ACQUISITION OF THE CHINESE RESULTATIVE VERB COMPLEMENTS BY LEARNERS OF CHINESE AS A FOREIGN LANGUAGE: A LEARNER CORPUS APPROACH

A Dissertation in
Applied Linguistics
by
Jie Zhang

© 2011 Jie Zhang

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

December 2011
The dissertation of Jie Zhang was reviewed and approved* by the following:

James P. Lantolf  
Greer Professor of Language Acquisition and Applied Linguistics  
Dissertation Advisor  
Chair of Committee

Karen E. Johnson  
Kirby Professor in Language Learning and Applied Linguistics  
Graduate Officer for Applied Linguistics

Xiaofei Lu  
Assistant Professor of Applied Linguistics

Matthew E. Poehner  
Assistant Professor of World Languages Education and Applied Linguistics

*Signatures are on file in the Graduate School.
ABSTRACT

The Chinese resultative verb complements (RVCs) are an important and challenging verb compound structure for English-speaking CFL learners to acquire. Although some research has been conducted on the acquisition order of directional complements and the event structure of RVCs, no research has been conducted that systematically investigates CFL (Chinese as a Foreign Language) learners’ acquisition of RVCs as a coherent construction. Through analysis of a CFL learner corpus, this dissertation describes, analyzes and explains how CFL learners at the intermediate and advanced levels acquire the Chinese RVCs. Specifically, it looks at the learners’ lexical, syntactic and semantic choices of the different types of RVCs, and identifies learners’ sources of difficulty in acquiring the different types of RVCs.

To address the research questions, a learner corpus of CFL learners was constructed. The corpus consisted of essays written by CFL learners at three proficiency levels: lower-intermediate (LIL), higher-intermediate (HIL), and advanced (AL). A collection of essays written by Chinese native speakers was used as baseline for learner performance. All instances of RVCs were identified and annotated. All deviations of RVCs were tagged. The findings show that although RVCs were found to be not particularly frequent in the learners’ data, the frequency of RVCs grew steadily as the learners’ overall language proficiency improved. Under use of DVCs (directional verb complements) and RVCSs (result-state verb complements) was observed among the learners, and a slight over use of RVCCs (completive verb complements) was observed in the advanced learners. The acquisition of the different types of RVCs reveals very different developmental patterns in terms of lexical diversity, syntactic complexity, semantic expressiveness, and linguistic accuracy. Different sources of difficulty in acquiring the different types of RVCs are identified. Although the three types of RVCs have developed differently in the learners, some important commonalities emerged from the analysis. It suggests that the syntactic
and semantic features of the RVCs can be mastered fairly early on, whereas the lexical diversity of the RVCs seems to be a difficult area for acquisition. This shows that in the acquisition of the Chinese RVCs, the mastery of the lexical dimension is not developed hand in hand with that of the syntactic or semantic dimensions. The acquisition of the lexical dimension is much more challenging and takes longer to acquire than the syntactic or the semantic dimension.

The dissertation contributes in important ways to a deeper understanding of the Chinese RVCs and Chinese compound structures in general. Instructional approaches are discussed that cater to the characteristics of the different types of RVCs.

**Key words**: Chinese language acquisition, resultative verb complements, learner corpus analysis, learners of Chinese as a foreign language
# TABLE OF CONTENTS

LIST OF FIGURES..................................................................................................................viii

LIST OF TABLES....................................................................................................................x

ABBREVIATIONS ..................................................................................................................xiii

ACKNOWLEDGEMENTS ......................................................................................................xiv

Chapter 1  Introduction ...............................................................................................................1

  1.1 Background ....................................................................................................................1
  1.2 Statement of the problem ...............................................................................................2
  1.3 Research gap ..................................................................................................................5
  1.4 Objectives and research questions .................................................................................6
  1.5 Significance of the study ...............................................................................................7
  1.6 Organization of the dissertation .....................................................................................8

Chapter 2  Review of the literature ...........................................................................................11

  2.1 Definition and types of RVCs ......................................................................................11
    2.1.1 DVCs ................................................................................................................14
    2.1.2 RVCCs .............................................................................................................19
    2.1.3 RVCSs ...............................................................................................................22
    2.1.4 Shared properties .............................................................................................23
  2.2 RVCs and event structure ............................................................................................26
    2.2.1 Encoding motion ...............................................................................................26
    2.2.2 Encoding state change .....................................................................................28
  2.3 RVCs and aspect ..........................................................................................................29
    2.3.1 RVCs and situation aspect .................................................................................30
    2.3.2 RVCs and viewpoint aspect ..............................................................................33
  2.4 L1 acquisition of RVCs ...............................................................................................36
  2.5 L2 acquisition of RVCs ...............................................................................................38
    2.5.1 L2 acquisition of DVCs .....................................................................................39
    2.5.2 L2 acquisition of RVCs .....................................................................................43
  2.6 Pedagogical presentations of RVCs .............................................................................45
    2.6.1 Presentations of different types of RVCs ..........................................................46
    2.6.2 Presentations of verb complements ...................................................................48
    2.6.3 Presentations of meaning polysemy ..................................................................49
    2.6.4 Summary ..........................................................................................................53
  2.7 Summary ......................................................................................................................54

Chapter 3  Research methods ....................................................................................................56

  3.1 Learner corpora and the analysis of learner language .......................................................56
3.1.1 Corpus linguistics ...........................................................................................................57
3.1.2 Learner corpus analysis .................................................................................................60
3.1.3 LCA and Chinese as a second language .......................................................................64
3.1.4 LCA and the acquisition of RVCs ..............................................................................66
3.2 Research design ................................................................................................................67
3.2.1 Data sources and data collection ..................................................................................67
3.2.2 Corpus compilation .......................................................................................................74
3.2.3 Annotation .....................................................................................................................75
3.2.4 Error tagging ................................................................................................................79
3.3 Overall distribution of RVCs ............................................................................................80

Chapter 4 CFL learners’ acquisition of directional verb complements (DVCs) ..................85
4.1 Distribution of DVCs .........................................................................................................85
4.2 Quantitative analysis .........................................................................................................88
4.2.1 Lexical diversity ..........................................................................................................88
4.2.2 Syntactic complexity ....................................................................................................94
4.2.3 Semantic expressiveness .............................................................................................96
4.2.4 Summary .....................................................................................................................99
4.3 Qualitative analysis ..........................................................................................................100
4.3.1 The LILs ....................................................................................................................100
4.3.2 The HILs ....................................................................................................................104
4.3.3 The ALs ....................................................................................................................108
4.4 Deviations of DVCs .........................................................................................................110
4.4.1 Omission ....................................................................................................................111
4.4.2 Misuse .......................................................................................................................116
4.4.3 Misordering ................................................................................................................119
4.4.4 Deviations and learners’ language proficiency .........................................................121
4.5 Summary ........................................................................................................................122

Chapter 5 CFL learners’ acquisition of completive resultative verb complements (RVCCs) ..........................................................126
5.1 Distribution of RVCCs ......................................................................................................126
5.2 Quantitative analysis .........................................................................................................130
5.2.1 Lexical diversity ..........................................................................................................131
5.2.2 Syntactic complexity ...................................................................................................135
5.2.3 Aspect ........................................................................................................................137
5.3 Qualitative analysis .........................................................................................................143
5.3.1 The case of dao ..........................................................................................................143
5.3.2 The case of wan ..........................................................................................................146
5.3.3 The case of individual learners ..................................................................................148
5.4 Deviations of RVCCs ......................................................................................................151
5.4.1 Omission or overuse of the V2 ..................................................................................153
5.4.2 Misuse .......................................................................................................................157
5.4.3 Potential form related deviations .............................................................................160
5.5 Summary ........................................................................................................................162
Chapter 6  CFL learners’ acquisition of result-state resultative verb complements (RVCSs) .........................................................................................................................165

6.1 Distribution of RVCSs ...............................................................................................165
6.2 Learners’ choices of RVCSs .....................................................................................168
   6.2.1 Lexical diversity ..............................................................................................168
   6.2.2 Syntactic complexity .......................................................................................177
   6.2.3 Aspect .............................................................................................................180
6.3 Deviations of RVCCs ................................................................................................183
   6.3.1 Misuse .............................................................................................................185
   6.3.2 Omission .........................................................................................................188
6.4 Summary ....................................................................................................................190

Chapter 7  Conclusions ............................................................................................................192

