presupposed meaning</td>
<td>15.5%</td>
<td>Correcting collocational mistakes and bringing in acceptable combinations</td>
</tr>
<tr>
<td>(4) Changes repairing defects in orthography, morphology and syntax</td>
<td>11.8%</td>
<td>Correcting language mistakes in spelling, inflection, word class and sentence structure</td>
</tr>
<tr>
<td>(5) Changes repairing defects in expressive and evoked meaning</td>
<td>1.2%</td>
<td>conveyance of attitude and feeling and improving appropriateness in register</td>
</tr>
</tbody>
</table>
As can be seen, the effects produced by the first two and the last categories of changes, i.e., those repairing propositional meaning, those filling lexical void and those repairing expressive and evoked meaning, were all related to the conveyance of meaning in its generic sense. Correcting translations wrong in their truth value, using precise words, mending lost information, and facilitating comprehensive transfer of message all contributed to accurate and comprehensive communication of the original meaning. Considering that these three categories of changes added up to over 70% of the total positive changes, it can be said that a vast majority of positive changes were contributive to the precise and full conveyance of meaning. The third type of changes, those repairing presupposed meaning, made up over 15% of the total. It means that a considerable part of the positive effect was achieved by rectifying collocational errors and producing acceptable combinations. The fourth category, including changes mending defects in orthography, morphology and syntax, accounted for over 11% of the total. So a noticeable part of positive effect was produced by correcting various language mistakes.

To sum up, the exact makeup of the positive effect of lexical consultation on translation can be described as: (1) most of the positive effect involved improvement in accuracy of meaning and transfer of the original message; (2) a considerable part concerned improvement in collocation; and (3) a notable part had to do with correction of language mistakes.

5.1.3 Zero-effect Changes

As discussed in Section 4.4.1, a zero-effect change resulted in neither improvement nor damage to the translation in TT1. A study of the changed parts in the first draft revealed that they could be divided into two kinds, namely, the originally passable and the originally mendable parts. The former referred to a satisfactory segment in TT1 that was later changed into another satisfactory rendering in TT2. The latter meant an unsatisfactory part in TT1 that was changed in TT2 into another unsatisfactory rendering, or a lexical void in TT1 that was filled in with an
unsatisfactory rendering after lexical consultation. In this thesis, a zero-effect modification made to a satisfactory rendering is named as a *change made to the originally-passable* while a zero-effect revision made to an unsatisfactory translation is called a *change made to the originally-mendable*.

![Figure 5.5 Composition of the changed parts in zero-effect changes.](image)

*Figure 5.5 Composition of the changed parts in zero-effect changes.*

Figure 5.5 shows the makeup of revised parts in zero-effect changes: of the total 234 changes, 154, or 65.8%, were made to the originally passable segments; 80, or 34.2% were made to the originally-mendable. Of the total 603 changes, the former accounted for 25.6% while the latter 13.3%. The per capita number of zero-effect changes was 2.6; changes made to the originally-passable averaged at 1.5 per informant and those made to the originally-mendable at 1.1. These two types of zero-effect changes are discussed respectively in the following two subsections.

### 5.1.3.1 Changes Made to the Originally-Passable

Except a score instances, the overwhelming majority of the 154 changes made to the originally-passable featured the replacement of a TT1 rendering with a synonymic word or phrase. In the 16 cases involving the translation of 严父慈母 (*a stern father and a loving mother*), the modifiers used in TT1 such as *strict* and *harsh* were changed to *stern* or *severe* in TT2 while *kind*, *caring* and *gentle* were replaced with *loving* or *compassionate*. There were ten cases concerning the rendering of 做操 (*do physical exercises*), in which the superordinate *do exercise* was changed to *do*
(morning) exercises or the other way round; both the TT1 and TT2 renderings were considered acceptable within the original context. In another ten instances concerning the phrase 保姆 (nanny), babysitter was changed to nanny or vice versa, and other used synonyms included child-minder and nurse. Seven instances involved the phrase 高瞻远瞩 (looking far ahead and aiming high), in which the TT1 translations such as far-sighted, of great vision and with long-term perspective were replaced by forward-looking, with foresight and with a farsighted view. There were seven cases related to the translation of 学会自治自律 (learn to be self-disciplined), where learn self-discipline, learn to discipline oneself and learn to be self-disciplined-controlled-contained-governed were used to replace one another. In other instances, the following pairs or trios of synonymic words were involved: college/university, determiner/decision-maker, situation/condition/circumstance, trivialities/trivial, important/vital, overall/general, reasonable/sensible/plausible, rigid/stiff, etc.; the zero-effect changes also involved synonymic phrases, such as of no end/without end, feed somebody with/on something, hope to get from/expect from, treat somebody like/as/as if, take care of/be in charge of/be responsible for, etc. However, such synonymic replacements made no change to the quality of TT2.

In a score cases, the originally-passable renderings in TT1 were displaced by paraphrastic versions with the same or similar meaning. For instance, the previous translation get up at six in the morning to do physical exercises was changed to get up at six to do morning exercises in TT2. Such new translations, contrasted to the TT1 version in brackets, included the burden falls on us (it becomes our burden), we are left with such responsibility (such responsibility has been passed on to us), I always believe that (in my mind), etc. In a few cases, the rephrased versions were not so close to the TT1 renditions, such as when can we break out of this endless vicious circle? (will that lead to an endless vicious circle?) and those who can adjust to the changing circumstances (those who can size up the situation); but considering the context, the TT2 rendering was thought to be as equally good as the previous one. In two instances, additions were made to the TT1 rendering, such as the underlined
parts in the following phrases: *only know to follow rules and customs* and *a man of foresight and sagacity*. Like the TT2 retranslations discussed above, the added elements were believed to have neither harmed nor considerably improved the earlier versions that were already satisfactory.

### 5.1.3.2 Changes Made to the Originally-Mendable

There were 80 instances of zero-effect changes in which the TT1 versions could have had been repaired but the changes made to them did not bring about any improvement. These changes were looked into from two aspects. First, the changed parts in TT1 are examined to see what went wrong with them; then, their TT2 replacements were studied to find out why they failed to repair the mendable TT1 versions. Since the effect of lexical lookup is the focus here, only a brief account will be given of the changed segments in TT1; after that, a more detailed description will be provided of the failed attempts to improve the first draft.

*Changed Parts in TT1*

The pie-of-pie chart in Figure 5.6 displays the makeup of the mendable parts in TT1. The big pie shows the number and proportion of lexical voids and the composition of the changed parts categorized according to the internal structure of the entry while the small one exhibits the distribution of semantically defective parts divided according to the classification of four types of meaning.

*Figure 5.6 Composition of mendable parts in zero-effect changes.*
Of the total 80, cases of lexical void made up 13%. The units defective in orthography, morphology and syntax made up 4%, 6% and 7% respectively, adding up to 17%. The parts mendable in semantics amounted to 70%. Of the 56 parts inappropriate in semantics, those defective in propositional and presupposed meaning accounted for 93% and 7% respectively.

The analysis of the 80 changed parts in TT1 showed that 56 of them were found semantically inappropriate while three, five and six of them were improvable in terms of morphology, orthography and syntax respectively. There were also ten cases of lexical void, which was filled in later in TT2 with inappropriate renderings.

Of the 56 parts that were semantically mendable, four were found defective in presupposed meaning, i.e., *university runners, make directions, bring out the students*, and *cultivate conservative followers*. The majority, however, were defective in propositional meaning. For instance, seventeen informants used *primary, elementary, basic, fundamental or preliminary education* to mean *primary and secondary education*. Apart from such glaring mistranslations, there were also unsuccessful attempts to convey the original message through paraphrasing. For instance, eight informants who had difficulty with the translation of *喂哺式辅导* (*spoon-fed way of education*) produced various inaccurate or unintelligible renderings, such as “*feed and nanny*”, *give-and-take, feeding and eating, duck-feeding way of education*, etc.

The three cases found problematic in morphology all had to do with misuse of plural number (e.g., *daily lives, decision-makers of insights* and *food and drinks*). In five orthographic errors, *slipper, stuff, principal* and *fundamental* were misspelled respectively as *flipper, stuck, principle* and *fundamental*. There were six segments involving breach of the syntactic specification of the used item, such as mistakes in part of speech, misuse of a gerund phrase as predicate, wrong use of a non-reporting verb (i.e., *regulate*) to lead a *that*-clause, etc.

Of the ten cases of lexical void, two involved the phrase *恶性循环* (*vicious circle*),
of which 恶性 (vicious) was not translated; in another two instances, the term 严父慈母 (stern father and loving mother) was completely or partly left out. Other omissions included idiomatic phrases such as 高瞻远瞩 (looking far ahead and aiming high) and 循规蹈矩 (accord with the custom and law), and metaphoric expressions such as 喂之哺之 (baby-sit them) and 喂哺式 (spoon-fed way). In addition, 看情况 (judge the situation) and 决策者 (policy-maker) also remained untranslated in the first version. Although all the above segments or lexical vacancies were deemed unsatisfactory by the informants, efforts made to repair them turned out to be futile because the mendable rendering in TT1 was displaced by another in TT2.

Based on the above statistics (see Figure 5.6) and analysis of the mendable parts in addressed in zero-effect lookup effort, the following conclusions can be made: (1) the overwhelming majority of the changed parts were problematic in semantics; (2) of the semantically defective parts, the overwhelming majority had to do with propositional meaning and a minor part concerned presupposed meaning; (3) the changes defective in orthography, morphology and syntax summed to a notable part, and (4) lexical voids also made up a small but noticeable proportion.

**TT2 Replacements**

According to the examination of the 80 zero-effect revisions to the mendable parts in TT1, seven of them were defective in morphology, eight had some syntactic problems and 65 of them were found inappropriate semantically.

![Figure 5.7 Composition of zero-effect changes to mendable parts.](image)

*Figure 5.7 Composition of zero-effect changes to mendable parts.*
The pie-of-pie chart in Figure 5.7 displays the distribution of the zero-effect changes made to the mendable parts in TT1. The bigger pie shows the proportion of such changes categorized according the internal structure of lexical entry while the smaller one exhibits further division of semantically defective changes according to Cruse’s (1986) classification of meaning (see Sections 3.3.3 and 4.4.3). Of the total 80, the parts defective in morphology, syntax and semantics made up 9%, 10% and 81% respectively. Of the 65 changes found inappropriate in semantics, those defective in evoked, presupposed and propositional meaning accounted for 1.5%, 17% and 81.5% respectively.

Fifty-three changes were found defective in propositional meaning, i.e., the truth value of the used lexical items. In eighteen cases, the phrase 基础教育 (primary and secondary education) was mistranslated as elementary, fundamental, basic or foundation education. There were five instances in which the unsatisfactory TT1 translation of 喂哺式辅导 (spoon-fed way of education) were replaced with another unsatisfactory one, such as “fed duck” education, feeding assistance, force-fed duck style of education, etc. In other unsuccessful attempts to improve TT1, rector, principal, or president were used mean university president; the phrase 学术 (academic research) was mistranslated as academics or academia; 做操 (do setting-up exercises) was translated as do gymnastics, and 穿拖鞋行走 (walk in slippers) as walk with slippers. Apart from these obvious mistranslations, there were also some versions that were inaccurate in a more subtle way. In these cases, the propositional meaning of the lexical items used in translation was not fully understood and observed. For example, several informants seemed to have trouble translating the phrase 基础教育没教好, which, in the original context, meant failure to teach the students self-discipline in elementary and secondary schools. Adopting the communication strategy of generalization, they translated the phrase as failure of, or poor performance of the elementary and secondary education, thus taking a part for the whole by amplifying a specific fault. On the other hand, some revisions in TT2 were found inappropriate for being too specific. For example, the clause 他们
一直接受喂哺式辅导 (they have all along been taught in a spoon-fed way) was translated as they have been fed mouthful by mouthful by counselors. Other ambiguous or misleading paraphrases were also found in the TT2 revisions. For instance, 高瞻远瞩的决策人 (a far-sighted decision maker) was rendered as a decision-maker who should foresee the future; 一个会自己看情况做决定的学生 (a student who can make his own decisions according to circumstances) was translated as a student who is able use own intelligence to solve problems according to the changing conditions. To sum up, all the 53 TT2 modifications discussed here involved misuse of some lexical item in terms of its propositional meaning, which brought about a distortion of the original meaning in the source text rather than an improvement to the previous mendable translation in TT1.

There were eleven changes which were found defective in terms of the presupposed meaning. Six of them had to do with verb-object collocation (e.g., set regulations, cultivate a student, experience the education). Two revisions were related to the set phrase 恶性循环 (vicious circle), which was translated as malignant circle. Besides, one informant misused the phrase depending on in a sentence where, in the light of the context, according to should be used. In two cases, the unsatisfactory TT1 rendering university runners was changed to university organizers and university educators, both of which were awkward in terms of collocation.

There was only one item that was found defective in evoked meaning, that is, the meaning arising from dialect or register variation. One informant, unsatisfied with his TT1 translation of 喂哺式辅导 (spoon-fed way of education) as duck-feeding education, changed it to “breastfeeding” education after consultation. Although the newly-found word was put between quotation marks to indicate that it was used figuratively, it was still an inappropriate lexical choice in regard to register, especially the setting in which the word is usually used. Considering the context of the original article, it seemed rather stretched and unnatural to compare an overprotective university president to a breastfeeding mother. Actually, babysitting or spoon-feeding would be a better choice than breastfeeding. Besides, the
newly-coined metaphor closely resembled the term *breastfeeding education*, which means *training in breastfeeding*.

Of the eight syntactically flawed revisions, four had to do with part of speech. For instance, *spoon-feed* was taken as a noun or adjective; *cram* was used as a modifier in *cram education*; and *visionary* was mistaken for a noun. Other changes included a breach of subject-verb agreement (i.e., *a student who obey all the rules*), an incomplete participle phrase (i.e., *a decision-maker standing high and see far*), a misplaced modifier (i.e., *policymakers who provide guidance for academic and educational affairs with great foresight*) and two prepositional phrases misused as the predicate (e.g., *a nanny who in charge of food* and *a student who always at others’ beck and call*).

As can be seen, no orthographic mistake was found among the changes, which means that such errors in TT1 were either corrected or avoided even though they were displaced by some mistranslation of other types. A typical example involved the word *slipper*, which was misspelled as *flipper* in TT1. After lookup, the spelling mistake was corrected in TT2, but unfortunately, the rightly-spelled word was wrongly used in its singular form—an orthographic error was changed to a morphologic error. The other inflectional mistakes also had to do with number, such as the underlined parts in the following phrases: *foods and drinks, with great foresights, academic and educational affair*, and *take order without question*.

Based on the above statistics (see Figure 5.7) and analysis of the zero-effect changes made to the mendable parts in TT1, the following conclusions can be made: (1) the overwhelming majority of the changes were problematic in semantics; (2) of the semantically defective changes, the overwhelming majority had to do with propositional meaning and a notable proposition involved presupposed meaning; and (3) the changes defective in morphology and syntax also added up to a remarkable proportion.
5.1.3.3 Discussion

In the above account of the zero-effect changes, they were divided into two kinds, that is, those made to the originally passable renderings and those made to the originally mendable. As it turned out, the former involved replacement of the TT1 versions with synonymous or paraphrastic units that were equally satisfactory, and the latter introduced modifications that brought no improvement to the previous unsatisfactory versions. In terms of effect on translation, both kinds of changes brought about neither harm nor good to TT1. According Figure 5.2, the zero-effect changes made up 38.8% of the total changes made through lexical consultation. In other words, more than one-third of total changes were made to no avail in terms of actual benefit. Since they had no practical effect on translation, they would be disregarded when defining the consultation effect.

However, it was not exactly true that the zero-effect changes had no effect on translation at all if we take translation as a process or activity, rather than using the word only in its narrow sense to mean translated text. Among other things, the zero-effect changes did slow down the translation process and affect the consultation efficiency. Since time spent on translation or consultation is not a factor to be studied in this thesis, the following discussion will not deal with the time cost of the zero-effect changes, but focus on their implications to this study.

The analysis of the 234 zero-effect changes showed that 154, or 65.8%, of them were made to the originally passable parts. In other words, nearly two thirds of the zero-effect modifications were unnecessary. In the total changes made through consultation, such changes amounted to 25.5%, making a considerable part of the total. In these cases, the originally satisfactory parts in TT1 were thought unsatisfactory so that they needed repairing. Such misjudgment reflected the informants’ uncertainty about their lexical choice and led to unnecessary consultation and modification. As the analysis in the previous section showed, the lookup-induced changes did not bring about any negative effect on the translation product. Using the
model of lexical consultation in translation discussed in Section 3.2.2, we can say that a mistake in identifying a lexical problem might not necessarily lead to adverse effect on the translated texts.

On the other hand, 80 zero-effect changes were made to the originally mendable parts in the first draft, accounting for 13.3%—a noticeable proportion—of the total number of the changes made to TT1. In these revisions, the informants rightly realized the need for repair in TT1, but their efforts to improve the unsatisfactory renderings turned out to be futile. These zero-effect changes were actually unsuccessful attempts to solve lexical problems. On the one hand, the originally mendable parts in TT1 yielded more data for studying what kind problems were addressed through lexical consultation. On the other, the unsatisfactory changes provided valuable data for the exploration of failed consultation efforts in translation, another topic of interest to be dealt with in this research.

To sum up, the zero-effect changes brought neither harm nor benefit to the translation, so they were not taken into account in the description of the consultation effect on translation. However, they yielded data for the exploration of the lexical problems that prompted lookup and the problems that were left unsolved after the consultation attempt. Their notable proportion in the total changes made them a phenomenon worth attention.

5.1.4 Negative-effect Changes

Negative-effect changes were those modifications that were made for the worse to the already satisfactory renderings in TT1. Such changes are reported and analyzed in Section 5.1.4.1, followed by a discussion in Section 5.1.4.2.

5.1.4.1 Analysis

Figure 5.8 below illustrates the distribution of the negative-effect changes. The bigger pie shows makeup of such changes classified the according the internal
structure of lexical entry while the smaller one reveals proportion of the semantically
defective changes grouped according to the categorization of four types of meaning.

Of the total 37 negative-effect changes, the revisions defective in semantics, syntax
and morphology accounted for 86.5%, 10.8% and 3.7% respectively. Of the 32
changes found defective in semantics, those inappropriate in propositional,
presupposed, evoked and expressive meaning accounted for 50%, 40.6%, 6.3% and
3.1% respectively. In terms of quantity, of the total 37 changes, 32 were found
defective in semantics and four involved violation of syntactic specification. No
breach was committed of a lexical item’s orthographic specification but there was
one morphologic error. These negative-effect changes are reported in the following
under two subheadings, Semantics and Syntax and morphology.

![Figure 5.8 Composition of negative-effect changes.](image)

**Semantics**

An analysis of the 32 changes defective in semantics shows that the revisions found
faulty in terms of propositional, presupposed, expressive and evoked meaning
amounted to sixteen, thirteen, two and one respectively.

Of the sixteen changes found defective in propositional meaning, i.e., truth value,
obvious mistranslations included *learn to be self-disciplinary*, *feeding-style
education*, *learn self-discipline during their pre-college education*, *a nanny taking
care of the students’ daily food supply*, *to train talents to have independent judgment*,
etc. The underlined parts were misused, whose propositional meaning seemed to be
misunderstood by the translators. Apart from these glaring errors, there were two revisions involving nuances of synonyms that were more subtle. The phrase 做得像个严父慈母 (act just like strict but compassionate parents) was first translated in TT1 as they do act like a strict father and a loving mother and they are really like strict fathers and caring mothers, both of which were later changed to they do behave like .... Considering the context, the original verb act was a more appropriate word than behave in terms of their propositional meaning (see Section 5.1.2.3 for more detailed discussion). Another two cases concerned the translation of the clause 我就不必如此喂之哺之 (I don’t have to babysit them so much). In the first draft, it was rendered as I don’t have to go this far taking care of their daily life and I don’t have to take care of them like this. The two paraphrastic renderings were satisfactory in that they put across the meaning of the metaphorical phrase 喂之哺之 (babysit them). However, they were replaced by I don’t have to go this far feeding them and I don’t have to feed the students in TT2. Although literally feed is very close to 喂哺 (feed/nurse), yet the new versions failed to communicate what was implied by the metaphor. Other changes found defective in propositional meaning contained some misconception about the lexical items used. For instance, forbidden to walk across the campus in slippers and shall not wear slippers on campus had different truth value with that of 不许穿拖鞋在校园行走 (not allowed to walk round the campus in slippers). In another case, 他也真得像个严父慈母 (he acts like strict but compassionate parent) was retranslated as his act follows his words, in which the propositional meaning of the word follow was probably misunderstood as square with or be as good as.

Of the 32 semantically defective changes, thirteen were found problematic in the presupposed meaning, i.e., collocational restriction. Five instances involved the misuse of the adverbial depending on different circumstances to modify the verb phrase make decisions on one’s own. Four changes were related to the translation of 指导……方向 (set the course of.../provide guidance on...). Awkward juxtaposition was found in the following verb phrases: lead/point the orientation of... and instruct
Another unsuccessful retranslation, accept education, also involved verb-object collocation. Besides, two revisions concerned the translation of 睡足8小时 (have at least eight hours of sleep). The phrase was rendered as sleep enough for eight hours and sleep adequately for eight hours, in which the two adverbs, enough and adequately, were uncalled-for. In another negative-effect change, in the school was displaced by in the campus, where a more natural expression would be at the campus or on campus.

The two changes considered inappropriate in terms of evoked meaning had to do with two metaphorical phrases, i.e., 不必如此喂之哺之 (do not have to babysit them so much) and 喂哺式的辅导 (spoon-fed way of education), which were rendered in TT1 respectively as do not have to act like a nanny and baby-sitting education. However, after consultation, the two satisfactory renderings were replaced by do not have to do such “breastfeeding” and breastfeeding education. As already discussed in Section 5.1.3.2, breastfeeding was an inappropriate lexical choice in terms of register.

The only revision found defective in expressive meaning involved the translation of the phrase 一个言听计从、循规蹈矩的学生, which was rightly translated in TT1 as a student who is submissive and orthodox. Perhaps unsatisfied with the briefness of the translation, the informant changed orthodox to strictly upright and correct after consultation. The new translation lost the depreciatory attitude in the source text, which had been successfully conveyed in the previous rendition.

Syntax and morphology

Of the four changes that were found defective in syntax, two involved part of speech (e.g., daily trivials); one contained misuse of a prepositional phrase as the predicate (i.e., a student who always at our beck and call); and the other one involved remote placing of the modifier from the head word. The single change problematic in morphology had to do with number of nouns (i.e., make decision).

Based on the above statistics (see Figure 5.8) and analysis of the negative-effect
changes, the following conclusions can be made: (1) the overwhelming majority of the changes were problematic in semantics; (2) of the semantically defective changes, the majority had to do with propositional meaning and a considerable proportion involved presupposed meaning; and (3) the changes defective in morphology and syntax also added up to a notable part.

5.1.4.2 Discussion

The discussion of the negative-effect changes focuses on three aspects. First, the role of such changes is examined in relation to the overall effect of consultation on translation. Then, the significance of these changes to the present study is explored. Last, a description is made of a pattern appearing in the negative changes as well as in other types of changes.

First, the negative-effect changes brought about adverse consequence to the translation product—the satisfactory segments in TT1 were changed for the worse after consultation. However, considering their small number and proportion in the total changes made (i.e., 37 and 6.1%; see Figure 5.2), the negative effect could be said to be limited and marginal. As pointed out in Section 5.1.1, when the number of negative-effect changes was deducted from that of positive-effect changes, the quantity of the latter made up 48.9% of the total, still being the largest share. In other words, the loss caused by negative-effect changes was not significant enough to change the positive nature of consultation effect on translation.

The negative-effect changes were characterized by replacing a satisfactory rendering with a faulty one after lexical lookup. Such unsuccessful consultation attempts can be traced back to the misjudgment about TT1. Usually, it was when a segment in the first draft was deemed unsatisfactory that the informant set out to modify it through consultation. The analysis in the previous section showed that all the 37 changes were unnecessary in the first place because the changed parts in TT1 were already good enough. So the misjudgment about the TT1 rendering was the root cause for the negative-effect changes. However, such misreading might not necessarily lead to
undesirable results, as we have seen from the zero-effect changes made to the originally passable parts, where a satisfactory rendering was replaced by another satisfactory one (see Sections 5.1.3.1 and 5.1.3.3). Assumably, there could have been other factors that led the consultation effort astray. In this sense, the negative-effect changes provided more data for studying the causes of unsuccessful consultation attempts in this thesis.

Last, a recurrent pattern can be detected from the analysis of different types of changes. Figure 5.8 in Section 5.1.4.1 summarized the distribution of the negative-effect changes made to the satisfactory renderings in TT1. If we compare it with the composition of the zero-effect changes made to the mendable parts shown in Figure 5.7, we can find that they shared a lot in common. Both types of changes featured (1) an overwhelming majority of changes that were defective in semantics, (2) a majority of semantically defective changes that were inappropriate in propositional meaning and a notable minority of changes that were inappropriate in presupposed meaning, and (3) a noteworthy proportion of changes that were problematic in morphology and syntax. Since the two kinds of changes in question were unsuccessful revisions made to TT1, the three shared features actually characterized the erroneous replacements in TT2. They described what was wrong with the results of lookup and what major problems rendered the consultation attempt futile.

Similarly, if we compare the composition of the parts improved by positive-effect changes made through modification (see Figure 5.3) and that of the revised parts in TT1 that were mendable in zero-effect changes (see Figure 5.6), we will find that they shared almost identical features. Both of them were characterized by (1) an overwhelming majority of changed parts that were defective in semantics; (2) a majority of semantically defective segments that were inappropriate in propositional meaning and a noticeable minority found defective in presupposed meaning; and (3) a notable proportion of parts that were defective in syntax, orthography and morphology. The three points summarized features of the problems that were solved
(as was the case in positive-effect changes) or thought to be have been solved (as was the case in zero-effect changes). In other words, they told us what kind of lexical problems were tackled through lexical consultation.

The above analysis has also revealed that the lexical problems addressed and those remaining or coming up after lexical consultation shared basically identical features, except that orthographic errors disappeared after lookup. To use the more general categories introduced in in Section 4.4.3, i.e., language-, meaning-, and collocation-related mistakes, we can conclude that (1) the major lexical problem troubling the informants was meaning-related, (2) the second problem was collocation-related, and (3) the third was language-related. Such a recurrent pattern reflected the informants’ lexical difficulties in translation, telling us what kind of lexical problems were addressed through lexical consultation and what kind of problems were left after consultation.

The following conclusions can be drawn the above discussion. The impact of the negative-effect changes was not significant enough to alter the positive nature of the overall effect of lexical consultation on the translation, but such changes offered data for studying the unsuccessful reference attempts. Moreover, three features were discerned of the lexical problems tackled or left in consultation attempts.

5.1.5 Summary

By dividing the changes made to TT1 according to their effect and comparing their relative weight in the total, Section 5.1 confirmed Hypothesis 1A that predicted a generally positive effect of lexical consultation on translation. At the same time, it was also found that a remarkable proportion of the changes produced no actual impact on translation while a small part caused adverse effect. Furthermore, the descriptive statistics on the changes also confirmed the representativeness of the data collected and the success of the experiment design in exposing the informants to anticipated lexical problems and in generating adequate consultation acts to be studied.
The analysis of the positive changes made to TT1 revealed the exact makeup of the positive effect of consultation on translation. Most of such effect was achieved through improvement of accuracy in meaning and comprehensive transfer of the original message; a considerable proportion was produced through betterment in collocation; and noticeable part was brought about by rectifying language errors. Though only a negligible contribution was made by refinement in register and better conveyance of the original attitude or feeling, the existence of such cases showed that lexical consultation could bring about improvement in these respects.

The zero-effect changes were not taken into consideration in defining the effect of consultation on translation since they neither harmed nor benefited the translated text. Nevertheless, their notable proportion in the total made them a phenomenon worth examining in this thesis. And they also produced useful data for studying the lexical problems tackled and those left in the lookup attempt.

While the negative-effect changes brought harm to the final translation product, due to their limited amount in the total, they did not change the positive nature of the overall effect of consultation. However, such changes provided useful data for a later exploration of the causes of unsuccessful reference attempts.

Last, from the analysis in Section 5.1 emerged a recurrent pattern characterizing the lexical problems that caused lexical lookup and the problems that remained after consultation. They were found to share the following features: (1) the great majority was meaning-related problems, (2) a minority was collocation-related, and (3) a notable part was language-related. These characteristics, together with those describing the positive effect, told us about the types of lexical problems that were addressed, solved, and left behind in the consultation attempts.

5.2 Between-group Differences in Consultation Effect

After the study of consultation effect achieved by the whole sample in the Section 5.1, the between-group differences in consultation effect are analyzed in this section to test out Hypothesis 1B, which is repeated here,
**Hypothesis 1B:** The subjects from higher levels or with higher scores in translation will have a higher success rate of consultation while those from lower levels or with lower marks will have a higher failure rate of consultation.

To discover the correlation between the informants’ consultation efficiency on the one hand, and their translation score and group level on the other hand, a quantitative analysis is done on the lookup-induced changes made by the three level groups in terms of the consultation effect. First in Section 5.2.1, the total changes made by different groups are counted, compared and discussed, and the between-group differences and possible correlations are tested statistically. Similar analyses are made of positive-, zero-, and negative-effect changes respectively in Sections 5.2.2, 5.2.3 and 5.2.4. Last, the success and failure rates of consultation are worked out in Section 5.2.5 to see if they confirm Hypothesis 2A, followed by a summary in Section 5.2.6.

![Figure 5.9 Total changes made by three groups.](image)

Before the detailed discussion on the between-group differences in consultation effect, the descriptive statistics of the total and the three types of changes are presented here in Figure 5.9 and Figure 5.10 respectively, which are referred to in the following subsections.
Figure 5.10 Three types of changes made by three groups.

The two figures show us some general trends across the three competence levels. As can be seen from Figure 5.9, the number of the total changes was on the decline from the novice to the advanced level. According to Figure 5.10, in each group, positive-effect changes made up the majority (ranging from about 51% to 58%) of the total and next came zero-effect changes (ranging from about 35% to 40%) while the number of negative-effect revisions was drastically smaller (ranging from about 4% to 8%) than the other two types. This pattern agreed with the composition of the total changes made by the whole sample shown in Figure 5.2. In addition, a comparison of the three groups’ column charts reveals that, except the negative-effect changes, there was a decline in the other two types of changes from the novice to the advanced level.

5.2.1 All Changes Made

Of the total 602 changes made by all the informants, 247, 196 and 159 changes were made by the novice, intermediate and advanced groups respectively (see Figure 5.9). Their respective number per capita was 8.2, 6.5 and 5.3. To see whether such differences were statistically significant, three Mann-Whitney U tests were conducted among three groups, i.e., between the novice and intermediate groups,
novice and advanced groups, and advanced and intermediate groups. The outcomes indicated that the novice group had a significantly larger number of changes than the advanced group \(U = 222.5, \ p = .001\). But the difference was not statistically significant between the novice and intermediate groups \(U = 324.5, \ p = .061\) and between advanced and intermediate groups \(U = 344.5, \ p = .116\).

A Spearman’s Rank Order Correlation was run to determine the relationship between the group level and the number of changes. The result showed that Spearman’s correlation coefficient, \(r_s\), was -.362, and this was statistically significant \(p = .000\) at the .05 level. Therefore, there was a weak negative correlation between the group level and number of changes. The same test was done on the relationship between the translation score and the number of changes. It was found that there was also a negative correlation \(r_s = -.342\) between the translation mark and number of changes, which was weak but statistically significant \(p = .001\).

Judging from the primary data, it seems that the three groups differed considerably from each other. The novice group, for example, made 247 changes, over 50% higher than the 159 changes made by the advanced group (see Figure 5.9). However, Mann-Whitney U tests revealed that only the difference between the novice and advanced levels was statistically significant while the other contrasted pairs had no significant difference. These results show that significant difference existed between the top and bottom levels but not between the neighboring levels. So it can be concluded that the novice group had remarkably larger number of changes than the advanced group. As the difference between the adjacent levels was not statistically significant, it seems that there was a gradual decrease in the number of changes from the novice to advanced level.

The Spearman’s coefficient tests confirmed a weak negative correlation between the number of changes on the one hand, and the group level and translation score on the other. In other words, informants from lower level or with lower translation score had more changes, and those from higher level or with higher mark made fewer changes. As the group level and translation score were used to grade translation
competence in this study, it can be said that the effect of lookup on translation decreased with increasing translation competence.

The above findings were basically in line with the results of some previous studies. Tirkkonen-Condit (1987) found that dictionary use as a main method for solving translation problems decreased with increasing professionality. Jääskeläinen’s (1989) translation students from advanced level looked up fewer items than those from beginner level; Li’s (1998) low-score group (23.75 words per person) consulted about many more words than the high-score group (16.75 words per person); Ronowicz et al. (2005) showed that the novice translators used dictionaries more frequently than paraprofessional and professional translators; Wang and Xu (2012) discovered that the low-score group had a higher frequency of dictionary consultation than high-score group and medium-score group. Although the findings of these differently-designed studies were not comparable, they all seem to confirm our general impression that the need for lexical consultation decreases with growth of translation competence.

5.2.2 Positive-effect Changes

Of the total 331 positive-effect changes, 127, 112 and 92 were made respectively by the novice, intermediate and advanced groups, making up 51.4%, 57.1% and 57.9% of their individual total (see Figure 5.10). Their respective number per capita was 4.2, 3.7 and 3.1. The results of Mann-Whitney U tests showed that the difference in the number of positive-effect changes was not statistically significant among the three groups (between the novice and intermediate: $U = 383.5$, $p = .316$; between the novice and advanced: $U = 319.5$, $p = .051$; and between the advanced and intermediate: $U = 374$, $p = .252$).

A Spearman’s correlation test was conducted to find out the relationship between the number of such changes on the one hand, and the group level and translation score on the other. The results showed that there was no statistically significant correlation between the number of positive-changes on the one hand, and the group level ($r_s =$
- .215, \( p = .042 \) and translation mark \( (r_s = -.211, \ p = .046) \) on the other at the .05 level.

Although the numbers of positive-effect changes made by the three groups decreased from the novice to advanced group, with a gap of over 35% (i.e., 127 : 92) between the top and bottom level, the Mann-Whitney U tests showed that the difference was not significant. In other words, there was no significant difference in positive effect among the groups. In addition, the Spearman’s tests found no significant correlation between the examined variables. So statistically, we cannot say that the higher the level or translation mark was, the less positive-effect there would be. Therefore, the positive effect achieved through consultation did not differ significantly among the groups and it had no significant correlation with translation competence.

The non-significant between-group differences might have to do with the informants’ translation skills. Generally speaking, informants from lower levels or with lower marks were thought to face more lexical problems and have more chances to make positive changes than those from higher levels or with higher scores. But their assumed poorer translation skills might have affected their consultation effect, thus narrowing the possible gaps in the number of positive-effect changes among the three groups.

Atkins and Varantola (1998) also touched upon the positive effect of lookup by stratified sample, but not in terms of the actual changes made to translation. The lookup effect was measured by seeing whether a correct answer was given after dictionary use to five lexical questions concerning a L1-L2 translation task. It was found that four groups of informants had 39, 95, 107 and 102 lookups respectively from Grade A (top level) to Grade D (bottom level) and the number of successful lookup amounted to 23, 42, 49 and 40 respectively. However, as the research design was vastly different from that of this thesis, especially in translation task, the results cannot be contrasted with the present findings.
5.2.3 Zero-effect Changes

Of the total 234 zero-effect changes, 101, 76 and 57 changes were made respectively by the novice, intermediate and advanced groups, making up 40.9%, 38.8% and 35.6% of their individual total (see Figure 5.10). Their respective number per person amounted to 3.4, 2.5 and 1.9. The results of Mann-Whitney U test indicated that the novice group had a significantly larger number of zero-effect changes than the advanced group ($U = 276.5$, $p = .009$). But the difference was not statistically significant between the novice and intermediate groups ($U = 367.5$, $p = .214$) and between the advanced and intermediate groups ($U = 345.5$, $p = .114$).

The outcomes of Spearman’s rank correlation test showed that there was a statistically significant correlation between the number of zero-changes on the one hand, and the group level ($r_s = -.285$, $p = .007$) and the translation marks ($r_s = -.270$, $p = .010$) on the other. Therefore, it was confirmed that there was a weak, negative correlation between the number of zero-effect changes on the one hand, and the group level and translation mark on the other.

When the zero-effect changes were further divided into those made to the originally passable and the originally mendable parts, it was found that the novice, intermediate and advanced groups made 54, 53 and 47 changes respectively to the originally passable parts, averaged at 1.8, 1.8 and 1.6 per person. The results of Mann-Whitney U tests showed that no significant difference was found among the groups in such changes (between the novice and intermediate: $U = 419.5$, $p = .644$; between the novice and advanced: $U = 444$, $p = .927$; and between the advanced and intermediate: $U = 407.5$, $p = .518$).

Of the total 80 zero-effect changes made to the originally mendable parts, the novice, intermediate and advanced groups made 47, 23 and 10 such revisions respectively, averaged at 1.6, .8 and .3 per person. Mann-Whitney U tests confirmed that the novice group had a significantly larger number of such changes than the intermediate ($U = 258.5$, $p = .003$) and advanced groups ($U = 143.5$, $p = .000$). And the difference
was also statistically significant between the intermediate and advanced groups ($U = 330.5, p = .004$). Further Spearman’s correlation tests revealed that there was a moderate, negative correlation between the number of such changes on the one hand, and the group level ($r_s = -.519, p = .000$) and translation mark ($r_z = -.487, p = .000$) on the other.

With regard to the zero-effect changes, the Mann-Whitney U tests showed that only the difference between the novice and advanced levels was statistically significant while the other paired groups had no significant differences. These results could be understood as that significant difference existed between the top and bottom levels but not between the adjacent levels. So there seemed to be a gradual decrease in the number of zero-effect changes from the novice to advanced level. Since such changes were actually futile reference attempts, it could be concluded that the amount of fruitless consultation effort gradually decreased from the novice to the advanced level.

The significant negative correlation found between the number of zero-effect changes on the one hand and group level and translation marks on the other indicated that the amount of ineffective reference effort decreased with higher group level or translation mark. In other words, the informants from lower levels or with lower translation scores made more vain consultation attempts, and those from higher level or with higher mark made fewer such attempts.

The non-significant difference among the groups in the number of zero-effect changes made to the originally passable parts confirmed the impression that there was not much between-group difference in this kind of changes (the three groups made 54, 53 and 47 such changes from the bottom to the top level). As discussed in Section 5.1.3.3, this type of changes featured the replacement of a satisfactory rendering with another one and they were believed to be prompted by misjudging an already acceptable segment as problematic; but they brought about no adverse effect on translation. So it can be said that the amount of such no-effect misjudgment did not vary much among the three groups.
As for the number of zero-effect changes made to the originally mendable parts, the between-group difference was statistically significant. The Mann-Whitney U tests found that the three groups were remarkably different from each other. Since such changes were actually failed consultation attempts to rectify the defective segments in TT1, it can be concluded that the number of such unsuccessful reference attempts decreased remarkably from the novice to advanced level. Moreover, the Spearman’s coefficient tests detected a moderate negative correlation between the number of such changes on the one hand, and the group level and translation mark on the other. Based on these results, it can be said that informants with better competence made fewer failed consultation attempts to mend mistranslation.

Few previous studies compared the zero-effect consultation by stratified sample. But Livberg and Mees (2003) reported such consultation by the whole sample, i.e., ten postgraduate students who had passed the L1-L2 translation course with high marks. It was found that of the total 115 looked-up units, only 26 changed the quality of the target texts, which means a large proportion of consultation produced no effect. Such a phenomenon was interpreted as excessive use of dictionaries caused by the informants’ lack of confidence in their L2 competence.

5.2.4 Negative-effect Changes

Of the total 37 negative-effect changes, 19, 8 and 10 were made respectively by the novice, intermediate and advanced groups, making up 7.7%, 4.1% and 6.3% of their individual total (see Figure 5.10). Their respective number per capita was .6, .26 and .3. The Mann-Whitney U tests found that the difference in the number of such changes was not statistically significant among the three groups (between the novice and intermediate: \( U = 373.5, p = .161 \); between the novice and advanced: \( U = 405, p = .430 \); and between the advanced and intermediate: \( U = 410, p = .450 \)).

A Spearman’s correlation test showed that there was no statistically significant correlation between the number of changes on the one hand, and the group level \( (r_s(8) = -.028, p = .445) \) and translation marks \( (r_s(8) = -.099, p = .353) \) on the other.
Judging from the numeral data, it seemed that number of such changes made by the novice group was about twice as large as those of the other two groups (i.e., 19 : 8; 19 : 10) (see Figure 5.10). But the Mann-Whitney U tests showed that there was no statistically significant difference among the groups. As the negative-effect changes brought about adverse impact on translation, it can be concluded that the negative effect of lookup was undifferentiated across the three levels. Moreover, according to the results of the Spearman’s tests, the number of negative-effect changes had no significant correlation with the group level or translation score. So statistically, we cannot say that the negative effect of consultation decreased with increasing translation competence.

Such findings were contrary to the usual assumption that informants from lower level or with lower mark tend to have more negative-effect changes because of their limited translation ability. However, the total quantity of negative-effect changes by the whole sample was quite small, as can be observed from the primary data (see Figure 5.2). Compared with the number of the positive- and zero-effect changes (i.e., 332 and 234 respectively), the total 37 cases of negative-effect revisions were strikingly sparse. So they had a marginal impact on the general effect of consultation (see Sections 5.1.1 and 5.1.4.2). In addition, such changes made by each group accounted for only a small fraction of its total, ranging from about 4% to 8% (see Figure 5.10). This meant that at each level, their role in the effect of consultation on translation was also quite limited. Moreover, a frequency test showed that of the total 90 informants, only 28, less than one-third, made changes of this kind while 87 and 80 made positive- and zero-effect changes respectively; and the number of informants making negative-effect changes amounted to only 11, 7 and 10 in the novice, intermediate and advanced groups respectively. So, the overwhelming majority of the informants did not make negative-effect changes whether in the whole sample or in each group. In other words, for most of the participants, lexical lookup produced no negative effect on translation. It should be admitted that these descriptions of the sparse occurrence and limited impact of negative-effect changes
were about similarities rather than differences among the groups, but together with the non-significant differences and correlations discussed above, such descriptions helped present a more comprehensive picture of the negative effect of consultation in each group.

Few studies examined the negative effect of lexical consultation by stratified sample. Li (1998), however, reported that the low-score group made more mistakes after dictionary use than the high-score group. But no further analysis was offered in that study, and there were only two contrasted subject groups.

5.2.5 Success and Failure Rates

According to the definitions given in Section 4.1.1, a successful lexical search or consultation attempt to solve one lexical problem features the integration of an appropriate item into the target text while an unsuccessful one is characterized by the integration of an inappropriate item. By this definition, successful consultation attempts included not only the positive-effect changes but also the zero-effect changes made to the originally passable unit in TT1 because the latter also brought about the integration of an appropriate item into the translated text. Similarly, unsuccessful consultation efforts comprised the negative-effect changes plus the zero-effect changes made to the originally mendable parts as the latter were also failed lookup attempts ended up with the integration of an inappropriate item. So in this study, success rate of consultation refers to the proportion of positive-effect changes plus zero-effect changes made to the originally passable translation to the total changes; and failure rate of consultation means the proportion of negative-effect changes plus zero-effect changes made to the originally mendable parts to the total changes.