7.1 Summary of findings ..................................................................................................192
7.2 Implications ...............................................................................................................195
   7.2.1 Theoretical implications ..................................................................................195
   7.2.2 Pedagogical implications .................................................................................197
   7.2.3 Methodological implications ...........................................................................201
7.3 Limitations ................................................................................................................202
7.4 Future directions .......................................................................................................203

Appendix A  Sample essay from the lower-intermediate learners........................................205
Appendix B  Sample essay from the higher-intermediate learners..........................................206
Appendix C  Sample essay from the advanced learners..........................................................207
Appendix D  Sample essay from the Chinese native speakers .................................................208
Appendix E  Informed consent form for social science research.............................................209
Appendix F  Participant questionnaire .....................................................................................211
Bibliography ...........................................................................................................................212
LIST OF FIGURES

Figure 3-1: Screen shot of AntConc concordance lines .............................................................76
Figure 3-2: Screen shot of AntConc concordance lines with error tags .....................................80
Figure 3-3: Frequency of RVCs ..................................................................................................81
Figure 3-4: Distribution of RVCs (token frequency) ..................................................................82
Figure 3-5: Distribution of unique RVCs ..................................................................................83
Figure 4-1: Distribution of unique DVCs ..................................................................................86
Figure 4-2: Distribution of DVCs (token frequency) ..................................................................87
Figure 4-3: Syntactic patterns of DVCs (token measure) ............................................................95
Figure 4-4: Semantic categories of DVCs (token measure) .......................................................97
Figure 4-5: Semantic categories of DVCs (unique DVCs) ........................................................99
Figure 5-1: Distribution of unique RVCCs ..............................................................................128
Figure 5-2: Distribution of RVCCs (token frequency) ..............................................................129
Figure 5-3: V1/V2 ratios of DVCs and RVCCs .........................................................................135
Figure 5-4: Syntactic patterns of RVCCs (token measure) .......................................................136
Figure 5-5: Distribution of V1 types ........................................................................................138
Figure 5-6: Distribution of the sentential aspect .....................................................................140
Figure 6-1: Distribution of unique RVCSs ..............................................................................166
Figure 6-2: Distribution of RVCSs (token frequency) ..............................................................167
Figure 6-3: V1/V2 ratios of the three types of RVCs ..................................................................169
Figure 6-4: Distribution of V2 types ........................................................................................172
Figure 6-5: Distribution of V1 types ........................................................................................176
Figure 6-6: Syntactic patterns of RVCSs by percentage (token measure) ...............................178
Figure 6-7: Distribution of the sentential aspect .....................................................................181
Figure 6-8: Accuracy rates of different types of RVCs .......................................................... 184

Figure 7-1: Semantic network of \textit{V-shang} ................................................................. 199
**LIST OF TABLES**

Table 2-1: Directional complements .........................................................................................14

Table 2-2: Completive complements identified by different authors. ....................................20

Table 2-3: Situation types .........................................................................................................31

Table 2-4: Complements introduced in the textbooks. .........................................................49

Table 3-1: Writing topics for the CFL learners of lower-intermediate level. .........................69

Table 3-2: Writing topics for the CFL learners of higher-intermediate level. .......................71

Table 3-3: Size and composition of the learner corpus ..........................................................75

Table 3-4: DVC-specific categories .......................................................................................78

Table 3-5: RVCC/RVCS-specific categoris ...........................................................................78

Table 3-6: Error tagging scheme ..........................................................................................79

Table 3-7: Frequency of RVCs ............................................................................................81

Table 3-8: Distribution of RVCs (token measure) .................................................................82

Table 3-9: Distribution of unique RVCs ................................................................................82

Table 4-1: Distribution of DVCs. ..........................................................................................86

Table 4-2: Distribution of DCs. .............................................................................................89

Table 4-3: DCs produced by the learners and the NSs (token measure) .................................90

Table 4-4: V1s that collocate with DCs (type measure) ......................................................93

Table 4-5: Component diversity of DVCs. ..............................................................................94

Table 4-6: Syntactic patterns of DVCs (token measure) ......................................................94

Table 4-7: Semantic categories of DVCs (token measure) ..................................................97

Table 4-8: Semantic categories of DVCs (unique DVCs) .....................................................98

Table 4-9: Collocations of the DC lai ‘come’ produced by the LILs .......................................102

Table 4-10: Typical usages of the DC qi-lai ‘rise’ by the LILs .............................................104

Table 4-11: Typical usages of the DC qi-lai ‘rise’ by the HILs. .............................................106
Table 4-12: Typical usages of the DC *lai* ‘come’ by the HILs ...................................................... 109
Table 4-13: Inappropriate uses of DVCs ............................................................ 111
Table 4-14: V1s used by the learners without DCs in obligatory occasions ......................... 116
Table 4-15: Inappropriate use of DVCs related to word order ................................................. 120
Table 5-1: Distribution of RVCCs ................................................................................. 127
Table 5-2: A list of complement verbs in RVCCs ....................................................... 131
Table 5-3: V2s produced by the learners and NSs (token measure) .................................... 133
Table 5-4: Collocates for the complement verbs ......................................................... 134
Table 5-5: Component diversity of RVCCs ................................................................. 134
Table 5-6: Syntactic patterns of RVCCs (token measure) ................................................. 136
Table 5-7: Distribution of V1 types ................................................................................ 138
Table 5-8: Distribution of the sentential aspect (token measure) ....................................... 140
Table 5-9: Collocations of the complement verb *dao* organized by V1 type .................... 144
Table 5-10: Collocations of the complement verb *wan* organized by V1 type .................. 147
Table 5-11: Inappropriate use of RVCCs ................................................................. 152
Table 5-12: A list of omitted target V2s ................................................................. 154
Table 5-13: A list of overused V2s ................................................................................ 157
Table 6-1: Distribution of RVCSs ................................................................................. 166
Table 6-2: Component diversity of RVCSs .................................................................... 169
Table 6-3: A list of V2s produced by the learners and NSs ............................................... 171
Table 6-4: Distribution of V2 types ................................................................................ 172
Table 6-5: RVCSs with the complement *hao* ‘good’ ..................................................... 174
Table 6-6: A list of V1s produced by the learners and NSs ............................................... 175
Table 6-7: Distribution of V1 types ................................................................................ 176
Table 6-8: Distribution of RVCS structures (token measure) ............................................. 178
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-9</td>
<td>Distribution of the sentential aspect (token measure)</td>
<td>181</td>
</tr>
<tr>
<td>6-10</td>
<td>Inappropriate use of RVCSs</td>
<td>184</td>
</tr>
</tbody>
</table>
ABBREVIATIONS

ASP = aspect marker
BA = Mandarin ba-construction marker
BEI = Mandarin passive marker
CL = classifier
DE = genitive (-de)
GUO = Mandarin experiential aspect marker
LE = Mandarin perfective marker
MM = modifier marker
NP = noun phrase
PASS = passive
PL = plural
QUES = question
SFP = sentence final particle
V = verb
ACKNOWLEDGEMENTS

The writing of this dissertation would not have been made possible without my professors, colleagues, friends and family.

My utmost heart-felt gratitude goes to my advisor Professor James P. Lantolf. He is a true scholar and a wonderful advisor. His thinking on second language acquisition and foreign language education has enormously influenced my views and research orientations. It was him who encouraged me to work on Chinese language acquisition and pursue a linguistic study of Chinese learners’ language use, which turned out to be a fascinating area of research that I deeply love, greatly enjoy, and want to pursue as my career. In the writing of the dissertation, his support, patience and always constructive advice has made my dissertation writing much easier than it could be.

I am grateful to Professor Xiaofei Lu for being my role model and mentor. His courses in corpus linguistics have introduced me to the brand-new field of a corpus-based approach to learner language analysis, which became my primary research approach. Coming from the same cultural background, Professor Lu has shared so much with me in the many discussions we had. His guidance made my life as a graduate student oriented, organized and focused. I am also indebted to Professor Karen E. Johnson and Professor Matthew E. Poehner for kindly serving on my dissertation committee. I thank them for the attention they paid to my research projects and for the many insightful discussions based on which this dissertation takes its current shape.