The success rates of the novice, intermediate and advanced levels were 73.3%, 84.2% and 87.4% respectively while that of the three groups as a whole was 80.6%. The Mann-Whitney U tests on the 90 participants’ individual success rates showed that there was statistically significant difference between the novice group on the one
hand, and the intermediate group \((U = 248.5, p = .003)\) and advanced group \((U = 232, p = .001)\) on the other; but the gap between the intermediate and advanced groups was not significant \((U = 415.5, p = .594)\). The results of the Spearman’s tests shows that there was significant correlation between the success rate on the one hand, and the group level \((r_s = .358, p = .001)\) and translation marks \((r_s = .0352, p = .001)\) on the other.

The failure rates of the novice, intermediate and advanced groups were 26.7%, 15.8% and 12.6% respectively while that of the three levels as a whole amounted to 19.4%. The Mann-Whitney U tests on the three level groups’ failure rates showed that the novice group had a significantly higher failure rate than the intermediate group \((U = 248.5, p = .003)\) and the advanced group \((U = 232, p = .001)\). But the difference was not statistically significant between the intermediate and advanced groups \((U = 415.5, p = .594)\). Besides, the Spearman’s tests showed that a significant weak negative correlation existed between the failure rate on the one hand, and the group level \((r_s = -.358, p = .001)\) and translation marks \((r_s = -.352, p = .001)\) on the other.

The results of Mann-Whitney U tests showed that the intermediate and advanced groups had significantly higher success rates than the novice group. Besides, according to the outcomes of Spearman’s correlation tests, the success rate of lexical consultation had significant positive relationship with the group level and translation marks. In other words, statistically, the subjects from higher levels or with higher translation scores had a higher success rate of consultation. Thus, the first part of Hypothesis 1B about the assumption of such a positive correlation was confirmed.

On the other hand, the Mann-Whitney U tests revealed that the novice group had a significantly higher failure rate than the intermediate and advanced groups while the difference between the latter neighboring levels was not significant. Furthermore, according to the results of the Spearman’s tests, a significant negative correlation was found between the failure rate on the one hand, and the group level and translation score on the other. This meant that informants from lower levels or with lower marks had a higher failure rate of consultation, thus confirming the second part.
of Hypothesis 2A postulating such negative correlations. In other words, the failure rate decreased with increasing translation competence.

Success and failure rates of lookup were examined by previous lexicographic studies, but in a different sense and with different methods. Atkins and Varantola (1998) found that the success rates of consultation by four groups of subjects were 59%, 44%, 46% and 39% from higher to lower levels of English as L2 when they used dictionaries to answer five questions concerning L1-L2 translation of a short passage. In another study (Atkins & Varantola, 1997), it was reported that the success rates of the advanced, intermediate and beginner groups were 32%, 49% and 47% respectively, and the failure rates were 42%, 35% and 35% when doing self-selected L1-L2 or L2-L1 translation tasks. In that study, the informants’ level of L2 competence was self-evaluated, so were the success and failure of their consultation. So the rates reported were more about the dictionary user’s satisfaction with the lookup results. Due to such differences in research design, the present findings were not comparable to those from the above two projects.

5.2.6 Summary

Most importantly in Section 5.2, the statistic tests confirmed Hypothesis 2A about the correlations between translation competence on the one hand, and the success and failure rates on the other. That is to say, with higher group level or translation score, the success rate of lookup went up while the failure rate went down. Moreover, the novice group had a significantly lower success rate and higher failure rate as compared with the other two groups.

It was found that the novice group had a significantly larger number of changes than the advanced group while the difference between the neighboring levels was not significant. This suggested a gradual decrease in the general consultation-induced effect from lower to higher levels. Moreover, the correlation tests ascertained that such effect decreased with increasing translation competence.
The numbers of both positive- and negative-effect changes did not vary significantly among the groups. And they were found to have no significant correlation with the group level or translation score. In other words, neither the benefit nor the harm brought about by lexical lookup differed significantly among the groups and they did not correlate significantly with translation competence, either.

Last, the tests on zero-effect changes revealed that a significant gap existed between the top and bottom levels but not between the adjacent levels. This indicated a gradual decrease in the amount of futile lookup from the novice to the advanced level. In addition, correlation tests confirmed that the better translation competence was, the smaller the amount of fruitless consultation would be. When this type of changes was further divided into two subtypes, it was found that the number of replacements of one satisfactory rendering with another did not vary significantly between different levels. On the other hand, the number of failed consultation attempts to correct mistranslation differed remarkably among the three groups, and it decreased significantly from the novice to the advanced level. Furthermore, it was detected that informants with better translation competence made fewer unsuccessful lookup efforts to rectify the defects in translation.

5.3 Summary of Chapter 5

First of all, this Chapter answered Research Question (Q1) about the effect of lexical consultation on translation by examining Hypotheses A1 and B1. The assumption about the generally positive effect of consultation was confirmed, and so was the prediction about possible correlations between translation competence on the one hand, and success and failure rates of consultation on the other. Thus, both Hypotheses A1 and B1 were confirmed.

Second, by examining different types of changes made to TT1, a comprehensive description was given of the quantity and nature of the positive, negative and zero effects of lexical consultation on translation. Their internal composition and relative
weight were also explored in detail. The findings showed the exact components of a particular effect, and their role in the general consultation effect.

Third, a recurrent pattern was discovered from the analysis of the revised parts and revisions. It revealed three major features of the lexical problems that prompted lexical lookup and those that remained unsolved after consultation. Besides, through the examination of the positive-effect changes, a description was given of the characteristics of the solved lexical problems. Such findings elucidated what lexical difficulties were addressed, resolved or left unsolved in consultation effort, thus not only facilitating the understanding of consultation effect on translation but also providing useful information for later reference in this study.

Fourth, through statistical analysis, significant differences were found among the groups in the amount of the general effect of lexical consultation, zero-effect consultation and failed lookup attempt to correct mistranslation. Such findings helped describe the general trends in the above aspects across the three levels. Moreover, significant negative correlations were confirmed between translation competence and the three variables in question. All these analyses provided a clear picture of the between-group differences in the effect of lexical consultation.

To conclude, Chapter 5 gave a detailed description of the effect of lexical consultation by the whole sample and a quantitative account of the differences in such impact between the three levels. The next chapter will deal with the between-group differences through the analysis of addressed lexical problems and from the perspective of the lookup process.
Chapter 6

Between-group Differences in Lexical Consultation

This chapter aims to answer Research Question (Q2) by testing two corresponding hypotheses, which are repeated here:

(Q2) What are the characteristics of lexical consultation at different levels of translation competence?

Hypothesis 2A: Differences exist in the kind of lexical problems to be solved through lexical consultation at different levels.

Hypothesis 2B: Differences exist in the lookup process among the subject groups, especially in terms of determining problem word, internal search, and integrating information.

To explore the research question, the between-group differences in lexical consultation are approached from two perspectives. First, in Section 6.1, the differences are studied in regard to the types of lexical problems addressed through lexical consultation to test out the Hypothesis 2A. Then, in order to examine Hypothesis 2B, Section 6.2 focuses on the lookup process to discern the features of each group in the three key phases in consultation. Last, a summary is made of the present chapter in Section 6.3.

6.1 Lexical Problems Addressed

The lexical problems addressed were the lexical difficulties that prompted the participants to make lexical consultation when working on TT2, irrespective of whether they were eventually resolved or not. In this section, such data collected from each of the three levels are sorted out by using the classification method...
discussed in Section 4.4.3. They are reported and discussed in Sections 6.1.1, 6.1.2 and 6.1.3 under the titles meaning-, collocation- and language-related problems. The findings are examined with reference to the results of previous studies and their implications are explored in the light of the aims of this research. Last, Section 6.1.4 offers a summary of the between-group differences in the lexical problems addressed.

In this section, two methods were adopted to look into the between-group differences in such lexical problems. One was to compare the numbers of the three types of lexical problems among the groups and use statistical tests to see whether the difference was statistically significant. Moreover, possible correlations were also sought between the number of lexical problems on the one hand, and the translation score and group level on the other. The other way was to figure out the proportion of each type of problems in the total and contrast such percentages among the three groups. Taking a group as a whole, we could add up all its addressed problems and see how much different types of problems weighed in the total. It was also possible to look at each participant’s proportion of the three kinds of problems in his or her total addressed problems. By using statistical tests, such statistics were contrasted among the three groups, and their correlations with the group levels and translation scores were sought. As it turned out, missing values appeared in calculating the percentages for two participants, i.e., A13 and A29. Not addressing any lexical problem through consultation, both of them made only one change to an originally satisfactory part in TT1. The missing values were all set to zero in view of the fact that the participants dealt with none of the three types of lexical problems.

6.1.1 Meaning-related Problems

According to the categorization system discussed in Section 4.4.3, meaning-related problems referred to the lexical difficulties that contained words whose sense was wrong or inaccurate as well as those appearing in the form of lexical voids. They
included items found to be defective in propositional, expressive or evoked meaning and lexical voids that caused a loss of original meaning.

The data about the meaning-related problems addressed by three groups are illustrated in Figure 6.1 below, with three bar charts in it. The left bar chart shows the numbers of items defective in propositional, expressive and evoked meaning contributed by the three groups. The bar chart in the middle shows data about the lexical voids left in TT1 by the three groups. The right bar chart in the Figure combines the data shown in the left and middle bar charts, that is, the total number of meaning-related problems addressed by the three groups.

![Figure 6.1 Meaning-related problems addressed by three groups.](image)

The items defective in propositional meaning totaled 234, of which the novice, intermediate and advanced groups had 98, 78 and 58 respectively. Only three entries were found defective in expressive meaning, of which two were collected from the novice level and one from the advanced. The only unit found defective in evoked meaning was produced by an advanced learner. Since the numbers of the units defective in expressive and evoked meaning are too small to be shown in a bar chart
and they belong to meaning-related errors, they are combined with those items defective in propositional meaning in the left bar chart of Figure 6.1.

Although considerable gaps seemed to exist among the groups in the number of meaning-related problems, the results of Mann-Whitney U tests showed that no statistically significant differences were found between the novice and the intermediate group ($U = 333, p = .078$), or between the advanced and the intermediate group ($U = 376.5, p = .267$). Only the novice group had a significantly larger number of meaning-related problems than the advanced groups ($U = 259.5, p = .004$).

Spearman’s correlation tests showed that a significant weak, negative correlation existed between the number of meaning-related problems on the one hand, and the group level ($r_s = -.304, p = .004$) and translation mark ($r_s = -.319, p = .002$) on the other. That is to say, the higher the group level or translation score was, the fewer meaning-related problems were addressed through consultation.

Meaning-related problems tackled by all the 90 participants amounted to 303, or 73.5% of the total. The proportion of such problems in the total was 71.8%, 74.4% and 75.2% for the novice, intermediate and advanced groups respectively. The Man-Whitney U tests on each subject’s percentage of this kind of problems revealed that there was no statistically significant difference among the three groups (between the novice and the intermediate group: $U = 425, p = .708$; between the novice and the advanced group: $U = 445, p = .946$; between the advanced and the intermediate group: $U = 425, p = .706$). In addition, the correlation was found to be non-significant between the percentage of meaning-related problems in the total on the one hand, and the group level ($r_s = -.005, p = .964$) and translation scores ($r_s = -.057, p = .597$) on the other. Hence statistically, there was no interdependence between the tested pairs of variables.

Based on the above results, it can be said that a statistically significant difference existed in the number of addressed meaning-related problems between the novice
and the advanced levels. In other words, the participants from the advanced group dealt with much fewer difficulties of such type than those from the novice group. At the same time, the non-significant difference found between the adjacent groups suggested a progressive decrease in the number of meaning-related questions from the bottom to the top level. Furthermore, a weak negative correlation was confirmed between translation competence and the number of such problems. That is to say, the better the translation competence, the fewer meaning-related difficulties were tackled through consultation. However, the proportion of this type of problems in the total appeared somewhat similar across the three levels, with a small difference of about three percentage points. Such similarity was confirmed by the statistical tests, which found the between-group differences to be non-significant. In addition, the negative correlation was not statistically significant between the proportion of such problems and the translation score and group level, so we cannot say that the better the translation competence was, the lower percentage of the meaning-related problems was addressed.

The gradual decrease of meaning-related problems from the novice to the advanced level is not surprising since it is common knowledge that as the students’ overall translation competence develops, their second language skills, such as vocabulary, would improve. As a result, the need for meaning-related search in lexical consultation diminishes gradually. However, as the statistical results show, the share of meaning-related problems in the total lexical difficulties addressed by the three groups ranged from 71% to 76%. This indicated that such problems made up a similarly overwhelming proportion in lexical consultation across the three levels. Although the quantity of the addressed meaning-related difficulties decreased with the growing competence, their weight in the total problems remained considerable for the three groups. This suggests a constantly strong need for meaning-related search in lexical consultation during translation.

Previous studies provided no results that could be contrasted with the present findings. However, a decrease was found in the proportion of L2 equivalent searches
in the total lexical consultation during translation from the lower to the higher levels (Atkins & Varantola, 1997). The percentages of such lookups were 79%, 45% and 41% respectively for the participants with the beginner, intermediate and advanced L2 skills. The searches for L2 equivalents, presumably to fill lexical voids, could be generally regarded as lookups to solve meaning-related problems. But in that study, the three groups were of different sizes, the grouping was done according the subjects’ self-evaluation of their second language, and the participants worked on different translation tasks. Due to such differences in research setting, the results were not contrastable to the present findings.

6.1.2 Collocation-related Problems

According to the definition in Section 4.4.3, collocation-related problems refers to lexical errors that are characterized by a breach of combination conventions, or in this study, lexical items found defective in presupposed meaning. The data about such problems addressed by the three groups are summarized in Figure 6.2.

![Figure 6.2 Collocation-related problems addressed by three groups.](image)

There was only a very slight difference between the numbers of collocation-related problems of the three groups, though they were on a decrease from lower to higher levels. Such an impression was supported by the results of Mann-Whitney U tests.
According to the results, no statistically significant differences were found between the novice and the intermediate group \((U = 448, p = .974)\), the novice and the advanced group \((U = 429, p = .728)\), and the advanced and the intermediate group \((U = 430.5, p = .747)\).

In addition, Spearman’s correlation tests revealed that the number of collocation-related problems had no significant correlations with either the group level \((r_s = -.037, p = .728)\) or the translation mark \((r_s = .009, p = .932)\). So statistically, we cannot say that the number of such problems went down with the decline in group level or translation result.

Altogether 56 collocation-related difficulties were dealt with by three groups, accounting for 13.6% of the total lexical problems. The proportion of such problems in the total was 11.5%, 14.3% and 16.2% for the novice, intermediate and advanced groups respectively. According to the outcomes of the Man-Whitney U tests on the participants’ percentages of such problems, no statistically significant difference was found among the three groups (between the novice and the intermediate group: \(U = 397.5, p = .398\); between the novice and the advanced group: \(U = 408.5, p = .505\); between the advanced and the intermediate group: \(U = 445, p = .936\)). And there was no significant correlation between the percentage of meaning-related problems in the total on the one hand, and the group level \((r_s = .074, p = .486)\) and translation score \((r_s = .132, p = .215)\) on the other.

The above statistical results showed that there was not much difference in the number of collocation-related problems among the three groups, nor was there any correlation between translation competence and the number of such problems. Although there was a gap of almost five percentage points between the novice (11.5%) and advanced group (16.2%), the statistical tests on each participant’s data showed that the differences among the three groups were not statistically significant, neither were the correlations between the percentages and translation competence.

The non-significant between-group differences in the number and proportion of such
problems suggested a consistent need for collocation-related search across the three levels. The similar quantities and percentages might be a result of the combination of two factors. Usually, as the students’ translation expertise develops, their lexical knowledge will also increase, which may lead to a reduced need for collocation-related search in lexical consultation. So the participants from higher levels tend to have fewer lexical problems in combination. On the other hand, however, as their translation competence grows, their increased lexical knowledge also enables them to better recognize the need for collocation-related search. As a result, the informants from higher levels may be able to discern and address more collocation-related problems than those from lower levels. In fact, the above results revealed a slight increase in the percentage of such problems from the bottom to the top level (i.e., 11.5%, 14.3% and 16.2%). Therefore, the reduced consultation need and increased sensitivity to collocation problems might have canceled out each other at the higher group levels in this study and consequently narrowed the gaps among the three groups in the number and proportion of such problems. Of course, this speculation about the cause of such negligible differences needs confirming through further investigation. Nevertheless, they indicated a similarly noticeable want for collocation-related search from all the three groups.

A relevant result comes from Frankenberg-Garcia’s (2005) study of L1-L2 translation by sixteen fourth-year translation students. Of the total 146 lookups, 23 aimed to find a suitable collocate, making up 16% of the total, a percentage quite close to that of the advanced group (i.e., 16.2%) in this study.

6.1.3 Language-related Problems

As mentioned in Section 4.4.3, language-related problems were lexical errors that violated spelling, inflectional and syntactic rules. They included items defective in orthography, morphology and syntax. The data about such problems addressed by the three groups are illustrated in Figure 6.3. The first three bar charts in the Figure show the statistics of the items found defective in orthography, morphology and syntax.
respectively while in the last cluster, the three types of defects were taken collectively as language-related problems.

![Figure 6.3 Language-related problems addressed by three groups.](image)

As can be seen from Figure 6.3, the novice group (with 29) had almost twice as many language-related problems as the intermediate group (with 15). But the Mann-Whitney U tests showed that there was no significant difference between them ($U = 332.5, p = .059$). No significant difference was found between the adjacent intermediate and advanced groups ($U = 366, p = .133$), either. However, the difference between the novice and the advanced level was statistically significant ($U = 269.5, p = .001$).

Further Spearman’s correlation tests revealed that there was a significant weak, negative correlation between the number of language-related problems on the one hand, and the group level ($r_s = -.333, p = .001$) and translation mark ($r_s = -.340, p = .001$) on the other at the .05 level. This meant that the higher the group level or translation score was, the fewer language-related problem were addressed.

Of the total 412 lexical problems dealt with by all the 90 participants, language-related problems amounted to 53, making up 12.9% of the total. The percentage of such difficulties was 16.7%, 11.3% and 8.6% for the novice,
intermediate and advanced learners respectively. The Man-Whitney U tests on each participant’s statistics showed that no statistically significant difference existed between the novice and the intermediate level ($U = 362, p = .167$) or between the advanced and the intermediate level ($U = 386.5, p = .27$). But the difference between the top and the bottom level was significant ($U = 308, p = .020$). Negative correlations were also found to be significant between the percentage of language-related problems in the total on the one hand, and the group level ($r_s = -.252, p = .016$) and translation score ($r_s = -.255, p = .015$) on the other. This meant that the better the translation competence was, the lower the percentage of language-related problems was.

The statistical results showed that significant difference in the number and percentage of language-related problems existed between the top and the bottom level but not between adjacent ones. This suggested a less remarkable gap between the neighboring groups and a gradual decrease in the quantity and proportion of such problems from the bottom to the top level. The correlation tests confirmed a significant negative interdependence between the two aforementioned parameters on the one hand, and translation competence on the other. In other words, the stronger the translation competence was, the smaller the number and percentage of language-related problems were. Such findings tallied with the general impression that a more skillful translator has better command of the languages. In this study, the participants were students majoring in translation, with English as their second language. As their translation competence grew, so did their command of English—hence the decline in quantity and proportion of language-related problems.

Almost no contrastable findings could be found in the previous studies except one remotely related result from Atkins and Varantola (1997), which showed that lexical lookups for seeking L2 grammatical information made up 6%, 6% and 3% of the total consultation by the self-evaluated beginner, intermediate and advanced groups respectively when doing self-selected L1-L2 or L2-L1 translation tasks. Decline was only found between the bottom and the other two levels. However, due to the large
differences in the experimental settings mentioned in Section 6.1.1, the results are not comparable to the present findings.

6.1.4 Summary

The results reported in the above three sub-sections largely confirmed Hypothesis 2A about the between-group disparities in lexical problems addressed in consultation; meanwhile, some non-significant differences were found as well.

Table 6.1 below provides a summary of the findings. In terms of quantity, the differences were statistically significant between the novice and the advanced group in the number of meaning- and language-related problems but the differences between neighboring levels were not. As for the collocation-related problems, no meaningful difference was found among the three groups. In terms of proportion, significant differences were found between the top and the bottom level in the percentage of language-related problems while no significant difference existed between the adjacent levels. With regard to the proportion of meaning- and collocation-related problems, no significant difference was found between any groups. However, significant correlations were found between translation competence on the one hand, and the number of meaning- and language-related problems, and the percentage of language-related problems on the other.

Table 6.1
Between-group differences in three types of addressed problems.

<table>
<thead>
<tr>
<th>Problem Type</th>
<th>Quantity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between-group</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>Correlation with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>trans. competence</td>
</tr>
<tr>
<td>Meaning-related</td>
<td>Novice &amp; Advanced</td>
<td>Yes</td>
</tr>
<tr>
<td>Collocation-related</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Language-related</td>
<td>Novice &amp; Advanced</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Based on the discussion on these findings in the previous subsections, the following conclusions could be drawn:
(1) There was a gradual decrease in the number of meaning-related problems from the bottom to the top level, such that the better the translation competence was, the smaller the number. However, the three groups had a similarly large proportion of such problems in the total.

(2) All the groups addressed a similar quantity of collocation-related problems and the percentages of such problems did not vary much across the three levels, which revealed a consistently notable need for collocation-related consultation.

(3) There was a gradual decrease in the number and proportion of language-related problems from the novice to the advanced group, and the better the translation competence was, the smaller these two parameters were.