I came to Penn State to work on ESL. It took me two years to find my stronger interest in CFL (Chinese as a Foreign Language). The transition from ESL to CFL was by no means easy. My sincere thanks go to the professors and teachers who have helped me to make this transition possible. I am grateful to Professor Liana Chen for trusting me and giving me the opportunity of teaching Chinese in the Chinese program. I am indebted to her for introducing me to many
practical skills in Chinese instruction and generously supporting me in my data collection. I also
thank Ms. Rose Tan and Ms. Chunyuan Di for helping me with data collection, and the Chinese
students for giving me permission to use their essays. I would like to thank Professor Hongyin
Tao at UCLA and Professor Tao Ming at Concordia College for graciously sharing their data of
heritage learners with me. I want to acknowledge the HSK corpus constructed by Beijing
Language and Culture University for granting me access to their corpus.

I thank the Department of Applied Linguistics, Center of Language Acquisition, Mr. Gil
Watz and the College of Liberal Arts for the financial support they have provided me along my
dissertation writing. It is their generous support that have made possible for me to focus on my
dissertation project without worrying about financial situations. I am blessed with so many
friends who have been supportive and made my stressful graduate life less hectic. They include
my Chinese friends Yan Zhuang, Houxiang Li, Yingxian Wu, Sharon Shen and colleagues from
my home department of Applied Linguistics.

Last but not least, I want to thank my family: my husband, my son, my parents and sister.
I thank my husband for being loving, caring and being there for me no matter what. My son
Andrew has been a true inspiration and a constant source of joy. I thank my parents for the
sacrifice they have made and the support they have given me in my pursuit of an academic career,
and my sister for always looking on to me and providing the caring for our parents while I am
thousands of miles away from home. I love you all.
Chapter 1

Introduction

1.1 Background

A fast growing interest of teaching and learning Chinese in North America and worldwide has been witnessed over the past 10 years. According to the MLA national surveys on foreign language enrollments in American colleges and universities, Chinese language has increased by 81% from 1998 to 2006 (MLA, 2007) and followed by another 18% increase from 2006 to 2009 (MLA, 2009). According to statistics from Hanban (Chinese Language Council International), by 2010 there are more than 40,000,000 learners of Chinese all over the world. Under this background, better and comprehensive understanding about the acquisition of Chinese as a foreign language (CFL) is greatly desired. It was until the 1990s that teaching CFL was brought into applied linguistics and became a subject of its own. (Wang, 2010; Zhu, 2010; Tsung & Cruickshank, 2011) However with a brief history of about 20 years, many important issues in CFL acquisition still remain unclear.

To English-speaking learners, among the many difficult areas of learning Chinese, Chinese grammar is one of the most challenging due to typological differences between English and Chinese. Zhao (2009) summarized five unique features of the Chinese grammar. To begin with, unlike the Indo-European languages, Chinese does not use morphological changes to denote grammatical categories of gender, number, case, tense, and aspect. Rather, it uses lexical means

to indicate these concepts. Second, the word order of Chinese is much more flexible; the different word orders encode different syntactic and semantic relationships. Third, Chinese has a large number of particles (such as prepositions, conjunctives, adverbs, model verbs, and sentence final particles) that denote grammatical and semantic relationships. Forth, the morphology and syntax of Chinese are integrated. The mechanism of word and phrase formation are based on the same types of structural relationships, which often causes confusion to learners of Chinese. Lastly, the topic is more salient than the subject in a sentence. Any component (for example, the agent, patient, instrument, location or time) can occupy the subject position if it is the topic of the sentence. (p. 347-50) This all poses great challenges for learners of Chinese whose first language belongs to a typologically different language, such as English-speaking learners.

1.2 Statement of the problem

The Chinese RVCs are one of the most challenging constructions for CFL learners to acquire. By form, a RVC is a verb compound composed of two morphemes: a main verb indicating an action or event and a complement verb indicating the result of the action or event. For example, in sentence (1), the English realization of ‘washing my shirt clean’ is by putting the adjective phrase ‘clean’ after the NP ‘my shirt’. In Chinese, the adjective gan-jing ‘clean’ indicating the result of xi ‘wash’ follows right after the causing verb ‘xi (wash)’, forming a resultative verb compound.

(1)

<table>
<thead>
<tr>
<th>English</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>I washed my shirt clean.</td>
<td>我洗干净了我的衬衫。</td>
</tr>
<tr>
<td>V NP Adj Phrase</td>
<td>wo xi gan-jing le wo de chenshan.</td>
</tr>
<tr>
<td>V NP Adj Phrase</td>
<td>I wash clean PERF I POSS shirt</td>
</tr>
</tbody>
</table>
Unlike English, which has a robust verb system, Chinese has a very complicated complement system, i.e. the resultative verb complements (RVCs), to describe the status of the action expressed by the verb in a sentence. (Liu et. al, 1998; Xing, 2006) RVCs are conventionally categorized into three types according to the kinds of result they denote.

Directional verb complements (conventionally referred to as DVCs) refer to the RVC compounds with a directional verb as the complement and denote directionality. For instance, in (2a) the verb *dai* ‘bring’ collocates with the directional verb *lai* ‘come’ to form a directional verb compound *dai lai* in which the verb *dai* ‘bring’ denotes the action and the directional verb *lai* ‘come’ indicates directionality. The compound *dai lai* as a whole is the equivalent of the English verb ‘bring’. Completive resultative verb complements (conventionally referred to as RVCCs) refer to the RVC compounds denoting the completion or termination of an action or event. In (2b) the RVC compound is composed of the verb *du* ‘read’ denoting the action and the verb *wan* ‘finish’ denoting completion. The compound *du wan* is equal to the English verb ‘finish’ together with a gerund ‘reading’, while taking different structures. The third type result-state verb complements (conventionally referred to as RVCSs) refer to the RVC compounds which denote the resulting-state of an action or event. In (2c) the verb *du* ‘read’ is followed by another verb *dong* ‘understand’, the combinating of which indicates that the resulting of reading the book is to have gained an understanding of it. In English there is no direct equivalent to this RVC compound; it can only be literally translated into ‘having read that book and understood it’.

(2)

a. 我带来了一本书。
   *Wo dai lai le yi ben shu.*
   I bring come PERF one CL book.
   ‘I *brought* a book.’
RVCs are an important compound structure in Chinese because it integrates important features of Chinese lexicology, syntax, semantics and pragmatics. Lexically, RVCs are a highly frequent and productive verb compound structure in Chinese. (Chao, 1968; Li & Thompson, 1981) Meanwhile, RVCs are the lexical means of denoting the fundamental event structures: motion and state change. (Talmy, 2000; Xiao & McEnery, 2004; Slobin, 2004, 2006; Chen, 2008)

Syntactically, RVCs interact with other resultative structures and aspect markers. (Li & Thompson, 1981) They also contribute to the grammatical viewpoint and situation aspects. (Smith, 1991, 1997; Xiao & McEnery, 2004) RVCs are difficult to acquire for several reasons. As a verb compound, RVCs exhibit productivity in its verb and complement compounding. The different types of RVCs show different degrees of flexibility in compounding. For a particular type of RVCs, each unique verb complement also shows different degrees of productivity and constraints in forming compounds. Syntactically, RVCs can co-occur with different structures to denote a completed event. Semantically, the different types of RVCs express a wide range of meanings from literal to extended, metaphorical and conventionalized meanings. Many of the compounds, when appearing in potential forms, often take on idiomatic meanings that are quite different from their literal meanings. From a comparative linguistic point of view, it is often the case that one could not find the exact English equivalents to many RVCs. As a result, the
mainstream pedagogical materials usually introduce RVC compounds as fixed expressions and recommend learners to memorize them as lexical items.

1.3 Research gap

The acquisition of RVCs has been one of the heated topics in the acquisition of Chinese as a first language. Researchers have explored several aspects of RVCs, including the age of acquisition, the development of compositionality and productivity of RVCs in Mandarin-speaking children, their interpretation of event structures denoted by RVCs, and the role of adult caretakers’ input in children’s developing understanding of RVCs. (Erbaugh, 1982; Xu, 2006; Chen, 2008; Deng, 2010)

Compared with the L1 research on RVCs, the L2 acquisition of RVCs can be at best described as rare. Among the few studies, most research has focused on the acquisition of one type of RVCs, the directional complements (referred to as DCs). Through analyzing learners’ production of DCs in controlled experiments, learner corpora or homework exercises, these studies have attempted to identify the acquisition order of directional complements and the deviations of directional complements committed by CFL or CSL learners. (Qian, 1997; Li, 2000; Yang, 2003a, 2003b, 2004; Wu, 2011) However these studies have primarily focused on the directional use of DVCs only. The other senses and usages of DVCs that are found to be much more challenging in acquisition, such as their extended and metaphorical meanings, and the potential forms, remained unexplored. Yuan & Zhao (2009), Qiao (2008), and Chen & Ai (2009) have mentioned CFL learners’ production of RVCs in their investigation of the acquisition of compound structures, telicity marking, and encoding of motion and state change. This shows that although certain lexical or semantic aspects of RVCs have been studied, no understanding of the RVCs as a coherent construction denoting the semantic category of result in the Chinese language
has been tapped into, and no research has systematically investigated the development of lexical frequency, complexity and linguistic accuracy of the different types of RVCs in CFL learners.