In short, the findings answered the question about the between-group differences in the quantity and percentage of different kinds of lexical difficulties addressed through lexical consultation, telling us how the examined parameters varied across the three levels and how they correlated with translation competence. The conclusions drawn on the basis of the results depicted the characteristics of lexical consultation at different competence levels in terms of the lexical problems addressed as well as the development of these characteristics from the novice to the advanced level.

6.2 Consultation Process

The data collected from the observation of the consultation process of fifteen participants representing three competence groups are analyzed in this section to answer Hypothesis 2B, which is repeated here,

Hypothesis 2B: Differences exist in the lookup process among the subject groups, especially in terms of determining problem word, internal search, and integrating information.

To examine this hypothesis, a quantitative study is first done in Section 6.2.1 of the three major lookup stages, namely, determining problem word, internal search and
integrating information. They are examined one by one as relatively independent steps. While the emphasis is put on the between-group differences, the fifteen informants are also studied as a whole sample to discern its general features. Then in Section 6.2.2, the consultation acts are described as an integrated process in a mostly qualitative way. Efforts are made to characterize the typical lookup behaviors in relation to the context in which they occurred instead of taking them as detached procedures. The consultation features of each group are depicted in terms of lexical search, that is, a consultation effort consisting of one or more lookups to solve one lexical problem (see Section 4.1.1). In this way, the consultation moves within a lexical search can be pieced up to help present a full picture of how a lexical problem was addressed. Last, a summary is made in Section 6.2.3.

As mentioned in Sections 4.2.1 and 4.3.2, the fifteen observed informants, unlike those in the experiment, were allowed to make consultation from the very beginning of the translation task, so they could function as a control group to check the findings of the experiment. For the purpose of crosschecking, the results of the observation of the lookup process are contrasted to those obtained from the earlier product-oriented study on the effect of consultation. The already-found patterns would be more trustworthy if relevant support could be drawn from the analysis of consultation process.

It must be noted that the small size of the observed sample demanded that any definitive conclusion be drawn with extreme caution and the researcher refrain from generalizing the description of the consultation acts. Due to the limited availability of informants, it was impossible to recruit another thirty students to represent each of the three levels so as to make generalizable claims about between-group differences (see Section 4.3.1). So in the following discussions, exploratory conclusions are arrived at with necessary qualifications and no generalization is sought.

Before the actual analysis, it is necessary to define some key terms to be used in the following subsections. First, a problem word is a lexical unit that is looked up in a work of reference; in this study it is either a Chinese item or an English one, which
can be a single word or character, or a phrase. Second, according to the definition given by Atkins and Varantola (1997, p. 5), the term *lookup* refers to an act of looking up of one entry, once, in one reference source. Since the looked-up entry is actually a problem word entry, so the number of lookups is the same as that of the problem word entries. Third, the term *lexical problem* means the part of the source language text that prompts a consultation act; so in this study of translation from Chinese to English, a lexical problem is always a Chinese item. If it is looked up, it is also a problem word. A lexical problem may also trigger a lookup of target language item, such as *slipper* for 拖鞋. In this case, *slipper* is the problem word while 拖鞋 is the lexical problem. Fourth, a *lexical search* is a consultation effort to solve one lexical problem, so the number of searches is the same as that of lexical problems. A search may consist of a series of lookups or just a single lookup (see Section 4.1.1).

### 6.2.1 Three Major Consultation Steps

The following discussion focuses on the three major steps in consultation. Section 6.2.1.1 examines the between-group differences in determining problem words. Section 6.2.1.2 deals with internal search to see if disparities existed among the three groups in the types of information sought from reference resources. Section 6.2.1.3 looks into incorporation of extracted information to find out possible between-group differences in the number and percentage of successful and unsuccessful cases of information integration.

#### 6.2.1.1 Determining Problem Word

In this section, between-group differences are detected in the quantity of problem word entries, English and Chinese problem word entries, and inappropriate problem words. Figure 6.4 shows the statistics of problem word entries, English and Chinese problem word entries looked by the three groups, which will be referred to in the following discussion.
Problem Word Entries

A total of 592 problem word entries, or lookups, were recorded from the observation. For individual informants, the highest number was 68, and the lowest, only nine. The two highest numbers, i.e., 68 and 62, were found in the novice group; and the two lowest, i.e., 9 and 23, in the advanced group. This seemed to indicate that the higher level a group, the fewer lookups they tended to conduct.

Such an impression was confirmed by a count of lookups by each group, which showed that the novice, intermediate and advanced groups had 227, 203 and 162 respectively (see the first cluster of bars on the left of Figure 6.4). The quantity of lookups was on the decrease from the novice to the advanced group, which was in line with the common impression that students with better translation competence would have less lexical consultation. The gradual decrease also faintly echoed with the decline in the number of changes made through lexical consultation from the novice to the advanced group (see Section 5.2.1) even though the number of lookups did not directly correspond with that of the changes made after consulting.

From the left bar chart in Figure 6.4, we can see that the difference between the novice and the advanced group was as great as 65. On average, a novice student had 13 more lookups than an advanced student. Such a wide gap meant that the advanced students had much less lexical consultation than the novices. The reduced number of
lookups by advanced learners was also found in some previous studies (Tirkkonen-Condit, 1987; Jääskeläinen, 1989).

*English and Chinese Items*

When the problem word entries were divided into English and Chinese ones, it was found that of the total 592 items, 337 were English and 255 were Chinese. The middle and right bar charts in Figure 6.4 show the numbers of English and Chinese items looked up by the three groups. It could be seen that the three groups had similar numbers of English items, with a gap of less than ten between each other. But bigger differences existed in the lookups of Chinese items, especially between the advanced and the other two groups. Compared with the advanced group, the novice group had 53 more lookups and the intermediate had 33 more. Considering the similarity in the number of English items, it could be said that the between-group difference in the total problem word entries was mainly caused by the difference in the quantity of Chinese items.

Since almost all the lookups of Chinese items in this study were conducted in Chinese-English dictionaries, the purpose of such consultation was mostly to find an English equivalent to fill in a lexical void in the target language. So the fewer lookups of Chinese items at higher levels might suggest that the informants had fewer lexical voids in English, which also agrees with the general impression that better translators have a larger L2 vocabulary.

*Inappropriate Problem Words*

As an inappropriate choice of problem words may result in the incorporation of a wrong item into the target text (see Section 3.2.3), a probe was made into the inappropriateness of the problem word looked up by the three groups. It turned out that the novice, intermediate and advanced groups consulted about 19, 19 and 12 items of this type respectively (excluding those repeatedly looked up). While the novice and the intermediate group had the same number, the advanced group seemed to have fewer cases of inappropriate selection than the other two groups. Such
problem words could be divided into two major types. The first included those whose meaning did not agree with the original concept they were intended to express. For instance, quite a few informants looked up the phrases basic education or fundamental education in order to translate 基础教育, which meant elementary and secondary education in the source text. The other type included those items that appeared to be appropriate in terms of semantic meaning but actually turned out to be misleading or confusing within the context of target text in making. For example, caretaker was looked up to fill in a lexical void where nanny or babysitter was needed. In most cases, selection of an inappropriate problem word could be attributed to either the misjudgment of the original message or lexical uncertainty about a target-language item.

Fewer choices of inappropriate problem words might indicate better understanding of the original text or larger target-language vocabulary. However, they did not necessarily lead to a wrong item incorporated into the target text. In many cases, such a problem word was abandoned after being looked up and found unsuitable. A typical example was Informant N31’s consultation attempt at the term 基础教育 (to be discussed in Section 7.1.2 in detail). She looked up basic education, fundamental education and elementary education, each for more than twice in different reference sources. In the end, she rejected all of them and resorted to paraphrasing; the Chinese term was rendered as the education they have received so far, which, though a bit wordy, was deemed to be acceptable. So an inappropriate problem word was a wrong start in the effort to solve a lexical problem, which did not necessarily result in wrong translation.

6.2.1.2 Internal Search

The internal search was studied to see what information about the looked-up item was sought from the reference sources. There were six types of lexical information: (1) equivalent, (2) definition, (3) spelling, (4) usage (syntactic features), (5) inflection, and (6) collocation. This method of categorization was borrowed and
adapted from lexicography studies on dictionary users’ consultation purposes (e.g., Atkins & Varantola, 1997; Varantola, 1998; Mackintosh, 1998; Laufer & Levitzy-Aviad, 2006; White et al., 2008). In most of the previous studies, such data was elicited directly from the informants’ self-report. In reality, however, an actual internal search could have multiple purposes. For instance, a lookup for an equivalent might also include a convenient check for usage through the example phrases, or when searching for definition, some information about inflection or collocation was obtained as well from the entry. In such cases, the first and main purpose would count while the “sideline benefit,” as it were, had to be neglected in this study. As discussed in Section 4.3.2, a multi-method approach that combined observation, screen recording and retrospective interview was adopted to help ascertain the nature of each internal search.

Of the total 592 lookups by the fifteen informants, 564 led to internal search while 28 aborted because the looked-up items were not found from the reference sources. The novice, intermediate and advanced groups had six, twelve and ten failed attempts of this kind respectively. The internal searches of each group were classified in Table 6.2, and the total number of searches for each information type by the three groups and their percentage were also listed in the last two columns on the right.

**Table 6.2**

Types of Information Sought in Consultation.

<table>
<thead>
<tr>
<th>Searched Information</th>
<th>Novice Group</th>
<th>Intermediate Group</th>
<th>Advanced Group</th>
<th>Total of Three Groups</th>
<th>Percentage in Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent</td>
<td>111</td>
<td>84</td>
<td>41</td>
<td>236</td>
<td>41.8%</td>
</tr>
<tr>
<td>Definition</td>
<td>64</td>
<td>69</td>
<td>64</td>
<td>197</td>
<td>34.9%</td>
</tr>
<tr>
<td>Usage</td>
<td>21</td>
<td>9</td>
<td>4</td>
<td>34</td>
<td>6%</td>
</tr>
<tr>
<td>Spelling</td>
<td>9</td>
<td>7</td>
<td>8</td>
<td>24</td>
<td>4.3%</td>
</tr>
<tr>
<td>Inflection</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>1.2%</td>
</tr>
<tr>
<td>Collocation</td>
<td>13</td>
<td>20</td>
<td>33</td>
<td>66</td>
<td>11.7%</td>
</tr>
<tr>
<td>Total</td>
<td>221</td>
<td>191</td>
<td>152</td>
<td>564</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6.2 showed that between-group differences lay in the searches for equivalents, usage and collocation while those for definition, spelling and inflection information
were similar across the three levels. A gradual decrease could be seen in the searches for equivalents and usage from the bottom to the top level. This might indicate a reduced need for such information with increasing translation competence. Furthermore, in contrast with the other two groups, the advanced group had much fewer hunts for equivalents while the novice had considerably more usage checks. As for the collocation searches, there was gradual increase from the novice to the advanced level. It might suggest a growing awareness about importance of collocation. In addition, the advanced group conducted much more searches for collocation information than the other two groups.

When the fifteen informants were taken as a whole sample, it was found that the majority of the searches aimed at translation equivalents, in which the problem word was always a Chinese item. This meant that most of the searches were conducted to solve the problem of lexical void in translation. The second most sought information was definition; such searches accounted for about one third of the total, nearly all of which were lookups of English items, conducted after the L2 equivalent was found, either from the translator’s mental lexicon or from the previous lookup. Such consultation could be seen as an attempt to confirm the already-found equivalent. Besides, about one tenth of the internal searches were made to find collocation guidance; this noteworthy proportion showed that such information was also an important type sought through consultation. Last, searches for usage and spelling each contributed a very minor part to the total, and inflection as a consultation purpose was almost negligible.

**Table 6.3**

Three general types of internal searches.

<table>
<thead>
<tr>
<th>Type of Search</th>
<th>Novice Group</th>
<th>Intermediate Group</th>
<th>Advanced Group</th>
<th>Total of 3 Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning-related</td>
<td>175 (79.2%)</td>
<td>153 (80.1%)</td>
<td>105 (69.1%)</td>
<td>433 (76.8%)</td>
</tr>
<tr>
<td>Language-related</td>
<td>33 (14.9%)</td>
<td>18 (9.4%)</td>
<td>14 (9.2%)</td>
<td>65 (11.5%)</td>
</tr>
<tr>
<td>Collocation-related</td>
<td>13 (5.9%)</td>
<td>20 (10.5%)</td>
<td>33 (21.7%)</td>
<td>66 (11.7%)</td>
</tr>
</tbody>
</table>
By using the classification system discussed in Section 4.4.3, the six kinds of internal searches were regrouped into three more general types (see Table 6.3). Since meaning is usually the primary concern when seeking a target-language counterpart and the searches for equivalents aim to fill in lexical voids that would cause loss of original message, such searches were grouped into the meaning-related ones together with those for definitions. Language-related searches included those to check spelling, inflection and usage; and the last category was the collocation-related searches. Beside the number of searches, its percentage in the total of the group was shown in brackets. Moreover, the number of each type of searches by the three groups as a whole sample was listed in the last column on the right of the table, together with its proportion in the total.

The following between-group differences could be seen from the above table. First, there was a gradual decrease in the quantity of meaning-related searches from the novice to the advanced level. A larger gap existed between the advanced and the other two groups, showing the former had considerably fewer meaning-related searches as well as a smaller percentage. Second, the number of language-related searches was also on the decrease from the bottom to the top level. The novice group had a remarkably larger number and a noticeably higher percentage of such searches than the other two groups, which shared similar numbers and almost identical percentages. Third, both the quantity and percentage of collocation-related searches was on the increase from the bottom to the top level, and the advanced group seemed to have much more collocation-related searches.

The decline in the number and percentage of meaning- and language-related searches seemed to echo with the gradual decrease in the quantity of meaning- and language-related problems addressed by the 90 informants of the experiment (see Sections 6.1.1, 6.1.2 and 6.1.4). However, the increase in the number of collocation-related searches disagreed with the rather stable quantities of collocation-related problems addressed by the three larger groups in the experiment (see Sections 6.1.1 and 6.1.4). Here, it should be remembered that the earlier probe
into the effect of lexical consultation on translation was a product-oriented study, in which the data was collected from the two translation versions. The searches not reflected in the translated texts were left out when the focus was put on the tangible effect of consultation. This might partly explain why the two sets of findings were not completely compatible, and it was also an important reason for conducting the present study of consultation process.

When the fifteen observed informants were seen as a whole, it could be seen that the meaning-related internal searches made up an overwhelming majority in the total while the language-related and collocation-related types each contributed a noteworthy part. Such makeup was quite similar to that of the problems addressed by the 90 informants in the experiment, whose percentages of meaning-, language- and collocation-related problems were 73.5%, 12.9 % and 13.6% respectively (see Sections 6.1.2, 6.1.1 and 6.1.3). The similar pattern found from the consultation process can be seen as an indirect support to the earlier findings about types of addressed lexical problems.

6.2.1.3 Integrating Information

There are two ways to look at the integration of the extracted information. One is to examine it in terms of lookup, and the other, in terms of lexical search. The first method is to see how the information found from each lookup is used in addressing a lexical problem. But in reality, it often entails more than one lookup to deal with a vocabulary difficulty. In this study, it was found that out of the total 260 searches, 137, or 52.7%, consisted of more than one lookup, with the longest made up of 15 lookups involving 10 different problem words. In such searches, the information integration into the translated text was held until the last lookup is completed. This did not mean that only the last lookup counted. Actually those before it all contributed in one way or another to the final decision made in forming the target text. So in this study, information integration was studied in terms of lexical search. That is to say, the lookups within a search were seen as a series of consultation
moves to solve a lexical problem, and information integration was examined as a result of a lexical search that was made up of one or more lookups.

As mentioned in Section 6.2.1, a total of 260 lexical searches were conducted by the three groups of observed informants. Accordingly, there occurred the same number of instances of information integration. In Table 6.4, such cases were divided into successful and unsuccessful ones according to the result of the integration.

**Table 6.4**
Successful and unsuccessful integration of information.

<table>
<thead>
<tr>
<th>Information Integration</th>
<th>Novice Group</th>
<th>Intermediate Group</th>
<th>Advanced Group</th>
<th>Total of 3 Groups</th>
<th>Percentage in Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>71 (76.3%)</td>
<td>95 (90.5%)</td>
<td>57 (91.9%)</td>
<td>223</td>
<td>85.8%</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>22 (23.7%)</td>
<td>10 (9.5%)</td>
<td>5 (8.1%)</td>
<td>37</td>
<td>14.2%</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>105</td>
<td>62</td>
<td>564</td>
<td>100%</td>
</tr>
</tbody>
</table>

A between-group comparison showed that the intermediate group had the most successful cases of integration, leading the novice group by over 20 and the advanced by nearly 40. This might have to do with the fact that the intermediate group had the largest number of total lexical searches. In regard to the unsuccessful integration, there was a gradual decrease from the novice to advance level, with the former having a much larger number than the latter. A look at the percentages revealed that the intermediate and the advanced groups shared similar proportions of successful and unsuccessful integration. In contrast, the novice group had a much lower percentage of successful cases and a much higher percentage of unsuccessful ones. This might indicate that the intermediate and the advanced groups were a lot more efficient in lexical consultation. This result was in line with the experiment finding that the novice group had a significantly lower success rate and higher failure rate of consultation as compared with the other two groups (see Section 5.2.5).

When the three groups were taken as a whole, it was found that cases of successful integration accounted for 85.8% of the total while those unsuccessful cases made up for only 14.2%. Such makeup was similar to the success rate (i.e., 80.6%) and failure rate (i.e., 19.4%) of consultation in the experiment (see Section 5.2.5.). The present
findings obtained from consultation process can be seen as a support to the previously-found pattern.

6.2.2 Consultation as Integrated Process

In the following discussion, the informants’ consultation acts are examined as an integrated problem-solving process. The between-group differences are seen from the perspective of lexical search and described in relation to the context of the lookup. In Section 6.2.2.1, analyses are carried out of the consultation needs reflected in the most addressed problems, lexical searches, searches started with English and Chinese items and lexical problems. Section 6.2.2.2 offers a case study on how the most addressed lexical problem was treated so as to find out between-group differences in consultation behavior. Section 6.2.2.3 gives an account of some naïve lexical assumptions that affected the lookup process.

6.2.2.1 Consultation Need

Before making between-group comparisons, a survey was made of the lexical problems addressed by the fifteen informants as a whole sample. Table 6.5 shows the top ten most addressed problems found in the observation, in which the frequency of occurrence shows how many informants dealt with the problem.

Table 6.5
Top ten most addressed lexical problems.

<table>
<thead>
<tr>
<th>Addressed Problems</th>
<th>Frequency of Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(11) 喂哺方式 (spoon-fed way)</td>
<td>14</td>
</tr>
<tr>
<td>(12) 高瞻远瞩 (looking far ahead and aiming high)</td>
<td>13</td>
</tr>
<tr>
<td>(13) 自治自律 (self-control and self-discipline)</td>
<td>13</td>
</tr>
<tr>
<td>(14) 恶性循环 (vicious circle)</td>
<td>12</td>
</tr>
<tr>
<td>(15) 循规蹈矩 (accord with the custom and law)</td>
<td>12</td>
</tr>
<tr>
<td>(16) 保姆 (nanny)</td>
<td>12</td>
</tr>
<tr>
<td>(17) 言听计从 (readily listen to somebody’s advice and accept it)</td>
<td>11</td>
</tr>
<tr>
<td>(18) 馒头稀饭 (steamed buns and congee/trivial matters)</td>
<td>9</td>
</tr>
<tr>
<td>(19) 拖鞋 (slippers)</td>
<td>9</td>
</tr>
<tr>
<td>(20) 指导 (guide/lead)</td>
<td>9</td>
</tr>
</tbody>
</table>

The Table covers almost all the anticipated vocabulary difficulties discussed in
Section 4.3.3, showing that the subjects’ consultation need turned out to tally with the researcher’s expectation. Moreover, the list was roughly the same as Table 5.1 of Ten Most Modified Units in Section 5.1.1. As many as eight units listed here also appeared in that table, with the other two ranking among the top twenty most modified units, i.e., 保姆 (nanny) and 拖鞋 (slippers). The two items in Table 5.1 that were not found in the present list, 基础教育 (primary and secondary education) and 严父慈母 (stern father and loving mother), actually ranked eleventh and twelfth among the most addressed. Such similarities reveal that the observed sample group had almost the same consultation need as the 90 informants tested in the experiment.

Then, a count was done of the lexical searches. Figure 6.5 below shows the data of the searches, searches started with an English item and those started with a Chinese item. As a search is a consultation attempt to solve one lexical problem, the number of searches is the same as that of the addressed problems.

![Figure 6.5 Lexical searches.](image)

The left bar chart in the Figure shows the number of searches made by the three groups. The intermediate group had a dozen more searches than the novice group while the advanced group seemed to have considerably smaller number in contrast with the other two groups, with a gap of over 30. This much reduced consultation.
need seems understandable when considering that students with better translation competence tend to have fewer lexical problems. But such a common impression was rejected by the slightly higher number of searches by the intermediate group as compared with the novice group. One speculation was that the intermediate learners might be more aware of the lexical problems and the assistance obtainable from consultation whereas the novice students might have neglected some of the problems that could have been solved through consultation.

The middle and right bar charts in Figure 6.5 show the numbers of the searches started with an English item and those started with a Chinese one. It can be seen that the novice and advanced groups had the same number of searches started with an English item while the intermediate group had a slightly higher number. However, as for the searches started with a Chinese item, a much wider gap (of over 30) was found between the advanced group and the other two groups. Another interesting fact was that for the novice and the intermediate group, the number of Chinese-started searches was almost twice as much as the English-started ones whereas the advanced group had fewer Chinese-started searches than English-started ones.