1.4 Objectives and research questions

The overall objective of this study is to explore how English-speaking CFL learners develop their mastery of the Chinese RVCs. To this end, a learner corpus approach is adopted. A learner corpus of CFL learners was constructed, which consisted of essays written by CFL learners at three proficiency levels: lower-intermediate, higher-intermediate, and advanced. A collection of essays written by Chinese native speakers is used as baseline for learner performance. Their use of RVCs was identified, described, analyzed and explained. Each type of RVC is investigated in the learners’ choices of lexical, syntactic and semantic features. Interlinguistic and intralinguistic influences are discussed. The acquisition of the different types of RVCs is investigated through six specific research questions enumerated below:

RQ1: What characterizes CFL learners’ use of DVCs in terms of lexical, syntactic and semantic features? How are these characteristics similar to or different from those of Chinese native speakers? Do these characteristics change across proficiency levels?

RQ2: What constitute the sources of difficulty in acquiring DVCs by CFL learners?

RQ3: What characterizes CFL learners’ use of RVCCs in terms of lexical, syntactic and semantic features? Do these characteristics change across proficiency levels? How are these characteristics similar to, or different from, those of Chinese native speakers?

RQ4: What constitute the sources of difficulty in acquiring RVCCs by CFL learners?

RQ5: What characterizes CFL learners’ use of RVCSs in terms of lexical, syntactic and semantic features? Do these characteristics change across proficiency levels? How are these characteristics similar to or different from those of Chinese native speakers?
RQ6: What constitute the sources of difficulty in acquiring RVCSs by CFL learners?

1.5 Significance of the study

The dissertation contributes in important ways to the methodology of researching the acquisition of CFL and theory of CFL acquisition, and offers practical suggestions to CFL pedagogy and instruction. Methodologically, this dissertation is the first of its kind which has proposed a comprehensive analytical framework encompassing the lexical, syntactic and semantic aspects of the RVCSs. Based on this framework, the annotation and error tagging conventions are proposed for analyzing extensive learner corpus data.

Theoretically, this dissertation is the first that has investigated the Chinese RVCSs as a coherent system. It sheds important insights into the acquisition of a Chinese compound structure which bridges morphology, syntax and semantics. It not only looked at the acquisition of RVCSs as a whole, but also tapped into the acquisition of each type of RVCSs and compared their process of acquisition on several dimensions. The three dimensions of analysis of RVCSs (lexical diversity, syntactic complexity and semantic expressiveness) is grounded upon and reflects the unique characteristics of Chinese grammar, i.e. the non-existence of inflectional changes in denoting grammatical concepts, the use of lexical means to realize grammatical functions, and the merge of lexical and grammatical means. The inclusion of quantitative measures and qualitative analysis not only reveals group differences but also showcases the differences in the acquisition of different verb complements, and the different paths of acquisition by individual learners. The analysis of deviations in RVCSs reveals the sources of difficulty in acquiring the RVCSs by CFL learners, and their difficulties in different stages of acquisition.

This dissertation also provides empirical suggestions for CFL pedagogy and materials development. RVCSs are one of the most important grammatical constructions introduced to CFL
learners at an early stage of learning. However the presentation of RVCs is found to be characterized by a dictionary piecemeal manner. This dissertation will provide practical guidelines for presenting the RVCs in a more empirically grounded and systematic way. It will inform the field of CFL teaching and materials development by outlining the developmental profiles of learners and suggest possible areas for development. In terms of materials development, this study will offer guidelines for what to teach and how to teach RVCs. The analysis of learner deviations will inform teachers of the intralinguistic, interlinguistic and idiosyncratic factors that lead to these deviations. Moreover, the error analysis of RVCs will inform teachers in their treatment of RVC-related errors. It will demonstrate with empirical data that deviations of different nature deserve different amount of attention at different stages of development because they are not learned at the same time or with the same effort.

What’s more, as the basis of this dissertation, a written corpus of CFL learners with both developmental and longitudinal data was constructed. It not only served as the data for this dissertation project, but also will facilitate future research on CFL learners in a wide range of morphological, syntactic and discourse features.

1.6 Organization of the dissertation

This dissertation consists of seven chapters. The present chapter has outlined the background and rationale, explained the objectives, introduced the general research questions, and described the significance of this study.

Chapter 2 is devoted to a comprehensive overview of the literature. It starts with a detailed description of the definition and typology of Chinese RVCs. The three types of RVCs (i.e. DVCs, RVCCs and RVCSs) are introduced respectively in their lexical composition, syntactic and semantic properties. The shared features of RVCs, such as lexical productivity and
syntactic constraints, are also discussed. The chapter goes on to explain how Chinese RVCs are
related to event structures by encoding motion and state change, and how RVCs contribute to
situation aspect and viewpoint aspect in Chinese. Research is reviewed that has been conducted in
the L1 acquisition and L2 acquisition of RVCs. To get a glimpse of the pedagogical presentations
of RVCs, three mainstream textbooks in North America are reviewed in their presentation of
RVCs, and their lexical, syntactic and semantic properties.

Chapter 3 introduces the methodology of this dissertation. It first reviews the status quo
of corpus linguistics and learner corpus analysis, followed by the rationale for taking a learner
corpus approach to exploring the research questions of this dissertation. It then introduces the
data sources and data collection, the compilation of the learner corpus, processing of the data, the
annotation and error tagging schemes that are designed specifically for describing and analyzing
learners’ use of RVCs. The research questions are then introduced, followed by a description of
the distribution of RVCs in the learner corpus, presented as token frequency and the frequency of
unique RVCs.

The subsequent three chapters are devoted to the acquisition of each type of the RVCs.
Chapter 4 investigates the acquisition of DVCs by CFL learners through a combination of
quantitative and qualitative analyses. The quantitative analysis explores learners’ production of
RVCs across three proficiency levels in aspects of lexical diversity, syntactic complexity and
semantic expressiveness. The qualitative analysis looks closely at the characteristics of each
learner groups and the salient features in their use of RVCs. The most frequent deviations of
RVCs are then analyzed and discussed in relation to learners’ overall language proficiency.

Chapter 5 focuses on the acquisition of RVCCs. Starting with a description of the
distribution of RVCCs in the corpus, this chapter investigated RVCCs from a quantitative and
qualitative perspective. The quantitative analysis is conducted in the lexical, syntactic and
semantic features of the RVCCs. The qualitative analysis provides case studies of two
representative complement *dao* ‘arrive’ and *wan* ‘finish’, followed by cases studies of a few individual learners from different proficiency levels. Results from Error analysis are discussed.

Chapter 6 investigates the acquisition of RVCSs. It first introduces the distribution of RVCSs. Learners’ choice of RVCs is analyzed from aspects of lexical diversity, syntactic complexity and sentential aspect. The deviations of RVCCs are discussed.

Chapter 7 starts with a summary of the findings on the acquisition of RVCs with its different types by CFL learners at the intermediate and advanced levels. This is followed by a discussion of the implications of this study to Chinese language acquisition, pedagogy and materials development. Limitations of this study and further research possibilities are also discussed.
Chapter 2

Review of the Literature

To situate this dissertation project within other endeavors that have been made on the topic, this chapter is devoted to a comprehensive (but not exhaustive) review of the literature on Chinese RVCs. It firstly introduces the definition and types of RVCs followed by their grammatical functions. The acquisition of RVCs in the first and second language is reviewed. To better account for the acquisition of RVCs by CFL learners, it is necessary to gain an understanding about what instructional and pedagogical input that the CFL learners are exposed to. For this reason, three mainstream textbooks in the United States are reviewed to identify how the different types of RVCs, the individual RVCs, the syntactic variations and the different meanings are presented in the pedagogical materials.