As almost all the Chinese items were looked up in some Chinese-English reference sources to find an English equivalent, fewer searches started with a Chinese item might suggest a reduced need for searching a target-language counterpart unknown to the translator. It could be largely seen as a sign of having fewer lexical voids in producing the translated text because of better translation proficiency, especially a larger vocabulary. The advanced group’s much smaller number of such searches might indicate that it had less consultation need to fill in lexical voids in English. On the other hand, a search started with an English item only occurred when the translator had already retrieved a tentative equivalent from his mental lexicon and the consultation purpose would be mostly to clear some uncertainty about the already-known item. As the intermediate group had slightly more searches of this kind than the other groups, it could be said that the three groups had a similar need of clearing uncertainty about English items. These findings were in line with the
conclusions drawn from the analysis of lookups of English and Chinese problem words (see Section 6.2.1.1).

Another between-group difference was found in the need for fine-tuning the wording. Informants of the advanced group were observed to seek information about the nuances or uses of synonymous items. For example, Informant A33 compared the definitions of two pairs of synonyms (i.e., insufficient and inadequate; resilient and adaptive) before selecting the more appropriate word; Informant A34 entered university presidents and college presidents into an internet search engine to find out their frequency of use from the search results; and Informant A31 replaced take...as with the more accurate phrase treat...as (对待) after two lookups. However, such efforts made for lexical refinement were rarely found in the novice and intermediate groups. The informants from lower levels were also seen to compare pairs of lexical items by looking them up, but in most cases they were black and white, or neither of them was appropriate.

6.2.2.2 Consultation Behavior

In this part, a case study is conducted on the lookup of the phrase 喂哺式 (spoon-fed way). It was chosen as the object of study for three reasons. First, as the number one on the list of top ten most addressed problems, the term was dealt with by almost all the fifteen informants except one (A35, who mistranslated the phrase). Such widespread occurrence made it possible to see the consultation acts by all the three groups, thus facilitating the intended between-group contrast. Second, the phrase was a hard nut to crack for most of the informants, which could be seen from the fact that most of the lookup attempts failed to solve the lexical problem. Studying the translation of such a difficult phrase would enable us to see the pitfalls in the consultation process. Third, of the fourteen searches, five led to satisfactory translated text while the other nine produced undesirable results, which displayed various consultation approaches and strategies. The diversified lookup process also
provided useful data for further discussion on the acts conducive to successful and unsuccessful consultation in the next chapter.

A look at the fourteen searches shows that twelve of them started with a Chinese item, indicating that most of the informants were probably unable to find an English equivalent for it from their mental lexicon. This assumption was confirmed by the retrospective interviews. In the other two searches initiated with an English item, the problem words were inappropriately chosen, another proof that the original phrase posed a tough challenge for the subjects. In terms of internal search, most of the informants, after obtaining a target-language counterpart, also went on to check its definition, which was a sign of uncertainty about the newly-found item. Last, only five searches resulted in successful integration of extracted information.

A between-group comparison reveals that all the five searches of the novice group led to undesirable translation while two out of the five searches by the intermediate group and three out of the four searches by the advanced brought about satisfactory results. This suggested that the advanced and the intermediate group performed better than the novice in dealing with the phrase. A close examination of the observation records shows the following between-group differences in consultation behaviors.

The most obvious difference was found in the length of lexical search. Consisting only two lookups on average, the searches conducted by the informants of the novice group were much shorter than those of the other two groups, made up of six lookups on average. The five searches by the novice group seemed to have stopped prematurely after scratching the surface. For instance, after finding the word foster by looking up 喂哺, a synonym of 喂哺 (spoon-feed), in Chinese-English dictionaries, Informants N32 and N35 wrote down fostering tutorship and “fostering” education respectively after a brief check of the definition of the newly-found word. Similarly, Informants N31 also had only one lookup of feed before jotting down have been “fed” with instruction. They seemed to be satisfied with the equivalent they found. In contrast, quite a few informants from the intermediate and the advanced
group went on to check whether the newly-extracted item was appropriate if used in the translated text. Informants A31 and A33 conducted at least five lookups of the newfound words (i.e., cramming and nursing); and Informants I31 and A32 examined the uses of the newly-coined phrases feeding type of education and force feeding education respectively in the online search results before abandoning them. Obviously, such searches were more assiduous than the brief efforts made by the novice informants. Although they might not necessarily lead to appropriate renderings directly, they were beneficial especially when the problem word was not an appropriate item to be incorporated (such as feeding and fostering), and conducive to additional lookups that might bring about better results.

The observation of the internal search and integration of information, together with the retrospective interviews, shed more light on the between-group differences. First, in terms of internal search, the novice group only focused on the definition of the newly-found items, whereas in the other two groups there were searches for the uses of those items by checking example phrases or sentences. When explaining the reason for lookup, the novice translators showed a concern about the “meaning” equivalence between the original phase and the newly-coined one in target language (i.e., 喂哺 and feeding or fostering). So it was the equivalence in literal meaning that was sought by the novice learners. However, when asked about their consultation purpose, several advanced and intermediate students referred to their uncertainty as to whether native English speakers combined the extracted items the way they were going to use them (e.g., feeding education). So they were looking for the collocational information about the extracted item. Second, it was found that when integrating extracted information, the informants from the novice group focused on smaller units than those from the other two groups. Quite a few participants at the advanced and the intermediate levels took into consideration the original context when they decided whether to integrate the retrieved lexical item into the translated text. Informants I31, I32, I33, A33 and A34 rejected lexical items such as cram and force feed after consultation, believing that in the original context
the term 喂哺式的辅导 (spoon-fed education) should mean overprotective way of education rather than cramming education or coercive instilling. In contrast, the informants at the novice level seemed to have a narrower perspective. They confined their attention to the lexical problem and the problem word proper without considering the context in the original and translated texts. When interviewed, Informants N31, N32 and N35 claimed that the meaning of the extracted words (e.g., feed or foster) corresponded to that of the problem word 喂哺 in the original text, and two of them felt that putting the word between quotation marks could well indicate its metaphorical use. This might indicate that they were trying to establish word-for-word equivalence instead of synthesizing the target text in larger units.

Previous studies provided findings similar to the above observations. The professional translators were also found to make more lookups per search than the language students (Gerlof, 1988). Jääskeläinen (1989, 1990) reported that compared with those from the first year, the fifth-year translation students had fewer lexical problems but more lookups of one item from different sources and they showed greater research depth in lexical consultation. Moreover, Fraser (1999) noticed that “the better translators used the dictionary translation as a starting point in the search for better equivalent” while “less imaginative ones were unable to move beyond the words on the page” (p. 28).

### 6.2.2.3 Naïve Lexical Assumption

Naïve lexical assumption refers to the L2 learners’ belief that “for every word in L1 there is a one-to-one lexical match in L2” (Bland, Noblitt, Armington & Gay, 1990, p. 440). In this study, the concept was broadened to include other unrealistic hypotheses about lexical equivalence, i.e., presumptions that there must exist a L2 lexical item that meets certain requirements in form or meaning, and that a L2 equivalent extracted from reference sources can function as its L1 counterpart in every way as far as they have the same meaning.

First, several searches were found in the novice and the intermediate group to seek
imagined items that met some formal or meaning requirement. In order to find an equivalent for 学术 (academic studies), Informant N33 conducted seven lookups in four different reference sources. The problem words included 学术, academia, learning, scholarism and academic. When explaining her consultation purpose, she reported that she was looking for a single English word for 学术, believing that there should be such a word like education for 教育 that was used in a parallel structure beside 学术 in the source text. Another example was from Informant I35, who, in an effort to translate 指导……方向 (set course for...), coined a couple of noun phrases that she thought might exist in English to refer to the agent of the action. She tried several blind lookups of problem words such as direction setter, direction guider and guider, but found no satisfactory results. Here, both the two informants were seeking imagined and unrealistic lexical equivalence. The assumption behind such searches was the hypothesis about one-to-one lexical correspondence between the two languages, which was also described as “token matching” (Bland, et al., 1990).

Second, some informants from the novice group took it for granted that an extracted L2 equivalent had the same function as its L1 counterpart regardless of the context. The underlying assumption was that interlanguage equivalents sharing literal meaning had the same pragmatic meaning and thus could be used in the same way. It could also been seen as a variant of the one-to-one lexical assumption as it postulated an all-round lexical correspondence between a L1 item and its L2 counterpart. For instance, in an effort to translate 保姆 (babysitter or nanny), Informant N31 used the word caretaker in the essay title President the Caretaker after lookups of the word and its cognate caretaking. As the retrospective interview showed, she believed that she had done her job by making sure that the word referred to a person who looked after other people. But it seemed that she did not quite notice the difference between caretaker and 保姆 when used in a metaphorical sense. The former is usually associated with a person who holds power temporarily, especially when used with some job title whereas the latter usually refers to someone who provides
excessive care or protection. Dealing with the same lexical problem, however, Informant A33 chose the word babysitter instead of childminder after looking them up and finding no evidence that the latter could express the intended figurative meaning. The retrospective interview with A33 showed that proper consideration was given to the pragmatic meaning which the looked-up items took on in the context as well as to their semantic meaning. The neglect of context was also found in Informants N35’s lookup of the phrase depending on circumstances, who directly incorporated into his translated text this newfound translation equivalent for 看情况 (judge the situation). She failed to see that in the context of source text, the item in question was used as a verb phrase to mean make judgment about the situation whereas the extracted equivalent was a translation of 看情况 as was used as an adverbial phrase meaning in a manner corresponding to the actual situation. In contrast, Informant A4 found the same translation equivalent but soon discarded it as inappropriate for the context. Such between-group difference in the attention paid to the context was also reflected in the consultation about feeding and fostering discussed in the previous section.

6.2.3 Summary

In Section 6.2, Hypothesis 2B about the differences in the lookup process among the subject groups was confirmed through a quantitative study of the three major steps in consultation. In terms of determining problem word and internal search, distinctions were found between the advance and the other two groups. The advanced learners consulted about a smaller quantity of problem words entries, Chinese items, and inappropriately-chosen problem words. They had fewer searches for meaning- and language-related lexical information but more searches for collocation-related information. In regard to information integration, the intermediate group had more successful cases than the other two groups; and the novice group had considerably more unsuccessful instances, with a much lower success rate and a much higher failure rate as compared to those of the other two groups.
On the other hand, Hypothesis 2B was also supported by looking into lexical consultation as an integrated process in a mostly qualitative way. Differences were detected in consultation need between the advanced and the other two groups. The advanced students had a reduced need to make consultation and to fill in lexical voids in the target language, and they also consulted to refine their wording, which was seldom seen in the other two groups. Through a case study, some differences in consultation behaviors were discovered. Compared with the other two groups, the advanced students showed more perseverance in lexical search, went beyond definition search to obtain other information about the looked-up item, and focused on larger units when incorporating the extracted information into the translated text. In addition, the novice group was found to have more naïve lexical assumptions, such as one-to-one lexical correspondence and overgeneralization of the limited and conditional lexical equivalence between the source and target languages.

Moreover, some between-group differences were embodied in progressive trends across the three levels. From the novice to the advanced group, a gradual decrease was found in the number of problem word entries or lookups, Chinese problem words, cases of unsuccessful integration, and searches for meaning- and language-related information, but there was an increase in the quantity and proportion of the searches for collocation-related information.

Some results obtained from this observation of lookup process were also found to be supportive of the findings of the study on the effect of lexical consultation. First, the fifteen observed informants had roughly the same consultation need in terms of lexical problems as that of the 90 subjects of the experiment; Second, a gradual decrease was found in the number of lookups from the novice to the advanced level, similar to the tendency found in the number of changes made by the three larger groups in the experiment. Third, the composition of the internal searches by the fifteen informants turned out to be very similar to the makeup of the problems addressed by the participants in the experiment. Last, a vast majority of lexical
searches led to successful results and only a small proportion failed, which echoed with the success and failure rates of consultation in the experiment.

6.3 Summary of Chapter 6

In this chapter, Research Question (Q2) about the characteristics of lexical consultation at the three different levels was answered by examining the between-group differences in the types of problems addressed and in the consultation process. Significant distinctions were found between the novice and the advance learners in the quantity and proportion of language- and meaning-related problems addressed. In terms of consultation process, the top and the bottom levels turned out to have more features that distinguished themselves from the other groups. The advanced learners had much fewer searches for meaning- and language-related information, but more searches for collocational information. Moreover, they showed more behavioral features conducive to consultation success, and they also refined their lexical choice through consultation. The novice learners, on the other hand, had more cases of failed integration, which brought about a much lower success and higher failure rates of consultation; and they also displayed more naïve lexical assumptions. In most of the comparisons, the intermediate group stayed middling, except that it scored the highest in the number of searches and cases of successful integration, though the highest success rate was achieved by the advanced group.

Apart from the differences among the subject groups, some developmental trends were also detected by examining the lexical problems addressed and the lookup process. A gradual decrease from the novice to the advanced level was found in the number of meaning- and language-related problems. With the increasing translation competence, there was also a progressive decline in consultation need, which was reflected in the shrinking number of lookups, L2 lexical voids to be filled, and searches for meaning- and language related information. However, the quantity and proportion of searches for collocation-related information was on the increase from the bottom to the top level.
Moreover, some findings concerning the consultation process of the observed informants as a whole were found to echo with the results of the earlier experiment on the effect of lexical consultation. The fifteen subjects of the observation and the ninety informants of the experiment addressed highly similar lexical problems that prompted consultation; a gradual decline from the bottom to the top level was found in the quantities of both the lookups by the small sample and the changes made by the large sample; similarities existed between the makeup of the fifteen subjects’ internal search and composition of the problems addressed by the ninety participants; and the success and failure ratios of information integration recorded from the observation was close to those of consultation achieved in the experiment.

Most of the above results seem to point to the unsurprising conclusions that translators with better competence tend to have a reduced reference need and to display more characteristics needed for successful consultation. However, these empirical findings provided the basis of such claims and gave a detailed picture of the between-level differences and developmental trends in lexical consultation. We are thus able to see not only the distinctive features of each level but also how these features developed with the increasing competence. Of course, some of the results, especially those based on the numeral data from the observation, were not generalizable due to the limited sample size; but they provided exploratory descriptions of the lexical consultation at the three different levels, which could serve as hypotheses for future studies of a larger scale. Moreover, some new findings supported the previous conclusions drawn from the experiment, making them more trustworthy through data triangulation; at the same time, they could also be seen as a proof of the representativeness of the smaller sample. Last, by analyzing authentic examples of lexical searches and lookups, we saw different consultation moves, their consequences and even the motives behind. This enabled us to touch upon some psychological aspects of lexical consultation and also smoothed the way for a more focused study of consultation-induced errors to be conducted in the next chapter.
Chapter 7
Causes of Unsuccessful Consultation

This chapter answers the following research question by examining the corresponding hypotheses:

(Q3) What are the causes of unsuccessful lexical consultation in translation?

Hypothesis 3A: An unsuccessfully-solved lexical problem can be attributed to a faulty step in the consultation process, especially in determining problem word, internal search, or integrating information.

Hypothesis 3B: An erroneous item in the translated text as a result of consultation will demonstrate certain empty space in the internal structure of the entry.

To address Hypothesis 3A that a lexical error in the translated text can be traced to a wrong move in consultation, an examination is carried out in Section 7.1 of the lookup process in the 37 failed consultation attempts made by the fifteen observed informants. Each lexical search is looked into so as to find out which step led to the erroneous item in the translation. Then, in Section 7.2, the faulty items collected from the experiment and observation are put together and analyzed to test Hypothesis 3B. Jiang’s (2000, 2004b) model of L2 lexical development is used as the analytical tool to discern the empty space in the internal structure of the entry; and the findings presented in the previous chapters and sections are considered in the discussion about the causes of the consultation failures. Last, a summary is made of this chapter in Section 7.3.
7.1 Faulty Moves in Consultation

As Hartmann (2001) rightly points out, lexical consultation can be a complex process involving “complications, repetitions and parallel events” (p. 91). To track down the faulty move in a lookup effort, it is necessary to work out a method that is both reasonable and conducive to the research purpose of this thesis. The adapted model of consultation process discussed in Section 3.2.2 is used in the following analysis, focusing on the three major lookup steps, namely, determining problem word, internal search, and integrating information. In addition, a faulty move is defined in this study as the initial act that is responsible for bringing about a lexical error in the translated text. This means that the move taken before it is not accountable for the translation mistake. The faulty moves in each of the three major consultation phases are described as follows.

In identifying the problem word, a faulty move involved the selection of an inappropriate lexical item to be looked up that led to the incorporation of an inappropriate item into the target text. If the sought item was not used in the translation, such a choice was not taken as a wrong act. Mistakes made in internal search featured the extraction of some information from the reference sources that turned out to be inappropriate when incorporated into the target text. It could be a wrong word or usage picked out from the reference source. A faulty move in information integration was characterized by the wrong use of a rightly chosen item in the translated text.

The 37 unsuccessful consultation attempts are grouped according to the above descriptions; and the faulty steps found in determining problem word, internal search, and integrating information are examined in Sections 7.1.1, 7.1.2 and 7.1.3 respectively, followed by a summary in 7.1.4. Moreover, the faulty moves are also contrasted to the successful lookups so as to see what could be done to avoid the mistakes made in consultation process.
7.1.1 Identifying Problem Word

Of the 37 cases of failed consultation, thirteen, or about one third, could be attributed to the selection of an inappropriate problem word. In ten of them, the looked-up item was an English one; and in the other three, the problem word was in Chinese. An examination of these thirteen cases showed that they could be roughly divided into three types, each of which bore some noteworthy features.

The first type featured a hasty confirmation of an inappropriate English problem word as the counterpart of the Chinese item in question from the source text. Here are two examples from the observation records, which describe the consultation acts taken during a lexical search, together with the informant’s code number, the lexical problem addressed (the underlined part), and the starting time of each act.

Example 1

**Informant:** N31  **Lexical Problem:** 管馒头稀饭的保姆 (nannies in charge of daily matters)

28’30” Typed caretakers who regulate the personal lives of the students.
74’02” Looked up regulate in English-Chinese Dictionary from Casio Electronic Dictionary.
74’05” Read the following page.

```
regulate /ˈrɛɡjəleɪt/

1 vt. 1 管理；指挥；控制；制约；为…制定规章
2 校准；对准；调整；调节
3 [−oneself] [生] 调整
4 整治，调理
5 使规制化，使规律化；使条理化
6 vi. [生]调整

[«LL rēgūlāre to control <L rēgula rule 见 ⇒RULE]
```

74’20” Did not make any change to caretakers who regulate the personal lives of the students.

Example 2

**Informant:** N32  **Lexical Problem:** 喂哺式的辅导 (spoon-fed education)

29’02” Typed they always receive.
29’09” Looked up fostering in Youdao On-line Dictionary and read the following page.

```
fostering ['fɒstərɪŋ]

v. 养育 (foster 的现在分词)，哺育

网络释义

— 哺育
接近 Fortress 的字词...fosterage 养育，寄养，养子 环境 fostering 哺育 fostering 养子，寄养儿...
基于 22 个网页;相关网页
```
30°16” Typed a fostering education.

In these two cases, the problem words *regulate* and *foster* were retrieved from the translators’ mental lexicon. However, both the informants seemed to be uncertain about their lexical choices, so they needed to make consultation for the purpose of confirmation. The retrospective interviews conducted after the observation showed that the purpose of their lookup was to check the equivalents or translations of the problem words. From a brief look at the looked-up entries, they found that the Chinese counterparts (i.e., 管理 and 哺育) of *regulate* and *foster* corresponded synonymously to the problematic items in the source text, i.e., 管 (in charge of or taking care of) and 喂哺 (spoon-fed) respectively. Gaining such assurances, they soon used the looked-up words in the translated text. The first informant might have also noticed the transitivity of *regulate* whereas the second might have checked whether *fostering* could be used as a modifier as she looked up the gerund form of *foster*. Nevertheless, satisfied with what they had acquired, they did not go further to seek more information about the two English problem words even though one more click or scrolling down could have shown them their definitions, usage or examples, which might have helped them make a better lexical choice.

The second type of failed consultation was characterized by a usage search of an inappropriate English problem word. Let us take a look at the following cases.

**Example 3**

**Informant:** N31 **Lexical Problem:** 保姆校长 (a nanny type of university president)


0°30” Read the following page.

<table>
<thead>
<tr>
<th>caretaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>noun</td>
</tr>
<tr>
<td>1 a person employed to look after a building.</td>
</tr>
<tr>
<td>[as modifier] holding power temporarily</td>
</tr>
</tbody>
</table>
the club’s caretaker manager.

2. (chiefly N. Amer.) a person employed to look after people or animals

1’20” Looked up 保姆 in Chinese-English Dictionary from Casio Electronic Dictionary.

1’28” Read the following page before moving on to translate other part of the Chinese article.

【保姆】bǎo mǔ
①(保育员) (children’s) nurse
②(为人做家务劳动的妇女) housekeeper; house maid

70’51” Came back to the title and looked up caretaking in National British Corpus.

70’55” Read the following page (only the first six solutions are shown here, with the rest omitted).

Results of your search
Your query was
caretaking
Only 30 solutions found for this query
B23 243 When preparing budgetary estimates of income, schools should take attendant costs—for instance, caretaking, heating, lighting, wear and tear with lettings—into account.
B23 1085 More caretaking and cleaning staff have been needed as heads and governors seek to maximise the use of school premises and income gained from lettings.
B23 1409 What is the basic cost of providing any room or recreation area for an evening, including of course heating, lighting, cleaning and caretaking?
BML 1600 Do not overlook porters, caretaking staff, security officers, and so on.
CBX 169 Caretaking
EFF 857 The ‘stewardship’ and ‘caretaking’ of nature are spoken of as if they were self-evidently desirable aims in a wild place.

71’20” Looked up caretaking in Oxford Dictionary of English but found no result.

71’28” Typed President the Caretaker as the title.