2.1 Definition and types of RVCs

RVCs are a type of compound structures in Chinese. They are composed of two parts, with the first part describing an action (also conventionally referred to as the V1) and the second part denoting the direction, phase or result of the action (also conventionally referred to as the V2). (Chao, 1968; Li & Thompson, 1981) The element that takes the V1 position is usually a verb, although adjectives are also allowed. The element that takes the V2 position could be either a verb or adjective. RVCs can be further categorized into several types depending on the type of ‘results’ the complement verb expresses. Scholars have slightly different views on the types of
RVCs. Chao (1968), one of the pioneering Chinese grammarians, identified five types of RVCs in his work ‘A Grammar of Spoken Chinese’ as shown in (1):

(1)  
(i) **Phase complements** which express the phase of an action denoted by the first verb, such as *dao* in *peng dao* ‘to encounter’ and *wan* in *zuo wan* ‘do finish’.  
(ii) **Intensifying complements** which intensifies the action denoted by the first verb, such as *si* in *lei si* ‘tired death’ and *tou* in *huai tou* ‘bad thorough’.  
(iii) **Potential complements** which refer to those in which an infix is inserted between the first verb and the complement verb to express possibility or impossibility of the result. Possibility is expressed by –*de*-, and impossibility by –*bu*-. Some examples are *gan bu shang* ‘cannot catch up’.  
(iv) **Directional complements** which express the direction of an action denoted by the first verb, such as *chu* in *na chu* ‘take out’ and *shang* in *pa shang* ‘climb ascend’.  
(v) **Lexical potential directional complements** which refer to the directional complements that are only or mainly in potential form, such as *xia bu lai* ‘cannot get down’ and *chi de xia* ‘have an appetite’.

Li & Thompson (1981) in their volume ‘Mandarin Chinese: A Functional Reference Grammar’ categorize RVCs into four types as shown in (2):

(2)  
(i) **Directional RVCs**, which consist of a V1 expressing displacement and a V2 indicating direction.  
(ii) **Phase RVCs** in which the V2 expresses the degree to which the V1 is carried out.  
(iii) **Metaphorical RVCs**, which include the RVCs that are often used in a metaphorical sense, such as *si* in *lei si* ‘tired death’, and *chu-lai* in *sou chu-lai* ‘find out by searching’.  
(iv) **RVCs Obligatorily in Potential Form**, which refer to those whose V2 calls for the potential form of RVCs, such as *qi* in *mai-de-qi* ‘can afford to buy’.

Chao (1968) and Li & Thompson (1981) agreed on the categories of directional RVCs and phase RVCs. The RVCs Obligatorily in Potential form in Li & Thompson (1981) correspond to the
potential complements in Chao (1968). Some of the intensifying complements in Chao (1968) overlap with the type (iii) metaphorical RVCs in Li & Thompson (1981). Still these two are not identical categories by definition. The type (iii) and type (v) of Chao (1968) seem redundant in that type (v) can be legitimately grouped into type (iii). The type (iii) metaphorical RVCs in Li & Thompson can be legitimately regarded as the metaphorical extension of either the type (i) or type (ii) complements. In addition, the potential form seems to be a shared property of all types of RVCs, rather than a unique feature of certain RVCs.

To address the above-mentioned confusions, Chinese linguists have agreed on a categorization of RVCs into three types: directional RVCs, completive RVCs, and result-state RVCs. This categorization has been adopted in the most recent work on the linguistic accounts of RVCs (Smith, 1990, 1991, 1997; Zhang, 1995; Packard, 2000; Xiao and McEnery, 2004; Sun, 2006) and the L1 acquisition studies (Chen, 2008; Deng, 2010). The rationale for such a categorization is that the three types have shared characteristics and properties, structurally and semantically, as one united category of verb compounding. The V2, be it a result, a location shift or degree, adds a sense of termination or completion to the activity denoted by V1. It expands the meaning of the V1 and consequently changes the situation type of the compound verb. On the other hand, the three types display their own characteristics that distinguish one from each other. One needs to be aware that different scholars might have used different terms to refer to the three types of RVCs. For instance, Packard (2000) used the terms ‘stative resultatives’ to refer to result-state RVCs and ‘attainment resultatives’ to refer to completive RVCs. In what follows, I will discuss the lexical, syntactic and semantic features of each type of RVCs, as well as their shared properties.
2.1.1 DVCs

Directional RVCs (conventionally referred to as DVCs) are formed by a main verb denoting displacement and a complement verb denoting direction. The complements (also called directional verbs) that form a DVC are a close set of 24 members. Table 2-1 lists the directional verbs in Chinese. These verbs have dual functions in Chinese. They can be regular independent verbs; they can also be complements in directional verb compounds. As verb complements, these verbs bring their lexical meanings to the compound, denoting direction, trajectory or orientation of the V1.

Table 2-1: Directional complements

<table>
<thead>
<tr>
<th>-shang</th>
<th>-xia</th>
<th>-jin</th>
<th>-chu</th>
<th>-hui</th>
<th>-guo</th>
<th>-kai</th>
<th>-qi</th>
<th>-dao</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘ascend’</td>
<td>‘descend’</td>
<td>‘enter’</td>
<td>‘exit’</td>
<td>‘return’</td>
<td>‘pass’</td>
<td>‘part’</td>
<td>‘rise’</td>
<td>‘arrive’</td>
</tr>
</tbody>
</table>
| *-lai* | *-shang*-lai | *-xia*-lai | *-jin*-lai | *-chu*-lai | *-hui*-lai | *-guo*-lai | - | -*
| ‘come’ | ‘come’ | ‘come’ | ‘come’ | ‘come’ | ‘come’ | ‘come’ | ‘come’ | ‘come’ |
| *-qu* | *-shang*-qu | *-xia*-qu | *-jin*-qu | *-chu*-qu | *-hui*-qu | *-guo*-qu | - | - |

In Table 2-1 the nine directional verbs listed in the first row, together with the two directional verbs *lai* ‘come’ and *qu* ‘go’ listed in the first column denote direction and trajectory when occurring in DVCs. Sentences in (3) illustrate how these verbs are used as DVCs.

(3)

a 张三出去了。
Zhangsan chu-qu le.
Zhangsan exit go PERF
The two directional verbs lai ‘come’ and qu ‘go’ can also combine with one of the nine directional verbs listed in the first row to form compound directional verbs. In such cases, lai and qu add the ‘hither-thither’ path information to the directional verbs. Lai indicates that the action orients ‘toward the speaker’ and qu indicates that the action is ‘away from the speaker’. As is shown in Table 2-1, there are 13 grammatically acceptable compound directional verbs. The combination of kai ‘part’ with lai or qu is not acceptable. Neither is dao ‘arrive’ acceptable in either of the combinations. There is also asymmetry in lexical formation. For instance, qi ‘rise’ can be combined with the hither verb lai ‘come’ but not with the thither verb qu ‘go’.

The V1 of DVCs is an open class. Any verbs denoting a motion or change of location can occupy the V1 position. The V1 is typically a verb denoting motion (for example zou ‘to walk’, pao ‘to run’ and fei ‘to fly’). The V1 can also be action verbs that imply a change of location of the direct object (for example ban ‘to remove’, reng ‘to throw’ and song ‘to send’). The third type of V1 is action verbs that cause the direct object to undergo displacement. For instance, da ‘to hit or beat’ is not a verb that inherently implies displacement of the object, but it is possible that the action causes the object to move. For instance, the DVC da chu-qu ‘hit exit-go’ means ‘let someone go out by hitting’.

The simple or compound DCs can appear alone or followed by a noun phrase (NP), which can be either an object NP or a place NP. When there is a NP, the directional verbs usually come directly after the main verb without the object inserted in between. A variation is that the two ‘hither-thither’ directional verbs and all compound directional verbs also allow themselves to be separated from the main verb, with the direct object of the verb intervening between the main
verb and directional verb. (4) lists some examples of this structural variation. In (4a) the object is inserted between the action verb *dai* ‘bring’ and the directional verb *lai* ‘come’. It is also acceptable if *lai* ‘to come’ comes directly after the verb *dai* ‘bring’. Similarly in (4b) the object is inserted between the action verb *gan* ‘chase’ and the compound directional verb *chu-qu* ‘exit-go’ (go out).