Example 4

Informant: I31 Lexical Problem: 指导学术与教育大方向的决策人 (decision-makers who set the course for academic research and education)
12’06” Typed the university presidents should be the decision makers of the.
12’42” Changed the decision makers of the into the decision makers to.
12’52” Looked up avigate in Youdao On-line Dictionary and read the following page.

13’02” Clicked navigate in the prompt Are you looking for: navigate.

13’05” Read the following page.

navigate

您要找的是不是(Are you Looking for)
navigate vt. 驾驶, 操纵；使通过, 航行于 [vi...]

avigate网络释义
— 领航
在线航空专业英语词典查询 avicide n. 机群 avigate n. 领航 avigator n. 空中领航员...

基于一个网页 相关网页
The problem words looked up in the above two examples were also retrieved from the informants’ mental lexicon and they turned out to be inappropriate in the target text. After verifying the meaning of caretaker in the Oxford Dictionary of English and finding no better alternative in the Chinese-English Dictionary, the informant in Example 3 went on to check whether caretaking could be used as a modifier, according to the retrospective interview with her. When getting a mostly negative answer from the National British Corpus, she turned back to the agent noun and used caretaker in her translation of the title. The informant in Example 4 reported that he wanted to check the transitivity of the problem word. His first lookup suggested that he had trouble with the spelling of the problem word. Unsatisfied with the limited data obtained from his second attempt, he then conducted the third lookup and seemed to have found the needed information there, which not only showed that the Chinese counterparts (i.e., 指引 and 指导) of navigate listed under the third sense of the entry corresponded directly with the lexical problem in the source text (指引) but also provided the usage of the word as a transitive verb through examples. Hence he produced a strange combination navigate the direction in his translation.

The third type of faulty moves involves an inappropriate Chinese problem word that
deviated from the intended meaning of the original item. There were three cases of this kind, which reflected the misunderstanding of the original message conveyed in the metaphorical expressions in the source text. Here is an example:

Example 5

**Informant:** A34  **Lexical Problem:** 管馒头稀饭的保姆 (nannies in charge of daily matters)

36’30” Moved the cursor to a nanny who’s responsible for feeding the students.

36’37” Looked up 一日三餐 in Youdao On-line Dictionary and read the following page.

<table>
<thead>
<tr>
<th>热门短语</th>
</tr>
</thead>
<tbody>
<tr>
<td>一日三餐</td>
</tr>
<tr>
<td>eat three meals a day; have three meals every day</td>
</tr>
</tbody>
</table>

36’47” Scrolled down to and read the following page.

<table>
<thead>
<tr>
<th>双语例句</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 当我小时候，我们甚至从未有过一日三餐。</td>
</tr>
<tr>
<td>When I was young, we never even had three meals a day.</td>
</tr>
<tr>
<td>article.yeeyan.org</td>
</tr>
<tr>
<td>2. 实行热量限制的人们可以吃一日三餐。</td>
</tr>
<tr>
<td>People on caloric restriction can eat three meals a day.</td>
</tr>
<tr>
<td><a href="http://www.en8848.com.cn">www.en8848.com.cn</a></td>
</tr>
</tbody>
</table>

36’58” Changed a nanny who’s responsible for feeding students into a nanny who’s responsible for daily meals.

37’12” Looked up 馒头稀饭 in Youdao On-line Dictionary and read the following page.

<table>
<thead>
<tr>
<th>馒头稀饭</th>
</tr>
</thead>
<tbody>
<tr>
<td>双语例句</td>
</tr>
<tr>
<td>1. 今天我们早饭吃鸡蛋、稀饭和馒头。</td>
</tr>
<tr>
<td>Today we have egg, porridge and steamed bread for breakfast.</td>
</tr>
<tr>
<td><a href="http://www.ichacha.net">www.ichacha.net</a></td>
</tr>
<tr>
<td>2. 主食: 糕点,包子,馒头,稀饭,煎蛋。</td>
</tr>
<tr>
<td>Staple food: cake, Chinese dumpling, steamed, congee, omelette.</td>
</tr>
<tr>
<td>zhidao.baidu.com</td>
</tr>
</tbody>
</table>

37’18” Did not make any change to a nanny who’s responsible for daily meals.

In Example 5, the Chinese phrase 馒头稀饭 (literally steamed buns and congee, implying trivial matters) was wrongly understood as 一日三餐 (three meals a day), which, in its metaphorical sense, may implicate something essential in Chinese. After integrating the information extracted from the first lookup into the translated text by changing the previous version, the informant went back to look up the original Chinese phrase. This might suggest that she was not completely satisfied with the consultation result. But finding no better alternative, she left the new version as it
was. Similarly, in the other two cases, the original phrase spoon-fed education was misunderstood as hand-holding education or cramming method of education, which were looked up in the lexical search. Such selection of inappropriate problem words based on misunderstanding finally led to the undesirable renderings that miscommunicated the original message.

The above three types of faulty moves all involved the selection of an inappropriate problem word. In most cases, the looked-up item deviated from the intended meaning of the problematic unit in the source text even if it had been confirmed through lookup as the “counterparts” of the source-text item. In a few cases, the target language-norms were breached when the extracted term was integrated into the translated text even though certain aspect(s) of its use had been confirmed through consultation. As can been seen from the above examples, in the consultation process, the informants seemed to have focused on some properties of the sought item while neglecting other aspects that were also essential for it to fit into the target text. They integrated the retrieved information directly into the target text without conducting further lookup, but as it turned out, mere “counterpart confirming” or “usage checking” did not guarantee successful consultation, and in many cases, examining particular specifications of an item was not enough to make it an appropriate term to be incorporated into the translated text.

However, as mentioned Section 6.2.1.1, the selection of an inappropriate problem word did not necessarily lead to the integration of a wrong item into the target text. In fact, the fifteen observed informants consulted about a total of 50 inappropriate units, but only thirteen of them brought about undesirable renderings as discussed above. This suggests that the other 37, or most of the inappropriate problem words might have been found inappropriate through consultation so that they were abandoned. For instance, when dealing with spoon-fed education, Informants N34 and I32 consulted about cramming method of teaching. But instead of directly using the counterparts offered in the reference sources, i.e., cramming method of teaching and rote learning, they went on to look
them up and discarded them as unsuitable after learning their definitions in the second consultation. Other inappropriate problem words that were abandoned after lookup included *child-minder*, *principal*, *scholarism*, *wander*, *behave oneself*, *force-feeding education* and *it is often heard that*, intended as the translation of 保姆 (*babysitter* or *nanny*), 大校长 (*university president*), 学术 (*academic study*), 行走 (*walk*), 自治自律 (*discipline oneself*), 喂哺式的辅导 (*spoon-fed education*), and 听某人说 (*hear somebody say*) respectively. Those looked-up words were found to be unfit in one way or another before being rejected. During the consultation process, the informants tended to have more thorough searches about the items, involving their usages as well as the meaning. This could be seen from the careful examination of the example sentences and the use of more diversified reference sources, including web search sites, on-line corpuses and encyclopedias. Based on the above contrastive analysis, it could be said that in terms of consultation acts, more depth and breadth in lexical search might help prevent the selection of inappropriate problem words from bringing about undesirable renderings in the target text.

### 7.1.2 Internal Search

More than half of the 37 failed lexical searches could be put down to a faulty move during the internal search. There were 20 such cases, all of which involved the extraction of the information that turned out to be inappropriate when integrated into the target. They could be divided into two types; the first type made up a large majority of the total, leaving just two cases of the other type.

The first type of failed internal search attempts featured a Chinese problem word taken directly from the source text, unavailability of any appropriate English translation or counterpart in the consulted entry, and extraction of unsuitable information. Here are two examples:

Example 6

**Informant:** N34  **Lexical Problem:** 基础教育 (*primary and secondary education*)
23'02" Typed primary education.
23'18" Looked up 基础教育 in Youdao On-line Dictionary and read the following page.

23'30" Changed primary education into basic education.

Example 7
Informant: N32  Lexical Problem: 喂哺式的辅导 (spoon-fed education)
24'32" Looked up 辅导 in Youdao On-line Dictionary and read the following page.

24'40" Looked up tutorship in Youdao On-line Dictionary and read the following entry.

24'44" Typed the “fostering” tutorship.

In the above examples, the problem words 基础教育 (literally basic education but meaning primary and secondary education in the context) and 辅导 (literally tutoring or counseling but meaning education or teaching in the context) were taken directly from the source text. In the original context, however, they took on an instancial or text meaning “which is unique to each specific instance” (Halliday & Hasan, 1976, p. 289) and thus different from the semantic meaning. In the source text,
the former referred to *primary and secondary education* rather than just *primary or basic education* whereas the latter meant *education or teaching* instead of *tutoring or counseling*. In Examples 6 and 7, it turned out that the looked-up entries did not provide any English translation or counterpart that could express the instantial meaning of the original items. However, the informants just picked one from the offered lexical choices and incorporated it into the translated text. The second informant also had one more lookup of the extracted item in order to confirm that the Chinese counterpart of *tutorship* corresponded to the original Chinese phrase 辅导.

On the surface, the extraction of inappropriate information seemed to result from the informants’ lack of judgment when facing consulted entries that offered no satisfactory solution. But in the final analysis, the blame should be put on the miscomprehension of the original message caused by the neglect of the instantial meaning of the lexical items.

There were only two cases of the other type of faulty moves in internal search. They involved the selection of inappropriate information from the looked-up entry that provided some better choices. Let us look at one of them.

**Example 8**

**Informant:** N32

**Lexical Problem:** 指导学术和教学方向 (*set the course of academic research and education*)

12’40” Typed *give directions of academic and educational development*.

13’01” Moved the cursor to *of* in the above phrase.

13’14” Looked up *give directions* in Youdao On-line Dictionary and read the following page.

<table>
<thead>
<tr>
<th>give direction</th>
<th>网络释义</th>
</tr>
</thead>
<tbody>
<tr>
<td>— 指出方向</td>
<td>双语例句</td>
</tr>
<tr>
<td>练例</td>
<td>原声例句 权威例句</td>
</tr>
<tr>
<td>1. Analyze thermal condition inside LED display and give direction to display design.</td>
<td>1. 分析 LED 屏内部的热环境，并对屏的设计进行指导。www.renhe.cn</td>
</tr>
<tr>
<td>2. I will personally collaborate with developer/designer in order to give directions about the style and functionality of the site.</td>
<td>2. 我会亲自与开发商/设计师合作，以提供有关该网站的风格和功能的方向。www.faqfreelancer.com</td>
</tr>
<tr>
<td>3. A bull horn or other hailing device should be used to attempt to give direction to any conscious victim trapped within the structure.</td>
<td>3. 应使用大功率扩音器或其他喊话设备，向被困在建筑物中神志尚清醒的幸存者喊话。pro.yeeyan.com</td>
</tr>
</tbody>
</table>
In this example, the informant wanted to find a better preposition to link *give directions* and *academic and educational development*. But she seemed to have overlooked the second example sentence in the looked-up entry that offered the needed information, i.e., *give directions about*. Instead, she extracted the combination pattern from the third example sentence, i.e., *give direction to*, which led to a wrong use of preposition in the target text. Similarly, in the other case, the informant who needed a verb to mean 教出 (produce/teach/train) picked *cultivate* instead of *train* from a list of English counterparts of 培养 including foster, train, develop, cultivate and educate. Without further lookup of the chosen word *cultivate*, he produced the phrase *to cultivate a student to make their own decisions*. In both cases, the informants missed the appropriate solution offered in the entry.

As can be seen, the misjudgment in selecting information during internal search was caused mostly by misunderstanding the source-text item that posed a lexical problem in translation. There were only a few cases where the appropriate information in the entry was simply passed over, which might have been due to negligence. A closer look into the 37 failed lookup attempts revealed that nearly half of them could be attributed to the selection of some inappropriate items from the entry where no appropriate choices were offered. As mentioned in Section 4.3.3, the source text included a few terms whose instantial or text meaning had to be worked out in order to be appropriately rendered, such as 辅导 (literally tutoring or counseling but meaning teaching or training within the context) and 基础教育 (literally elementary, fundamental, or basic education but instantially referring to elementary and secondary education) and 看情况 (judge the situation rather than depending on circumstances). This meant that the needed information might not be readily provided from the looked-up entries. So direct integration of the extracted information into the target text tended to bring about undesirable renderings, as shown in Example 7. Some metaphorical expressions posed a similar challenge to the informants, such as 喂哺式的辅导 (spoon-fed education) in Example 2 and 保姆
校长（a nanny type of university president）在例3中。观察记录显示，能够适当地传达修辞意义的英文翻译并不 readily available in the reference sources.

To find appropriate translation or counterparts of such terms, more effort was needed than merely looking them up and integrating the information offered directly into the target text. Let us look at the following example (also mentioned in Section 6.2.1.1), which was not very successful, but it shows some recommendable features. To save space, the looked-up entries and web pages were not reproduced but briefly described here.

Example 9

Informant: N31 Lexical Problem: 基础教育 (primary and secondary education)
40'09” Looked up 基础教育 in Youdao Online Dictionary, which gave foundation education and basic education.
40’17” Searched 基础教育 at www.baidu.com and read the first eight results, which were all in Chinese.
40’35” Searched 基础教育 at www.google.com and got 208,000,000 results.
40’59” Clicked the first google result WHAT IS FUNDAMENTAL EDUCATION?-Wiley Online Library.
41’15” Read the article WHAT IS FUNDAMENTAL EDUCATION?, which defined fundamental education as education for life.
41’30” Googled fundamental education 基础教育, got 56,200 results and read the first twelve, one of which included 基础教育 and its translation basic education.
41’53” Googled basic education 基础教育, got 203,000 results and clicked the first result 基础教育_维基百科 (Wikipedia in Chinese).
42’22” Read the definition of 基础教育 in Wikipedia, which defined the term as 通常包括正规的小学和中学阶段的教育 (generally includes formal elementary and secondary education).
42’28” Turned to Wikipedia in English, which said: According to the International Standard Classification of Education (ISCED), basic education comprises primary education (first stage of basic education) and lower secondary education (second stage). In countries (developing countries in particular), Basic Education often includes also pre-primary education and/or adult literacy programs.
42’59” Clicked the link ISCED in the above text and skimmed International Standard Classification of Education.
43’27” Searched basic education in the above page and read: Primary education or first stage of basic education—normally starting between the ages of 5 - 7, designed to give a sound basic education in reading, writing and mathematics along with an
elementary understanding of other subjects; Lower secondary education or second stage of basic education—more specialized education typically beginning at age 15 or 16 years and/or completes secondary education in preparation for tertiary education, or to provide skills relevant to employment, or both.

Although the strenuous consultation effort only produced a passable rendering, it demonstrates what could be done to avoid the selection and integration of inappropriate information. The informant’s persistent search for the definitions of fundamental, basic and elementary education from various reference sources suggested that she was circumspect about these newfound terms and determined to find out whether their meaning corresponded to the concept she drew from the original phrase 基础教育 (primary and secondary education). The final abandonment of the looked-up terms and resort to paraphrase reflected her dissatisfaction about the looked-up items, which were found inadequate for expressing the intended message. Behind these moves was the informant’s grasp of the instantial meaning of the Chinese phrase in question. This lexical search contrasted strikingly with the one in Example 6, in which the offered English counterpart, basic education, was taken directly from the looked-up entry and used in the target text without further check. Outwardly, it was consultation depth or perseverance that made a difference, but at the root, the driving force behind the persistent lookup effort was the translator’s correct understanding of the original phrase.

7.1.3 Integrating Information

Only four of the 37 failed lookup attempts can be imputed to the misuse of an
appropriate item obtained from consultation at the information integration stage. Here is an example.

Example 10

**Informant:** N35 **Lexical Problem:** 高瞻远瞩 (farsighted)

13’40” Looked up 高瞻远瞩 in Youdao On-line Dictionary and read the following entry.

<table>
<thead>
<tr>
<th>高瞻远瞩</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look far ahead and aim high</td>
</tr>
<tr>
<td>Take a broad and long-term view</td>
</tr>
</tbody>
</table>

网络释义 双语词典

— Think beforehand

短语

高瞻远瞩的公司 visionary company

高瞻远瞩的 forward-looking

13’52” Scrolled down to New Chinese-English Dictionary and bilingual examples.

<table>
<thead>
<tr>
<th>新英汉大辞典 (New Chinese-English Dictionary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>高瞻远瞩 [gāo zhān yuǎn zhǔ]</td>
</tr>
<tr>
<td>(形容眼光远大) look far ahead from a high plane; look far ahead and aim high; take a broad and long (long-term) view;...show great foresight;...from the most commanding height and with the greatest vision;...having great foresight [ a plan for the future]</td>
</tr>
</tbody>
</table>

双语例句 (Bilingual Examples)

1. 他们是对的，其高瞻远瞩为整个业界树立了楷模。
   They were right, and their vision set the pattern for an entire industry. article.yeeyan.org
2. 在关键时刻，他高瞻远瞩，力挽狂澜。
   At the crucial moment, he showed great foresight and turn back the powers of darkness.

《新英汉大辞典》(New Chinese-English Dictionary)

14’48” Typed decision-makers with foresights.

As can be seen, the faulty move occurred when the informant used the mass noun foresight in plural form in the target text. The neglect of the word’s uncountability was the cause for this mistake. Such misuse of right words was also found in a few other cases. For example, the extracted word academic was wrongly incorporated as a parallel adjective into the phrase the forward-looking and academic decision-makers; after university president was found in the looked-up entry, president was mistakenly taken as adequate on its own for expressing 校长 (head of an education institution) and was thus used in the title Babysitter President; and do as told was integrated into the phrase to produce a student who does as told, which sounded awkward due to the lack of presupposition. Behind the misuse of an appropriate item extracted from the lookup was the negligence of certain properties
of the item, especially those concerning its use. Although such mistakes made up a very small part of the total body of mistakes, it was a pity that the previous consultation efforts were wasted at the last stage.

In contrast, quite a few searches by the observed informants involved usage checks of the items to be used. For instance, Informants N31, N32, N33 and A34 looked up *campus* to see whether *in* or *on* should be used before it or whether a definite article was needed there; and Informants I3 and A34 consulted about *slipper* in order to decide whether *with* or *in* should be used to mean *wearing*. Such probes into usage could reduce the risk of misuse of the lexical items at the information integration stage.

### 7.1.4 Summary

The above analysis of the unsuccessful lookup efforts supported Hypothesis 3A that unsolved lexical problems were attributable to a faulty step taken during the consultation. Selecting an inappropriate problem word to look up, extracting unsuitable information from the reference source, misusing an extracted item in the target text, any of these moves could lead to a failed attempt to solve a lexical problem.

By examining the faulty moves, it was found that neglect of certain properties of the lexical item seemed to be a common cause of the consultation failure. When focusing on particular aspects of the sought term, such as its correspondence to the source-text item as a cross-language counterpart, its semantic meaning, or some usage information, the informants tended to overlook its other specifications that must be observed in order to make a correct lexical decision. If such negligence was not rectified through the consultation process, it would bring about a lexical mistake in the translation.

The contrastive study of the successful lookup efforts showed us what could be done to avoid the mistakes made in consultation. Furthering the depth and width of lexical
searches, comprehending the message of the original text (especially the metaphorical and instential meaning), and having more perseverance, caution or carefulness were found helpful in avoiding the faulty moves or preventing them from producing lexical errors in the target text. Some of these acts were similar to the recommended consultation behaviors discussed in Section 6.2.2.2.

7.2 Erroneous Lexical Items

In this section, all the consultation-induced errors are examined to answer Hypothesis 3B, which is repeated here,

*Hypothesis 3B: An erroneous item in the translated text as a result of consultation will demonstrate certain empty space in the internal structure of the entry.*

There were altogether 153 erroneous items resulting from lexical consultation. According to the analysis using the method discussed in Section 4.4.3, meaning-, the collocation-, and language-related errors amounted to 100, 30 and 23 respectively. Table 7.1 showed the quantities and percentages of the three types of mistakes made by the three groups. On the whole, the numbers of the three types of errors were on the decrease from the novice to advanced level, but their proportions seemed to be rather similar across the three groups. For each competence level, the majority of the errors were meaning-related, a remarkable share was collocation-related, and the language-related ones made up a noticeable proportion. This makeup of the lexical errors echoed the recurrent pattern found in the study of the effect of consultation on translation and the problems addressed through consultation (see Sections 5.1 and 6.1).

**Table 7.1**
Quantity and percentage of each type of errors by each group.

<table>
<thead>
<tr>
<th>Type of Errors</th>
<th>Novice Group</th>
<th>Intermediate Group</th>
<th>Advanced Group</th>
<th>Total of 3 Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning-related</td>
<td>56 (65%)</td>
<td>28 (66.7%)</td>
<td>16 (64%)</td>
<td>100 (65.4%)</td>
</tr>
<tr>
<td>Collocation-related</td>
<td>15 (17.5%)</td>
<td>10 (23.8%)</td>
<td>5 (20%)</td>
<td>30 (19.6%)</td>
</tr>
<tr>
<td>Language-related</td>
<td>15 (17.5%)</td>
<td>4 (9.5%)</td>
<td>4 (16%)</td>
<td>23 (15%)</td>
</tr>
</tbody>
</table>
The three types of mistakes are discussed respectively in Sections 7.2.1, 7.2.2 and 7.2.3. To answer Hypothesis 3B about the empty space in the misused entry, the faulty items are examined to detect the defective aspect in their internal structures. Here, the adapted internal structure of the lexical entry (see Sections 3.3.3) and Jiang’s (2000, 2004b) model of L2 lexical development (see Section 3.3.1) are used as the analytic tools in the discussion. Moreover, the previous findings about the informants’ consultation process are also referred to in the exploration of the causes of the failed lookup attempts. Last, a summary is made in Section 7.2.4.

7.2.1 Meaning-related Errors

Of the 156 lexical mistakes, 100 were meaning-related errors, making up about two thirds of the total. It was found that of the 100 cases, 96 were defective in propositional meaning, three were defective in evoked meaning and one in expressive meaning. In the following, the mistakes in expressive and evoked meaning are combined and discussed after the analysis of the cases with defects in propositional meaning.