(4)

a 张三带了一份礼物来。
Zhangsan *dai* le yi fen *liwu* *lai*.
Zhangsan bring PERF one CL gift come
‘Zhangsan brought a gift.’

b 张三赶了那只狗出去。
Zhangsan *gan* le na zhi *gou* *chu-qu*.
Zhangsan chase PERF that CL dog exit-go
‘Zhangsan chased the dog out (away from the speaker).’

Cognitive linguistics and cognitive semantics in particular have proposed that the lexical realization of motion events can be extended from physical spatial change to temporal change and state change. (Lakoff, 1987; Talmy, 1991, 2000a, 2000b; Evans and Green, 2006) In fact, cognitive semantics treats lexical items as conceptual categories: a word represents a category of distinct yet related meanings that exhibit typicality effects. According to Lakoff and his colleagues (Lakoff, 1987; Brugman & Lakoff, 1988), words represent radial categories. A radial category is a conceptual category in which the range of concepts is organized relative to a central or prototypical concept. The distinct senses of a lexical concept is organized systematically: the prototypical senses are ‘closer’ to the central prototype, while less prototypical senses (peripheral senses) are ‘further from’ the prototype. The radial category representing lexical concepts has the same structure as any other non-linguistic conceptual categories. The different senses of a lexical concept are organized around a prototypical lexical sense. This means that lexical conceptual
categories have a unique structure: more prototypical senses are ‘closer’ to the central prototype, while less prototypical senses are ‘further from’ the prototype. The radial categories of words can be represented as a semantic network. (Evans & Green, 2006)

The less prototypical senses are derived from more prototypical senses by general cognitive mechanisms that facilitate meaning extension, such as figure-ground configuration, conceptual metaphor, metonymy, and image schema transformation. These mechanisms result in the systematic extension of lexical categories, which gives rise to polysemy: a semantic network for a single lexical item that consists of multiple related senses. Therefore, a semantic network consists of a number of distinct senses that are peripheral and thus not strictly predictable with respect to the prototype, but which are motivated by the application of general cognitive mechanisms. (Lakoff, 1987; Brugman & Lakoff, 1988; Tylor & Evans, 2003; Radden & Dirven, 2007) The English prepositions, for instance, constitute such radical categories. Tylor and Evans (2003) elaborated on the many senses of the English prepositions and how they are cognitively oriented to form coherent semantic networks.

Similar to the English prepositions, Chinese DVCs, the lexicalization of motion events, are an exemplar of such image schema transformation and metaphorical extension. Numerous linguistics analyses have attempted to account for the polysemy of DVCs. They found that the sophisticated semantic relationship of individual directional verbs is in fact a result of cognitive mechanisms such as image schema transformation and metaphorical extension. The different senses of individual directional verbs can be united into a coherent semantic network. (Liu, 1998; Shi, 1999; Liu, 1999; Li, 2003; Zhang, 2006; Ren and Yu, 2007; Pei and Sun, 2008) In his book-length treatment of directional complements (DCs) titled Quxiang Buyu Tongshi (A Thorough Analysis of Directional Complements), Liu (1998) identified five senses of DCs. The directional meaning is the literal and prototypical meaning. When the directional use of DCs is applied to abstract concepts, it becomes the metaphorical extension of the directional meaning. For instance,
wen chu-lai ‘question-exit-come’ denotes ‘to find out by questioning’, xiang chu-lai ‘think-exit-come’ denotes ‘to find out by thinking’, kan chu-lai ‘look-exit-come’ means ‘to find out by looking’, and shuo chu-lai ‘speak-exit-come’ means ‘to say something out’. On the mechanism of image schema transformation, DCs can collocate with verbs to indicate result. For instance, in (5a) the DVC compound that is composed of the stative verb xiang ‘to think’ and the DC qi-lai ‘rise-come’ changes the stative event into a telic event with a natural endpoint. Some DCs can also indicate a change of situation, thus taking on an aspectual function. These DCs include shang ‘ascend’, kai ‘part’, qi-lai ‘rise-come’ and xia-qu ‘descend-go’. (5b) illustrates this sense of DCs: shang ‘ascend’ denotes the inception of a new situation, and liao shang ‘chat ascend’ means ‘to start chatting and the situation goes on for a while’. Some DCs are frequently used as idiomatic expressions, which cannot be easily explained by the aforementioned categories. For instance, qi-lai ‘rise-come’ is conventionally collocated with sensory verbs such as kan ‘look’ and ting ‘listen’ to denote ‘it looks like or it sounds like’. Sentence (5c) illustrates such a usage.

(5)

a 张三想起来了那个故事。
Zhangsan xiang qi-lai le na ge gushi.
Zhangsan think rise-come PERF that CL story
‘Zhangsan remembered that story.’

b 张三和李四一见面就聊上了。
Zhangsan he Lisi yi jianmian jiu liao shang le.
Zhangsan and Lisi once meet then chat ascend PERF
‘As soon as Zhangsan and Lisi meet, they started chatting.’

c 张三今天看起来很累。
Zhangsan jintian kan qi-lai hen lei.
Zhangsan today look rise-come very tired
‘Zhangsan looks very tired today.’
2.1.2 RVCCs

The second type is completive RVCs (conventionally referred to as RVCCs), of which the complement expresses completion or termination of the action denoted by the first verb. Some linguists have also termed such RVCs as phase RVCs (Chao, 1968; Li and Thompson, 1981) or attainment RVCs (Packard, 2000). Sentences in (6) illustrate how RVCCs are used. In (6) a. the complement wan ‘finish’ is added to the action verb xi ‘wash’ indicating that the action of ‘washing clothes’ is completed. In (6) b. the action verb kan ‘look’ is followed by the complement jian ‘perceive’ which adds an aspectual meaning of completion to the action kan ‘to look’, consequently changing the situation type from action to achievement.

(6)

a. 张三洗完了衣服。
   Zhangsan xi wan le yifu.
   Zhangsan wash finish PERF clothes
   Zhangsan finished washing clothes.

b. 张三看见了一只鹿。
   Zhangsan kan jian le yi zhi lu.
   Zhangsan look see PERF one CL deer
   ‘Zhangsan saw a deer.’

The complements that form RVCCs are a closed set. Scholars have slightly different opinions on what can function as the complement of RVCCs. Table 2-2 summarized the different completive complements identified by different authors.
The complements of RVCCs can be further divided into two sub-types. Complements such as *wan* ‘finish’ and *hao* ‘good’ denote a concrete lexical meaning of completion or termination. Smith termed these complements as ‘flexible completives’ that indicate completion or termination in a telic situation but only termination in an atelic situation type. (Smith, 1997: 282) In contrast, some other RVCCs are more grammaticalized and more often than not function as quasi-aspect verbs. (Tang, 1989, p. 50) RVCCs of the second type are very much like the perfective aspect marker *le* in marking the completion of an action or event. Smith termed these RVCCs as ‘RVCs in strict completion’, which tend to convey aspsectual meanings rather than concrete lexical meanings of these complements. (Zhang, 1995, p. 138; Smith, 1997, p. 282) Below lists the usages of *hao* ‘good’, *wan* ‘finish’ and *dao* ‘arrive’ as complements of RVCCs.
a. *hao* ‘good’: As an independent adjective, *hao* means ‘good’. As a completive complement, it denotes ‘completing the task denoted by the first verb to a desirable degree’.

(7) 写好 *xie hao* ‘write-complete task = complete the task of writing’
做好 *zuo hao* ‘do-complete task = complete the task of doing’
拿好 *na hao* ‘hold-a desirable degree = hold tight’

b. *dao* ‘arrive: As completive complement, *dao* denotes ‘to reach or succeed’ which is derived from its meaning as an independent verb ‘to arrive’.

(8) 看到 *kan dao* ‘see-arrive = succeed in seeing’
想到 *xiang dao* ‘think-arrive = think of’
听到 *ting dao* ‘listen-arrive = heard’

c. *wan* ‘finish’ indicates the completion of an action.

(9) 写完 *xie wan* ‘write-finish = finish writing’
做完 *zuo wan* ‘do-finish = finish doing’
演完 *yan wan* ‘play-finish = finish playing (performance)’

Syntactically, a RVCC can occur with or without an object. The object can be a noun, an adjective or a clause. RVCCs frequently occur in the disposal structure BA sentence and the passive structure BEI sentence to indicate what happens to the entity as a result of an action or event. The BA sentence is a unique syntactic construction in Chinese that indicate the disposal of an object by the agent. (Li & Thompson, 1981) The denoting of disposal and the meaning of completion are compatible; therefore completive RVCs frequently occur in BA sentences. The BEI sentence is a typical passive structure in Chinese. RVCCs are compatible with the BEI sentence due to its indication of the completion of an action. Sentences in (10) illustrate the co-occurrence of the RVCCs and BA/BEI construction.
(10)
a  张三把衣服洗好了。
  Zhangsan BA yifu xi hao le.
  Zhangsan BA clothes wash good PERF
  Zhangsan finished washing clothes.

b  张三偷吃蛋糕被李四看见了。
  Zhangsan tou chi dangao BEI Lisi kan jian le.
  Zhangsan stealthily eat cake BEI Lisi look perceive PERF
  ‘Lisi saw Zhangsan eating the cake furtively.’

2.1.3 RVCSs

Result-State RVCs (conventionally referred to as RVCSs) refer to those in which the complement verb expresses the resulting-state of the action or event denoted by the first verb. Although both RVCSs and RVCCs can express the result of action or event, they have different foci in delineating an event or situation. The focus of RVCCs is completion; it only implies the result-state of an event or action. In contrast, the focus of RVCSs is the resulting-state; it only implies the completion of an event or action. The following is an example that helps illustrate the subtle difference in semantics between the RVCCs and the RVCSs. Xi wan ‘wash finish’ in (11a) is a RVCC, and xi ganjing ‘wash clean’ in (11b) is a RVCS. Xi wan ‘wash finish’ explicitly tells the completion of the action ‘wash’ and does not specify whether the clothes are clean or dirty, although one can reasonably predict from encyclopedic knowledge that the clothes are clean as a result of being washed. Xi ganjing ‘wash clean’ makes explicit that the clothes are clean as a result of the action result of the action xi ‘wash’, and it only implies that the action ‘wash’ is completed, which can be easily predicted from one’s encyclopedic knowledge.

(11)
a  张三洗完了衣服。
Zhangsan xi wan le yifu.
Zhangsan wash finish PERF clothes
Zhangsan finished washing the clothes.

b 张三洗干净了衣服。
Zhangsan xi ganjing le yifu.
Zhangsan wash clean PERF clothes
Zhangsan washed the clothes clean.

Unlike DVCs or RVCCs, the complement verbs in RVCSs are an open set. Most adjectives and some verbs can occupy the complement position in RVCSs. (Zhang, 1999; Xu, 2006; Chen, 2008) Since all the result-state V2 are used to specify the resultant state of an activity, adjectives that describe attribute or state are appropriate for the complement position. In contrast to adjectives, only a limited number of verbs can function as result-state V2 (Tang, 1989, p. 50). Zhang (1999) studies the RVCS compounds composed of a verb and adjective. He categorized them into different types based on the semantic entailment of the adjectives. For instance, adjectives such as hao ‘good’ and qiang ‘strong’ clearly indicate a positive entailment. Adjectives such as tou ‘transparent’ or xing ‘awake’ are neutral in their semantic entailment. Adjectives such as si ‘dead’ have negative entailment. Zhang’s analysis of a native Chinese corpus shows that native speakers tend to use neutral adjectives.

2.1.4 Shared properties

RVCs are a very productive type of compounding in Chinese. The lexical productivity of RVCs is shown in the variety of verbs and collocations that different action verbs and complements take. For instance, the same verb can collocate with different types of complement verbs to denote different types of resultative meanings. On the other hand, the same complement verb can take a wide range of verbs to form compounds. Sentence (12a) illustrates how the same verb kan ‘to look’ can take different complements to convey completely different meanings.
When *kan* ‘to look’ takes the directional complement *shang* ‘ascend’, it denotes ‘to have a crush on someone’. When *kan* ‘to look’ takes the result-state complement *chuan* ‘cross’, it denotes ‘to look through the tricks of someone’. When *kan* ‘to look’ takes another result-state complement *fan* ‘bored’, it denotes ‘to be tired of someone’. (12b), (12c) and (12d) illustrate how different verbs can take the same complement to express different meanings.

(12)

a  张三看上 / 看穿 / 看烦了李四。
   Zhangsan *kan shang* / *kan chuan* / *kan fan* le Lisi.
   Zhangsan look ascend / look cross / look bored PERF Lisi
   ‘Zhangsan had a crush on Lisi. / Zhangsan knew well the tricks of Lisi. / Zhangsan is tired of Lisi.’

b  起来：站起来 / 想起来 / 哭起来
   qiOlai: zhan qiOlai / xiang qiOlai / ku qiOlai
   rise: stand up / think of / begin to cry

c  到：走到 / 看到 / 听到 / 想到 / 买到
   dao: zou dao / kan dao / ting dao / xiang dao / mai dao
   arrive: walk arrive / look arrive / listen arrive / think arrive / buy arrive
   ‘arrive: walk to / see / hear / think of / buy’

d  死：累死 / 饿死 / 贵死 / 困死
   si: lei si / e si / gui si / kun si
   dead: tire dead / hungry dead / expensive dead / sleepy dead
   ‘dead: tired to death / hungry to death / extremely expensive / extremely sleepy’

RVCs also exhibit productivity in the morphological process of the construction of potential forms. The potential form is formed through inserting a potential infix, *-de-* ‘able’ (for positive possibility) or *-bu-* ‘not’ (for negative possibility) between the main verb and the complement (Li & Thompson, 1981). The potential form marks the ability or inability, or the possibility or impossibility, of the agent to realize the change of location or state denoted by the V2 by conducting the action denoted by the V1. Thompson (1972, 1973) has proposed that the ability to form the potential form is a major criterion to decide whether a verb can function as a
complement or not. The following are some examples of resultative complements in the potential form.

a. When used in the potential form, the DC *qi* ‘rise’ denotes ‘to afford’.

(13) 买得起 mai-de-qi ‘buy-can-afford = can afford to buy’
输不起 shu-bu-qi ‘lose-cannot-afford = cannot afford to lose’
看不起 kan-bu-qi ‘look-cannot-afford = don’t have any regard for (someone)’

b. When used in the potential form, the compleitive complement *dao* ‘arrive’ denotes ‘to achieve’.

(14) 做得到 zuo-de-dao ‘sit-can-arrive = can make it happen’
吃不到 chi-bu-dao ‘eat-cannot-arrive = cannot get certain food/dishes’

c. When used in the potential form, the result-state complement –*kai* ‘open’ denotes ‘to be open-minded’.

(15) 想得开 xiang-de-kai ‘think-can-open = be open-minded’
想不开 xiang-bu-kai ‘think-cannot-open = ‘unable to be open-minded’

On the other hand, there are certain semantic and syntactic constraints that RVCs must observe. These features define what RVCs are and distinguish RVCs from other Chinese compound structures. Unlike most action verbs in Chinese which can be reduplicated to indicate delimitative aspect, RVCs cannot be reduplicated. For instance, one is not allowed to say *xie-wan-xie-wan* ‘write-finish-write-finish’ or *xihuan-shang-xihuan-shang* ‘like-ascent-like-ascent’. The reason is that the primary communicative function of an RVC is to convey whether the action is completed or not, or can or cannot take place. Delimitative aspect refers to an action that is
done ‘just a little bit’ and is thus incompatible with the completive aspect denoted by the RVCs. (Thompson, 1973; Li and Thompson, 1981, p. 56-58) The second constraint of RVCs is that no RVCs can be preceded by any degree adverbs, such as *hen ‘very’ or feichang ‘extremely’ or ji le ‘very’. The third constraint is that, except for directional verbs, no aspect markers, measure words, or any elements other than the potential infix can intervene between the two constituents of RVCs (Thompson, 1973).

2.2 RVCs and event structure

Cognitive linguistics hold that human thought is organized around two basic types of conceptual units: things and relations. Things and their relationships form a conceptual core and ultimately a conceptual situation. Event structure is one of the fundamental structures of the conceptual situation. (Evans & Green, 2006; Radden & Dirven, 2007) In Chinese RVCs are an important lexical means of event structures. DVCs encode motions events; RVCCs and RVCSs express state change.