Propositional Meaning

The overwhelming majority of the meaning-related mistakes were found faulty in their propositional meaning. As the result of lexical consultation, these renderings failed to express the intended meaning of the source-text items in terms of the truth value. The 96 cases of this type can be divided into the following three groups.

Accounting for an overwhelming majority, the first group consisted of the renderings of the terms whose metaphorical or instantial meaning had to be grasped in order to be properly translated. Of over 60 such cases, about half had to do with metaphorical expressions and the other half involved the terms whose instantial or text meaning differed from the literal meaning. The involved metaphorical phrases turned out to be identical with the intended lexical problems of this type (see Section 4.3.3), such as 喂哺式的辅导 (literally baby-feeding type of education, meaning overprotective
way of education or spoon-fed education) and 馒头稀饭 (literally steamed buns and congee, meaning daily matters). In over 30 cases, the translation of such metaphors was either a literal transfer or a rendering astray from the intended meaning, thus failing to convey the figurative sense (exemplified and discussed in Sections 5.1.3.1; 5.1.4.1; 7.1.1 and 7.1.2). Apart from the metaphorical phrases, those items with an instansial meaning different from the literal meaning also posed difficulties for the informants. A typical example was the term 基础教育 (literally basic or elementary education but referring to primary and secondary education in the original context) (see Section 7.1.2), which was mistranslated by 28 participants in spite of their consultation effort. The term 辅导 (literally tutoring or counselling but meaning teaching or education within the context) caused a similar problem (see Section 7.1.2). The literal translation of such terms failed to convey the instansial meaning of the original phrase, and a truth-value deficiency was detected in the internal structure of the integrated item. The consultation process leading to such errors was usually characterized by the selection of an inappropriate problem word, confirmation of literal correspondence and lack of search for the information about other properties of the entry than those of the sought ones (see Examples 2, 5 and 7 in Section 7.1).

Some previous studies also found that lexical units whose meaning was dependent on situational or textual context tended to cause consultation failures (Atkins & Varantola, 1997; Bogaards, 1998; Li, 1998; Varantola, 1998).

The second group of cases made up for over one fourth of the total 96 erroneous units defective in propositional meaning. These cases involved no metaphorical or instansial meaning, but the integrated items also failed to convey the intended message in the source text, and a deficiency could be detected in the truth value of the entry. For instance, gymnastics was used to mean setting-up exercises; bring up was used to mean train; and talents was used to mean human resources. Such falsely-established equivalence was also found between stereotyped and inflexible, act and behave, foresee the future and have foresight, and policy-maker and decision-maker, etc. Some of the pairs might be synonymous under particular
circumstances but they were not interchangeable in the context of the translated text. For example, it is all right to say The university presidents did act like strict but loving parents or The universities train students to be independent decision-makers, but it would be inappropriate to say The principals did behave like strict but loving parents or The universities bring up students to be independent policy-makers.

Here, a noteworthy fact was that the two members of each pair shared the same L1 translation. This phenomenon was called the same-translation effect (Jiang, 2002, 2004b), under which the semantic representations of two L2 words sharing the same L1 translation would be highly similar or identical in the mind of a L2 learner. It was regarded “as strong evidence in support of the presence of L1 semantic content in L2 lexical entries” (Jiang, 2002, p. 617). Table 7.2 shows ten examples of this type found in this study. The left column lists the Chinese translation shared by two English items; these Chinese items are either identical or synonymous to the mistranslated items in the source text. The English items in the middle column are the erroneous renderings found in the participants’ translation while those in the right column are appropriate translations of the Chinese items in the left column.

**Table 7.2**
Examples of English word pairs sharing the same Chinese translation.

<table>
<thead>
<tr>
<th>Shared Chinese (L1) Translation</th>
<th>English (L2)</th>
<th>Word Pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>体操</td>
<td>gymnastics</td>
<td>setting-up exercises</td>
</tr>
<tr>
<td>培养</td>
<td>bring up</td>
<td>train</td>
</tr>
<tr>
<td>人才</td>
<td>talents</td>
<td>human resources</td>
</tr>
<tr>
<td>刻板的</td>
<td>stereotyped</td>
<td>inflexible</td>
</tr>
<tr>
<td>举止/表现</td>
<td>behave</td>
<td>act</td>
</tr>
<tr>
<td>有先见之明</td>
<td>foresee the future</td>
<td>have foresight</td>
</tr>
<tr>
<td>决策者</td>
<td>policy-makers</td>
<td>decision-makers</td>
</tr>
<tr>
<td>校长</td>
<td>principal</td>
<td>president</td>
</tr>
<tr>
<td>慈爱的</td>
<td>benevolent</td>
<td>loving</td>
</tr>
<tr>
<td>管</td>
<td>regulate</td>
<td>be in charge of</td>
</tr>
</tbody>
</table>

According to Jiang’s theory, erroneous items in the middle column of Table 7.2 had their propositional meaning copied from their Chinese translations. However, though sharing the same Chinese translation, the English items in the middle and right columns were different in their propositional meaning, and it turned out in the
translation task that the mistranslated source-text terms had a propositional meaning which only the items in the third column could match. The duplication of the properties of propositional meaning from L1 translation equivalents well explained the defect found in the truth value of the erroneous items.

The consultation process that led to such mistakes usually featured a hasty confirmation of an English item as the counterpart of the source-text term in question and a lack of further search for the definition or use of the English item. Example 1 in Section 7.1.1 was a typical case, in which *regulate* was left unchanged in the checked-on phrase *caretakers who regulate the personal lives of the students* after being confirmed as the translation equivalent of the term 管 (*be in charge of*) in the original text (see the last trio in Table 7.2).

The third group of meaning-related mistakes consisted of half a dozen cases of paraphrastic translation that were inaccurate or wrong in the propositional meaning. For instance, *they are acting according to what they said* was too simplistic a rendering for 他（们）也真做得像个严父慈母 (*they did act like strict but loving parents*); *able to use their own intelligence to solve problems according to the changing conditions* was an over-translation of 自己会看情况、做决定 (*able to judge the situation and make decisions*); and *the basic education they received turned out to be a failure* was an overgeneralizing translation of 基础教育没教好自治自律 (*students were not taught self-discipline in their primary and secondary schools*). In the lookup process, the underlined source-text phrases in the above examples were all consulted about, but their meaning was lost or distorted when the translator chose to paraphrase. This might have to do with the insufficient understanding of the relevant items in the source-text; and the informants’ misuse of some translation strategies might also have played a part, such as addition, omission, generalization, etc. However, a common feature of such paraphrastic translations was that a flaw was found in the proposition meaning of the integrated item. It means that in the internal structure of such entries, the specifications concerning the truth value are lacking.
Expressive and Evoked Meaning

Only a small fraction of the collected errors were found defective in expressive or evoked meaning. The only mistake in expressive meaning was an inappropriate rendering of the phrase 循规蹈矩的学生 (a student who sticks to accustomed rules) (see Section 5.1.4.1). Not realizing the critical tone in the original phrase, the informant translated it as a student who is strictly upright and correct after a lookup of 循规蹈矩. The underlined English phrase was directly taken from looked-up entry but the informant failed to see its lack of the needed derogative tone. According to him, he used the phrase because it also had a parallel structure like the Chinese item 循规蹈矩 (see Section 5.1.2.2). The record of the consultation process showed that the searched entry did provide some better choices: his behavior appears rather stiff—to too observant of conventional standard and stick to convention, but they were not chosen. This case provided another example of the same-translation effect. Since the original phrase 循规蹈矩 could be used both deprecatorily and complimentarily, the consulted dictionary provided a dozen translations with different undertones, including the two with derogative meaning cited above. It was likely that, to the informant, the English translations under the entry of 循规蹈矩 shared the same expressive meaning as the Chinese headword, so they could also be used either deprecatorily or complimentarily. In this way, the extracted English (L2) item copied the expressive meaning of its Chinese (L1) counterpart.

The two errors with a flaw in evoked meaning involved the translation of two metaphorical phrases, 不必如此喂之哺之 (do not have to babysit them so much) and 喂哺式的辅导 (spoon-fed way of education) (see Section 5.1.4.1). They were rendered respectively as do not have to do such "breastfeeding" and breastfeeding instruction. As mentioned in Section 5.1.3.2, breastfeeding was inappropriate in register, but the translators seemed to be unaware of this defect. From the screen-recording of consultation process, it could be seen that breastfeed was listed in the consulted source as one of English equivalents to the Chinese item 喂哺
(feed). The informant might have taken it for granted that breastfeed could be used in the same way as 喂哺. So the newly-found English word duplicated the evoked meaning of its Chinese counterpart.

7.2.2 Collocation-related Errors

Of the 156 errors, 30 were collocation-related ones, making up about one fifth of the total. In these cases, the integrated items were found defective in the presupposed meaning, that is, the collocational restrictions. They could be classified into four groups according to the collocation type.

The first group, with 13 cases, involved the breach of the norms concerning verb-object collocation. In five of them, the combination cultivate the students who… was made to translate the source-text structure 教出(培养)……的学生 (produce students who... or to train students to ...); in another five cases related to the translation of 指导……方向 (set the course of ...), the Chinese phrase was rendered as lead/point the orientation of ... or instruct/navigate the direction of.... Other inappropriate collocations of this type included set regulations and accept/experience education as the translation for 制定规则 (set out regulations) and 接受教育 (receive education) respectively. The second group had ten cases of inappropriate verb-adverbial combination. Most of them involved the phrase depending on circumstances, used after make decisions to mean 看情况 (according to circumstances) (see Section 5.1.2.1). And the other two cases in this group saw the combinations sleep enough for eight hours and sleep adequately for eight hours as the translation for 睡眠要足 8 小时 (sleep for at least eight hours), in which the two adverbs, enough and adequately, were inappropriately used (see Sections 5.1.2.1 and 5.1.4.1). The third type of collocation mistakes concerned nouns and their modifiers. Two informants coined the phrase malignant circle to mean 恶性循环 (vicious circle) and the other two invented the combinations university organizer and university educator as the translation of 办大学的人 (literally person who run the university, meaning the head of the university in the context). The last group included three cases of preposition-noun collocation, in which in campus, walk with
slippers and give directions to... development were used to mean 在校园里 (on campus), 穿拖鞋行走 (walk in slippers) and 指导……（发展）的方向 (give directions about ... development) respectively. In all the thirty cases, deficiency existed in the presupposed meaning of the integrated items.

An examination of these combination mistakes showed that the collocation specifications of most of the erroneous items were copied from their Chinese translation equivalents. In other words, the same-translation effect was detected in most of the cases. For instance, the Chinese item 恶性 (literally evil in nature) can be combined with both 肿瘤 (tumor) to mean malignant tumor and 循环 (circle) to mean vicious circle. So when the English (L2) term malignant and Chinese (L1) term 恶性 were found to be translation equivalents in the looked-up entry, the L2 learner might believe that they shared the same collocation specifications—hence the combination malignant circle. The same was true with quite a number of the examples cited in the above paragraph, in which the erroneously-used English item and the possible appropriate item formed a pair that shared one Chinese translation (in the brackets), such as cultivate and train (培养), orientation and direction (方向), set and set out (制定), and accept and receive (接受). Here, the wrongly-used English items copied the collocation properties of their Chinese translation, showing that the L2 (English) collocation specifications were still lacking.

Apart from the above instances, there were also a couple of errors that involved no same-translation effect, but copied L1 collocation properties could still be found. For example, in Chinese, 大学 (university) can be used as a modifier before 管理者 (runner) or 组织者 (organizer), so we saw two inappropriate combinations, university organizer and university runner, in the informants’ translation. Generally speaking, the English translation of 在……里 is in... while on means 在……之上 (on top of ...). Since 在校园里 (literally in campus) is a natural Chinese collocation, the informant might have thought that in... could be used in the same way as its Chinese counterpart to make the combination in campus. In these cases, we also saw
the duplication of the collocation specifications in the English entries from their Chinese translation, but the English specifications were lacking in these items.

In terms of the consultation process, collocation-related mistakes were usually characterized by the neglect of the collocation information of the sought item when searching an English translation of the source-text item in question. This was clearly illustrated by Example 4 in Section 7.1.1, where the combination navigate the... direction was formed soon after the confirmation of navigate as the translation equivalent of the Chinese phrase 指导...方向 (set the course for...) in the original text, and no further effort was made in searching the collocation specifications. Besides, carelessness in internal search was also observed as a behavioral feature leading to collocation-related errors, as was shown in Example 8 in Section 7.1.2. In that example, an inappropriate combination (give directions to...) was chosen undiscriminatingly over the appropriate one (give directions about...) from the looked-up entry to produce the phrase give directions to academic and education development.

7.2.3 Language-related Errors

An examination of the 153 lexical errors showed that twenty-three, or 15% of the total, involved the breach of some target-language rules. Nine of them were mistakes made in morphology, the other fourteen were related to syntactic restrictions of the used items, and no orthographic error was found.

Morphology

All the nine inflectional errors were committed in the number of nouns. Uncountable mass nouns were used in plural forms, such as foods and drinks and decision-makers with foresights; however, some countable nouns that should be used with a plural ending were misused in the singular form, such as walk in slipper, make decision by themselves, take order without question, and in charge of academic and educational affair.
With regard to the internal structure of the lexical entry, such errors featured an empty space in the inflection quarter. According to Jiang’s (2000, 2004b) model of L2 lexical development, the vacant morphological section is a feature of the L1 lemma mediation stage, where the copied L1 lemma information, i.e., semantics and syntax, mediates the use of L2 words. The connection between a L2 word and the conceptual representation may be built up directly through the copied L1 lemma in its entry and through lexical association with its L1 translation. The empty morphological section is due to the less susceptible transfer of language-specific inflection information (ibid.). The nine wrongly-used English (L2) terms discussed above were all nouns and they shared very similar semantic and syntactic features with their Chinese (L1) counterparts, which either came directly from the source text or represented the concepts drawn from the relevant source-text terms. In terms of semantics and syntax, the English items *food and drink, foresight, slipper, decision, order and affair*, as used in the target text, corresponded rather neatly with their Chinese equivalents 饮食, 远见, 拖鞋, 决定, 命令 and 事务. So the lemma section of these items, (whether it was copied from or just happened to be identical to that of the Chinese counterparts), did not cause any trouble. But the morphological information of the English items is indeed unique as contrasted to Chinese, a non-inflectional language that has no grammatical classification of number and makes no difference between countable and uncountable nouns. The lack of morphological information in the internal structure of the above-discussed L2 lexical items affected the proper use of them and thus resulted in inflectional errors.

**Syntax**

The fourteen syntactic mistakes were characterized by the disregard of some property in the syntax section of the lexical items incorporated into the target text. About one third of them involved the confusion of parts of speech. For instance, verbs were used as nouns or modifiers, such as in *a way of spoon-feed* and *cram education*; an adjective was taken as a noun in *daily trivials*, and the conjunction *as* was used as a relative pronoun. The other types of errors featured the misuse of prepositional
clause as the predicate, remote placement of modifiers, subject-verb disagreement, and wrong parallel structure, each with a couple of cases. Typical examples included *a nanny who in charge of food, policy-makers who guide the general direction of academy and education with great foresight, a student who follow every word which teachers say, and farsighted and academic decision-makers*. Such violation of syntactic restrictions showed that there was at least one property missing in the syntax section of the internal structure of the above underlined terms. The absent contents involved the word class, concord, grammatical function or placement in the sentence.

According to Jiang’s model (2000, 2004b), such erroneous items were at the L1 lemma mediation stage, where the semantic and syntactic sections were copied from the L1 counterparts. However, a careful study of the fourteen cases revealed that this was true in about half of them. For instance, the Chinese equivalents of *spoon-feed* and *in charge of something* are respectively 喂哺 and 负责某事, of which the former can be integrated as a modifier into the phrase 喂哺式 (*a way of spoon-feeding or spoon-feeding way*) without considering the part of speech and the latter can be used as a predicate in the clause 他负责某事 (*he is in charge of something*) without adding a linking verb as required in English. So syntactically, it can be said that the L2 terms *spoon-feed* and *in charge of something* were used in the same way as their L1 equivalents in *a way of spoon-feed* and *a nanny who in charge of food*. In another example, the conjunction *as* was wrongly used to lead a clause in *stipulate rules as walking in slippers is prohibited*. The Chinese counterpart of *as* is 像... (*like*) or 诸如 (*such as*), both of which can lead a clause. When this Chinese syntactic feature was copied in the use of the English counterpart *as*, we saw the above syntactic error.

Yet such a copied L1 syntactic section could not be found in the other half of errors. For example, the L1 counterpart of *trivial* was 琐碎(*的*), which, like the former, generally could be not be used as a noun in Chinese. So the syntax section of the wrongly-used L2 word was not copied from that of its L1 equivalent. Here, the
adjective *trivial* might have been mistaken as the noun *trivia*, thus copying its syntactic property. Copying L1 syntactic features was not found in the two cases of the same problematic parallel structure of adjectives, i.e., *farsighted and academic decision-makers*. Such a structure is not acceptable in Chinese, either. Although a copied L1 syntactic section was not found in each of the fourteen cases, a lack of certain L2 syntactic property was detected in the internal structure of all the integrated items.

The observation of the lookup process showed that the language-related errors tended to occur during the stage of information integration when an appropriate item was incorporated in a wrong way into the target text. Another factor conducive to consultation failures was the neglect of the information crucial to the successful integration of the newfound item when reading the looked-up entry. Here, carelessness seemed to be a distinctive behavioral feature, yet behind this negligence was the lack of the awareness of the relevant inflectional or syntactic restrictions. Such awareness was essential for performing more attentive consultation acts to avoid language-related errors.

### 7.2.4 Summary

First of all, the above examination of the lexical mistakes confirmed Hypothesis 3B about the existence of an empty space in the internal structure of the erroneous items. Such vacant sections were found in semantics, syntax and morphology but not in orthography. In terms of semantics, vacancies were detected in propositional, presupposed, expressed and evoked meaning of the erroneous items.

Second, the composition of the lexical mistakes was shown in the above analysis. Nearly two thirds involved some defect in their truth value; and, with a couple of cases found deficient in evoked and expressed meaning, they made meaning-related errors the largest group of all. Collocation-related errors accounted for about one fifth of the total, constituting a remarkable proportion. Morphological and syntactic errors added up to about one seventh of the total, making the language-related
mistakes a noteworthy error type. Besides, such makeup was similar among the three groups of informants.

Third, efforts were made in investigating the causes of the lexical mistakes. As all the erroneous items had a vacant space in their internal structure, it could be said that the fundamental cause for lexical errors was the lack of awareness of certain restrictions of the entry. However, an in-depth analysis of different error types revealed the specific contributory factors. Nearly half of the cases witnessed particular properties in the entry copied from the L1 counterpart; failure in grasping the metaphorical and instantial meaning also brought about a large number of mistranslations; other infrequent factors included the mix-up of similar L2 items and inaccurate paraphrasing.

Last, by relating the consultation-induced errors to the lookup process, we saw the consultation behaviors that were likely to bring about lexical errors, such as selecting an inappropriate problem word, only seeking literal correspondence, only confirming the sought item as the translation equivalent, neglecting certain properties of the entry, overlooking some crucial information in the looked-up entry, and misusing an appropriate item in the target text.

7.3 Summary of Chapter 7

By addressing the corresponding hypotheses, this chapter answered Research Question (Q3) about the causes of unsuccessful lexical consultation in translation. The examination of different types of erroneous items enabled us to see the lack of certain specifications in their in their internal structure while the study of the unsuccessful lookup efforts showed us various consultation moves liable to produce undesirable results in the translation. The defects found in the properties of the lexical items and the lack of awareness of particular restrictions during the consultation process all pointed to an empty space in the internal structure of the entry.

A detailed dissection of the lexical mistakes revealed two major contributory factors
to unsuccessful consultation. In about half of the cases, the empty space of an erroneous English item was occupied by the corresponding section of its Chinese translation equivalent. The misunderstanding of the original metaphorical or instansial meaning also gave rise to a considerable number of mistakes. Besides, the classification of the lexical mistakes showed that their composition was similar to the recurrent pattern detected in the study of the consultation effects and the problems addressed through lookup (see Sections 5.1 and 6.1).

Moreover, a close analysis of the lookup process enabled us to pin down the faulty moves leading to lexical mistakes in the translated text. From the perspective of consultation behavior, we learned how lexical errors came into being and how the contributory factors were manifested at specific lookup stages. Moreover, we also saw what could be done to avoid the lexical errors through a contrastive study of the successful and unsuccessful consultation attempts.

In a word, this chapter defined the nature of the lookup-induced lexical errors, identified the contributory factors to them, diagnosed the manifestations of these factors in consultation process, and proposed possible preventive measures.
Chapter 8
Conclusion

This chapter concludes the present thesis on the developmental pattern of lexical consultation by Chinese students in translation into English. Section 8.1 gives a summary of the major findings with reference to the research questions. Section 8.2 outlines the implications of this study in relation to its theoretical contribution to the research on lexical consultation in translation, and its practical application to translation teaching. Last, Section 8.3 discusses the limitations of this thesis and provides some suggestions for further research.

8.1 Summary of Major Findings

The main findings of this thesis are summarized in conjunction to the Research Questions.

(Q1) What are the effects of lexical consultation on translation at different levels of learning?

This question was first answered by studying the effect of consultation made by all the informants as a whole sample. The analysis of the lookup-induced changes made to the translated texts found that lexical consultation brought about a positive effect on translation. Such an effect was achieved mainly through more accurate and comprehensive conveyance of the original meaning. Improvement in collocation and language quality also made noticeable contribution to the beneficial effect. Besides, a considerable proportion of the consultation-induced changes produced zero effect on the translation as they neither improved nor impaired the target text. In contrast, the negative impact was rather limited. Moreover, a recurrent pattern was detected in
the examination of the consultation-induced changes bringing about different effects—a large majority of them were related to meaning and a noteworthy proportion involved collocation and language norms respectively. Such a “meaning-dominated” pattern revealed the exact makeup of various effects and the types of lexical problems that were worked on, cleared up, or left unsolved in the consultation attempt.

Then, the above research question was addressed by conducting a between-group study of the consultation effect. It was found that from the novice to the advanced level, there was a gradual decrease in the effect of lexical consultation in terms of the lookup-induced changes, and a negative correlation was found between the effect of consultation and translation competence—the better the competence, the fewer the lookup-induced changes. While the positive and negative effect of consultation did not vary significantly among the three groups, there was a gradual decrease in the zero-effect lookup from the novice to the advanced level, which means that the better the competence was, the less fruitless consultation there would be. Third, the number of failed attempt to correct a lexical mistake through consultation differed significantly among the three groups and the informants with better competence made fewer attempts of this kind. Last, the success and failure rates of consultation correlated with translation competence—the more competent translators tended to have a higher success rate and a lower failure rate.

(Q2) What are the characteristics of lexical consultation at different levels of translation learning?

The second research question was tackled first by examining between-group differences in the lexical problems addressed through consultation. In terms of quantity, the novice group worked on much more language- and meaning-related problems than the advanced group, with the intermediate group staying middling; but no significant difference was found in the number of collocation-related problems among the three groups. In terms of proportion, the novice learners had a much higher percentage of language-related problems than the advanced learners.
Although a modest increase was observed in the percentages of meaning- and collocation-related problems from the novice to the advanced level, the differences were not statistically significant among the three groups. It was also discovered that informants with better competence tended to have a smaller number of language- and meaning-related problems as well as a lower percentage of language-related problems.

Research Question (Q2) was also answered through a consultation process study. A quantitative analysis showed that the advanced learners stood out in determining problem word and internal search. Consulting about a smaller quantity of problem words of various kinds, they conducted fewer searches for meaning- and language-related information but had more searches for collocation-related information. With regard to information integration, the intermediate group had more successful cases and the novice group had considerably more failed attempts. The novice learners also had a much lower success rate and a much higher failure rate of information integration. Then, a qualitative study found that with a reduced consultation need and fewer lexical voids to fill in, the advanced group also consulted to refine their wording, and they showed more desirable consultation behaviors such as having more perseverance in lexical search, going beyond definition search and focusing on larger units. In contrast, the novice group had more naïve lexical assumptions, such as one-to-one lexical correspondence and overgeneralization of the restricted and conditional cross-language equivalence at lexical level. In addition, some progressive changes were discovered from the novice to the advance level. There was a gradual decrease in the quantity of problem words, cases of failed integration, searches for meaning- and language-related information, but there was a gradual increase in the quantity and proportion of searches for collocation information.

(Q3) What are the causes of unsuccessful lexical consultation in translation?

The third research question was first examined by tracing the faulty moves that led to failed consultation attempts. Selection of inappropriate problem words, extraction
of improper information and misuse of the extracted item were all liable to cause consultation failures. Behind such moves was the neglect of certain properties of the lexical item that were essential for it to be properly used. Besides, a contrastive study of the successful consultation attempts showed the behavioral features that might help avoiding the faulty moves or preventing them from causing lexical errors. They included more depth and width in lexical searches, better comprehension of the original text, and more perseverance, caution or carefulness.

An examination of the internal structure of the erroneous items revealed that empty spaces existed in the semantics, syntax and morphology sections of the entries but not in the orthography section; and in regard to semantics, empty spaces were found in all the four categories of meaning (Cruse, 1986). In view of these results, it can be said that the general cause for lexical errors was the lack of awareness of certain restrictions of the entry. An in-depth analysis revealed that two major contributory factors behind the lexical mistakes were the copying of particular properties of the Chinese (L1) translation equivalent to the English (L2) item, and the misunderstanding of the original metaphorical or instantial meaning. Other uncommon factors included the confusion between similar L2 items and imprecise paraphrasing.

Moreover, the makeup of the lexical errors was found to be similar to the recurrent pattern reported above—the overwhelming majority of those errors was meaning-related and a noticeable proportion was language- and collocation-related respectively. Also, by tracing back to the lookup process, the consultation behaviors likely to lead to lexical errors were pinned down, which included choosing an improper problem word, only seeking literal correspondence, only confirming the sought item as the translation equivalent, neglecting certain properties of the entry, overlooking the essential information in the entry, and using an appropriate item in a wrong way.
8.2 Implications of the Study

The implications of this study are discussed from the theoretical and practical perspectives in the following two subsections.

8.2.1 Theoretical Implications

The present study has made contributions to the research on lexical consultation in translation by filling some of the gaps left by the previous studies. To be specific, this project has defined the effect of consultation, identified causes of failed reference attempts and described the development of the translator’s lookup ability. Moreover, this thesis has also provided a solid theoretical framework and a useful developmental perspective for studying the translator’s lookup behavior.

This research has provided a detailed insight into lexical consultation in translation and the findings have answered some key questions about translators’ lexical consultation. The definition of the general effect of the lookup attempts on translation has confirmed the positive role lexical consultation plays in translation. More important, the description of the constituents of different types of effects has informed us of the specific aspects in which lexical consultation affects the quality of translation. In the analysis of the causes of failed consultation, the identification of the empty space and borrowed Chinese properties in the internal structure of the erroneously-used English items has shed light on some root causes of the lookup-induced mistakes, such as the same-translation effect and misreading of the source-text message. As lexical consultation has been recognized as an important component of translation process (Roberts, 1997; Newmark, 1998; Varantola, 1998; White et al., 2008), the above contributions would facilitate the understanding of the translation activity.

The findings from the stratified analysis of the informants’ lookup attempts in this study have advanced the knowledge about the maturing process of the lexical consultation ability. The between-level contrast of different consultation effects has
revealed the disparities in the build-up of the ability to solve lexical problems through consultation. The gradual changes observed from the novice to the advanced level and the correlations found between translation competence and lookup performances have shown the growth of various aspects of the consultation ability. Furthermore, the characterization of the lookup process of the three groups has enabled us to see some behavioral features of lexical consultation typical of each competence level. Apart from the above trends and differences, the recurrent “meaning-dominated” pattern found in the consultation effect, reference need and lookup-induced errors has shown certain constant features throughout the development of the lexical consultation ability. As this ability is an acknowledged component of translation competence (Beeby, 2000; PACTE, 2000, 2003, 2005; Göpferich & Jääskeläinen, 2009), the above findings also contribute to the understanding about the development of translation competence.

The present thesis has made theoretical and methodological contributions to the studies of lexical consultation in translation by establishing an integrated framework that absorbs theories from translation research, lexicography and ESL studies (see Chapter 3). Bell’s (1991) model of translation process, Hartmann’s (2001) model of the consultation process and Jiang’s (2000) model of L2 lexical development were assimilated into a solid theoretical basis for this empirical study. Such an integrated framework not only covers the whole lookup process, but also highlights the translation activity as the context of lexical consultation. It allows a systematic and detailed examination of all the major steps taken during the consultation process as well as the results of lookup as shown in the translated text. Methodologically, the descriptive and analytical instruments derived from this framework were found powerful and effective in the present research. Moreover, the theoretical model is also adaptable to suit studies of lexical consultation process with different research focuses. For instance, if a project aims to study lexical lookup in direct translation, the consultation model can be placed parallel with lexical search mechanism and frequent lexis store in syntactic analyzer of Bell’s (1991) translation process scheme.
(see Sections 3.1.1 and 3.1.2). Or, if the participants are inexperienced users of lexical consultation sources or the translation task demands careful choice of reference sources, the researcher can make selecting reference sources a focal point in the adapted flow chart of consultation process (see Section 3.2.2).

Furthermore, this study has provided a useful developmental perspective to look at the lexical consultation in translation. Apart from seeing the translator’s lookup ability as an acquirable and developable competence at the macro level, the present thesis also regards the search and use of the lexical item extracted from the reference source as a process of lexical acquisition. By adopting the theory of L2 lexical development (Jiang, 2000, 2004b), a probe was made into the internal structure of the erroneously-used entries to see the empty space in their internal structure. Such a developmental approach has been found effective and enlightening in analyzing the effect of consultation on translation and detecting the causes of lexical errors as the result of consultation.

8.2.2 Practical Recommendations

The practical implications of this research are pedagogical. Based on the findings of this study, the following recommendations are made on translation training in terms of general principles, timing and focal points for teaching.

Since lexical consultation is found to have produced a positive effect on translation, it should be encouraged in translation training. With the negative impact making up only a small part of the total effect, the advantages brought about by lexical consultation greatly outweigh the disadvantages. If we take the translator’s consultation as a trial-and-error process of lexical development, even the failed lookup attempts are meaningful to vocabulary building if negative feedback can be given by the teacher to cut off the false correspondence established between the wrongly-used L2 items and their counterparts in L1. Moreover, not considering the time cost, the lookup-induced zero-effect replacement of a properly-used item by a
synonymous item could be seen as conducive to enriching the trainee’s L2 expression in terms of word variation.

The findings about the development of lexical consultation in translation provide a basis for teachers to decide when to teach what in translation training. For instance, as the novice students tend to use a narrower range of reference sources and have more hasty lookups, imparting knowledge about the variety of consultation sources and the importance of deep-going research in lookup at the early stage of translation training can help furthering the beginners’ breadth and depth in lexical search, speeding up their acquisition of the desirable consultation features found in the students from higher level. Since refining the word choice through consultation is discovered mainly among the students from the advanced level when language- and propositional-meaning-related problems subside, the teacher may start to teach the trainees at the intermediate level about how to make use of reference sources for weighing their words in translation.

The present study has also made manifest some teaching focuses in developing the students’ ability of lexical lookup. As the recurrent “meaning-dominated” pattern is found in consultation at all levels, the teacher can place a heavy emphasis on how to establish correspondence in meaning, especially in propositional meaning, through lexical lookup, and at the same time remind the students of the importance of observing the language rules and collocation norms. Guidance regarding to making full use of lexical reference sources and having more breadth and depth in vocabulary search are also essential for the students, which can be given through case analysis of desirable and undesirable lookup behaviors. To prevent consultation-induced lexical errors, teaching efforts can be made in enhancing the translation trainees’ notion of instantial meaning and awareness of the restricted and conditional nature of lexical equivalence cross languages. Such knowledge is not only important for effective lexical consultation, but also essential for production of quality translation. In this regard, the contrastive study of the same-translation pair and their L1 counterpart should be an effective way to enable the students to see
their similarities and differences in the context of the translated text. Here, the introduction of the adapted internal structure of the lexical entry (see Section 3.3.3) can not only provide a powerful analytical tool in the above-mentioned contrastive word studies but also help the trainees gain a proper perception of lexical equivalence in translation.

8.3 Limitations and Suggestions for Further Research

There are a number of limitations in this research. One of them is the comparatively limited sample size in the observation of consultation process, which made it impossible to test the significance of the between-group differences in lookup behaviors. Another limitation was the rather artificial division of the three competence levels, especially in the experiment of the effect of consultation. To meet the requirement for significance testing, the 90 informants were all made use of after being equally divided into three groups of thirty according to their translation scores, whereas ideally, systematic sampling of a larger population would make it possible to skip the informants near the division lines, thus excluding the features shared by two neighboring groups. Last, this thesis did not look into the informants’ attitudes towards lexical reference sources, nor did it fully explore the informants’ perceptions about lexical correspondence across languages and equivalence in translation. A detailed examination of these factors may provide valuable clues for better understanding their consultation behaviors and effects.

Since only a few scholars have focused on the development of the translator’s lexical consultation, further research incorporating a similar design to that of this study would be of value. It would re-examine the findings of the present research as well as enrich the literature on lexical consultation in translation. A study of a different population, for example, may produce new results that supplement, amend or challenge the findings of this thesis. Besides, it is also of theoretical and practical significance to investigate the lexical consultation in translation between language pairs other than the one studied here, which may involve lexical problems unique to
that particular pair. For instance, translation between more related languages tends to witness the problem of “false friends of a translator”, which is worth studying as a cause of both consultation and consultation failure in translation (Bogaards, 1998). According to Nesi (2000), language background has a bearing on the pattern of lexical consultation for production purpose. Therefore, expanding the research to other language pairs would produce new findings about the translator’s lexical consultation and at the same time provide particular enlightenments to the teaching of translation between the studied pair.

Another suggestion for further research is to combine the examination of the consultation process and effects with the study of the translator’s understanding of and attitude towards reference sources, lexical correspondence between languages and equivalence in translation. Some of these perceptions were touched upon but not thoroughly investigated in this thesis, and it was felt that they had strong bearing on the decisions made during the lexical consultation. Such notions and attitudes behind consultation behaviors were reported in previous studies, such as L2 students’ naïve translation principles and assumptions about dictionaries (Krings, 1986) and “old-hand” translators’ skeptical attitude towards dictionaries (Jääskeläinen, 1989; Fraser, 1999). A study of such conceptions, especially their development and influence on the lookup acts, can help gain more insight into the maturing process of the translator’s lexical consultation ability.

In spite of its high cost in time and energy, a longitudinal study has its incomparable advantages over the cross-sectional research in exploring the development of translation students’ lexical consultation ability. Making use of the convenience offered by long-term translation training programs, the researcher of a longitudinal study is able to track the changes in the same informants over a relatively long period of time. In this way, the differences recorded through repeated observation are less likely to be the results of individual differences and thus more accurate than the findings of a cross-sectional study, which compares groups of different individuals with same characteristics (Carlson, Buskist, Enzle, Heth & Alder, 2009).
Almost thirty years ago, Krings (1986) emphasized the importance of longitudinal studies to the understanding of the gradual development of translation competence. But so far, there have been just a few such efforts (e.g., Göpferich, 2009; Hansen, 2010). Nevertheless, it is still hoped that there will be longitudinal studies on lexical lookup in translation so as to give a full picture of the gradual build-up of the translator’s ability to solve lexical problem through consultation.

Last, with regard to methodology, eye tracking is a recommendable tool for improving the reliability of data in the future studies. This increasingly popular research method can measure the translator’s point of gaze and fixation duration, which has already been adopted in many recent studies of translation process (e.g., Jakobsen & Jensen, 2008; Pavlović & Jensen 2009; Carl & Dragsted; 2012; Balling, Hvelplund & Sjørup, 2014). The heat maps and gaze plots produced by eye trackers can show us which part of the text the participant was reading and how long he had read it, whether the text was displayed on the computer screen or printed in a paper dictionary. So, the technology can help decide what kind of information was sought from the lexical reference sources during the internal search. The data thus gained can be combined with those collected through observation or retrospective protocol, thus enabling a more objective description of the consultation process.

Thanks to the growing body of literature on empirical studies of lexical consultation and translation process in the past three decades, much has been known about the translator’s lexical consultation as well as the strong and weak points of various research methodologies. Enlightened by such knowledge, the present thesis made a concentrated and systematic effort in answering some basic questions that remained unanswered in the previous studies. It is hoped that future studies in this area, from new perspectives and with better technology, can re-examine the findings of this exploratory project and contribute to a fuller understanding of lexical consultation in translation.
References


---

3 Reference works in Chinese are documented in their original Chinese bibliographical information, followed by the official English translation of the article/publication title in square brackets if available. Where no official English translation of the article/publication title is provided in the original work, the translation is provided by the researcher of this thesis.


Huang, Y. (2011). 黄友义 著：中国特色中译外及其面临的挑战与对策建议
[Inverse translation with Chinese characteristics: Challenges and strategies].
中国翻译 [China Translators’ Journal], (6), 5-6.


In S. Tirkkonen-Condit & R. Jääskeläinen. (Eds.), Tapping and mapping the
processes of translation and interpreting (pp. 27-52). Amsterdam: John
Benjamins.

protocols of translation. Unpublished Pro Gradu Thesis, University of
Joensuu.

non-professional translation: A think-aloud protocol study. In S.
Tirkkonen-Condit & S. Condit (Eds.), Empirical studies in translation and
linguistics (pp. 175-200). Joensuu: University of Joensuu.


In S. Tirkkonen-Condit & R. Jääskeläinen (Eds.), Tapping and mapping the
processes of translation and interpreting: Outlooks on empirical research (pp.
71-82). Amsterdam: John Benjamins.

bibliography. Target, 14(1), 107-136.

Windle (Eds.), The Oxford handbook of translation studies (pp. 123-135).
Oxford: Oxford University Press.

Jakobsen, A. L. (2003). Effects of think aloud on translation speed, revision, and
segmentation. In F. Alves (Ed.), Triangulating translation: Perspectives in
process oriented research (pp. 69-95). Amsterdam: John Benjamins.


Appendix A

Questionnaire and its English Translation

参与者情况问卷调查

姓名___________

1. 到现在为止，你做汉译英已经有多长的时间？______。
   1. 半年  2. 一年  3. 两年  4. 三年  5. 四年  6. 五年或以上

2. 你上过几个学期的翻译实践课程？_____学期。

3. 你上过几个学期的汉译英课程？_____学期。

4. 在你上的翻译课中，是否有讲授怎样使用词典等工具书的内容？______。
   1. 没有  2. 零星提到过  3. 有一些，但不系统  4. 有较系统的介绍

5. 如果①表示“很少”，⑦表示“频繁”，汉译英时，你在查阅词汇的频率是______。
   很少①……②……③……④……⑤……⑥……⑦频繁

衷心感谢你的参与！
Participant Background Questionnaire

Name__________

1. How many years have you done translation from Chinese into English?

__________.

1. Half 2. One 3.Two 4.Three 5. Four 6. Five or over five

2. For how long have you taken courses in translation practice?

__________ semester(s).

3. For how long have you taken courses on inverse translation?

__________ semester(s).

3. Have you been taught how to use reference books in your translation course?

__________.


5. If ① means very low and ⑦ means very high, how would you rate the frequency of your lexical consultation when translating from Chinese into English?

__________.

Very low①……②……③……④……⑤……⑥……⑦Very high

Thank you for your participation!

4 The translation is provided by the researcher.
### Appendix B

**NEATI Grading Standards and Its English Translation**

笔译考试评分标准⁵

<table>
<thead>
<tr>
<th>档次</th>
<th>评分标准</th>
</tr>
</thead>
</table>
| **第一档  21—25 分** | 完成翻译任务，基本无漏译和误译。  
准确理解原文，完整表达原文的内容和含义。  
译文自然流畅，表达得体。  
译文语言规范，用词准确。 |
| **第二档  16—20 分** | 较好完成翻译任务，有个别漏译和误译。  
正确理解原文，比较完整地表达原文的内容和含义。  
译文基本自然、通顺。  
译文语言基本规范，用词基本正确，语言错误较少。 |
| **第三档  11—15 分** | 基本完成翻译任务，有部分漏译和误译。  
大体理解原文，基本表达原文的内容和含义。  
译文不够自然、通顺。  
译文有一些语言错误。 |
| **第四档  6—10 分** | 部分完成翻译任务，漏译和误译较多，严重影响对全文的理解。  
对原文理解不够，仅部分表达原文的内容和含义。  
译文不自然，不通顺。  
译文语言错误较多。 |
| **第五档  0—5 分** | 基本未完成或未完成任何翻译任务。 |

---

⁵ Taken from *Guidelines for National Accreditation Examinations for Translators and Interpreters (NAETI)* (National Education Examinations Authority of the Ministry of Education, 2008, p. 56).
### NEATI Standards of Grading for Translation

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Band 1</strong></td>
<td>21—25 points</td>
</tr>
<tr>
<td>Band 1</td>
<td>• The translation task is fully completed, with few omissions and mistranslations.</td>
</tr>
<tr>
<td></td>
<td>• The source text is accurately understood, with the original information fully transferred.</td>
</tr>
<tr>
<td></td>
<td>• The translated text is natural and smooth, in an appropriate style.</td>
</tr>
<tr>
<td></td>
<td>• Language norms are observed, with accurate diction.</td>
</tr>
<tr>
<td><strong>Band 2</strong></td>
<td>16—20 points</td>
</tr>
<tr>
<td>Band 2</td>
<td>• The translation task is satisfactorily completed, with a few omissions and mistranslations.</td>
</tr>
<tr>
<td></td>
<td>• The source text is correctly understood, with the original information satisfactorily transferred.</td>
</tr>
<tr>
<td></td>
<td>• The translated text is basically natural and smooth.</td>
</tr>
<tr>
<td></td>
<td>• Language norms are basically observed, with correct diction and a few errors.</td>
</tr>
<tr>
<td><strong>Band 3</strong></td>
<td>11—15 points</td>
</tr>
<tr>
<td>Band 3</td>
<td>• Translation task basically completed, with some omissions and mistranslations.</td>
</tr>
<tr>
<td></td>
<td>• The source text is generally understood, with the original information roughly transferred.</td>
</tr>
<tr>
<td></td>
<td>• The translated text is barely natural and smooth.</td>
</tr>
<tr>
<td></td>
<td>• There exist some language errors.</td>
</tr>
<tr>
<td><strong>Band 4</strong></td>
<td>6—10 points</td>
</tr>
<tr>
<td>Band 4</td>
<td>• Translation task is partly completed, with plenty of omissions and mistranslations, making the translation almost unintelligible.</td>
</tr>
<tr>
<td></td>
<td>• The source text is barely understood, with the original information partly transferred.</td>
</tr>
<tr>
<td></td>
<td>• The translated text is not natural or smooth.</td>
</tr>
<tr>
<td></td>
<td>• There exist plenty of language errors.</td>
</tr>
<tr>
<td><strong>Band 5</strong></td>
<td>0—5 分</td>
</tr>
<tr>
<td>Band 5</td>
<td>• Translation task is barely or not completed.</td>
</tr>
</tbody>
</table>

---

6 The translation is provided by the researcher.