2.2.1 Encoding motion

Motion events refer to events of motion or change of location. Although motion is one of the universal experiences, motion events are encoded in language specific ways in different languages. Talmy (1991, 2000a, 2000b) proposed the following concepts to delineate a motion event: Figure, Ground, Path and Manner. Figure refers to an entity that possesses a dominant shape or is capable of motion. Figure stands out against the ground, the part of a scene that is relegated to ‘background’. This perceptual tendency has its realization in language. In a linguistic expression, an entity is typically profiled and represented as the Figure; the other entities are
given less prominence and referred to as the Ground. The basic motion is described as consisting of a Figure with respect to a Ground. Path refers to the trajectory that a Figure moves or the site that it occupies. How the Figure moves is referred to as the Manner. Based on the different lexical patterns of motion events in different languages, Talmy proposed a two-way typology of motion events, i.e. satellite-framed languages and verb-framed languages. In satellite-framed languages, Manner of motion is typically encoded in the main verb, Path in a satellite to the verb. English, Chinese or Germanic languages are said to belong to this category. Take English as an example, the English verb particles (for example across, out of, in) follow the motion verb to encode the Path information of the motion, and therefore they are examples of Path satellites. In contrast, the verb-framed languages encode Path in the main verb by words with a meaning along the lines of ‘enter, exit, ascend, descend, insert, or extract’. The Manner or Cause of the motion is usually expressed in a separate clause. Languages such as Spanish, French, Japanese or Korea represent a verb-framed language. Sentences in (16) compare the different lexicalization patterns of the two language types in encoding motion events.

(16)
Satellite-framed language
English
He ran out of the room.

Verb-framed language
French
Il sortit de la chambre.

Slobin (2004, 2006) proposed a modification of Talmy’s binary typology and included a third category: equipollently-framed languages, in which ‘both manner and path are expressed by “equipollent” elements – that is, elements that are equal in formal linguistic terms, and appear to be equal in force or significance’ (2006, p. 228). He noted that Mandarin Chinese and other
serial-verb languages differ from satellite-frame languages in that the so-called satellites, unlike English particles, are full verb that can also be used as predicates independently. (ibid.) Mandarin Chinese also does not pattern with verb-framed languages, since the Manner of motion is encoded in the main verb, and there is no distinction between finite and nonfinite forms as there is in typical verb-framed constructions such as ‘exit flying’. Mandarin and other serial-verb languages are exemplars of this third type of languages.

More importantly, Slobin and other experimental linguists have observed that speakers of language of different language typologies show language-specific ways of conceptualizing and profiling motion events, providing evidence for a weaker version of ‘linguistic relativity’ (Sapir, 1921; Whorf, 1956; Lucy, 1992; Slobin, 1996, 1997a, 1997b, 2000, 2003a, 2003b; Gumperz & Levinson, 1996; Niemeier & Dirven, 2000; Gentner & Goldin-Meadow, 2003) and ‘thinking for speaking’ (Slobin, 1996, 1997, 2000, 2003a, 2003b, 2006). They found that speakers of satellite-framed languages tend to pay more attention to the manner of the action, and they describe the different motions in a more elaborated manner. Speakers of verb-framed languages tend to pay more attention to the path of the Motion, and described in more details the source and endpoint of the motion. Speakers of equipollently-framed languages tend to give equal weights to both the Manner and Path of the motion. (Slobin, 2004; 2006) The typological differences also pose challenges to children at the early stage of language acquisition, and apparently posed challenges to adult L2 learners whose L1 does not share the properties of the target language.

2.2.2 Encoding state change

Cognitive semanticists have proposed that the conceptual structure, in other words, the organization of mental representation of the world, derives from and embodies people’s experience with the world. Instead of directly referring to the objects in the world, language refers
to concepts in the mind of the speaker. Thus language does not encode meaning; rather meaning is constructed at the conceptual level. (Evans & Green, 2006) From this perspective, language is motivated from and rooted in people’s bodily experience with the physical, cultural and social world. (Lakoff, 1987; Evans & Green, 2006) Spatial relationship, as one of the basic and primary structures of physical experience, can be applied metaphorically to temporal domains and express state change. Talmy has pointed out that the way state change is expressed is analogous to the way motion is expressed. For example, the entity that undergoes a state change is often presented as a Figure that metaphorically moves to a state specified by a satellite or other verb complement. (Talmy, 2000, p. 238) Talmy further suggests that the conceptual analogy motivates a syntactic and lexical analogy: to a great extent, state change is expressed in a language by the same constituent type as Path, and often by homophonous forms. Therefore in line with the general typology, the core schema of an event of state change appears in a satellite in satellite-framed languages, and in the main verb in verb-framed languages.

The conceptual analogy between motion events and state-change events is borne out in Chinese. RVCs, including both RVCCs and RVCSs, are a typical way of encoding state-change in the Chinese language. The realization of RVCs resembles that of the DVCs with the main verb followed by the resultative complement. The Cause component of a RVC occupies the position of the Manner verb of a DVC, and the state-change component of a RVC takes the position of the Path verb of a DVC. The conceptual analogy also accounts for the shared features between DVCs, RVCCs and RVCSs in their lexicalization patterns and syntactic structures.

2.3 RVCs and aspect

Aspect is defined as ‘an important linguistic category which relates to the study of linguistic devices that enable a speaker to direct the hearer’s attention to the temporality of a
situation, either intrinsic or viewed from a certain perspective.’ (Xiao & McEnery, 2004, p. 1)

Traditionally aspect refers to the grammaticized viewpoints such as perfective and imperfective. Recently it has been realized that situation types are also an important part of aspect. Vendler’s (1967) classification of verb types or the term ‘Aktionsart’ refer to situation type. Therefore the current theorization of aspect is a two-way analysis that includes both situation aspect and viewpoint aspect. Situation aspect refers to the intrinsic event structure borne out by the verbs. Viewpoint aspect refers to how an event is viewed from an external perspective.

Unlike English, which uses morphological inflection for tense and aspect, Chinese primarily use lexical means to indicate aspect. The result-denoting property of RVCs makes it an important means of aspect marking in Chinese. In fact RVCs have long been recognized as a major component of situation and viewpoint aspects in Chinese. (Smith, 1991; Xiao & McEnery, 2004) Next I will explain how RVCs contribute to both components of aspect.

2.3.1 RVCs and situation aspect

Vendler (1967) categorized the verbs into four categories based on such inherent properties of verbs as dynamic/stative, durative/punctual, and telic/atelic. A verb is stative if it describes an event that remains constant through time and does not involve internal change or action (for example love, know, want). Activities present situations as having duration, consisting of successive phases over time without an endpoint (for example walk, run, talk).

Accomplishments characterize situations with duration and natural endpoints (for example draw a picture, write a letter, build a house). Achievements differ from accomplishments in durativity. It encodes situations with a natural endpoint and no duration. That is, the beginning and ending of an event presented by an achievement overlap with each other (for example die, kill, fall). Table 2-3 summarizes the situation types proposed by Vendler (1967).
Different languages have different lexicalization patterns of situation types. It has been pointed out that Chinese, compared with English, has a fairly large number of activity verbs but does not have many independent verbs that intrinsically denote telicity. (Tai, 1984) Due to the denoting of telicity, RVCs are a primary means of forming achievements and accomplishments in Chinese. Activity verbs can take DVCs and some RVCCs that do not have a strict sense of completion. (Smith, 1991) In (17a) the activity verb pao ‘run’ is followed by the DC guo-lai ‘cross-come’, denoting a telic event. In (17b) the compound that is composed of the activity verb ting ‘listen’ and the completive complement jian ‘perceive’ changes the situation type the verb ting ‘listen’ into an achievement. In (17c) the activity verb xie ‘to write’ is followed by a result-state complement cuo ‘wrong’, forming a verb compound with a natural endpoint.

(17)

a 张三朝我跑过来。
  Zhangsan chao wo pao guo-lai.
  Zhangsan towards me run cross-come.
  ‘Zhangsan ran towards me.’

b 张三听见有人叫他。
  Zhangsan ting jian you ren jiao ta.
  Zhangsan listen perceive have person call him.
  ‘Zhangsan heard somebody calling him.’

c 你写错字了。

(Adapted from Evans & Green, 2006, p. 631)
Ni xie cuo zi le.
You write wrong character PERF.
‘You wrote a wrong character.’

Achievement verbs can take RVCs and form another achievement compound with different meanings. (Smith, 1991) In (18a) the punctual verb da ‘hit’ is followed by a result-state complement kai ‘open’, adding the resultative information to the achievement verb. In (18b) the punctual verb shuai ‘fall’ is followed by a result-state complement dao ‘collapse’ which adds the resulting state of the punctual verb.

(18)

a 请打开门。
Qing da kai men
Please hit open door
‘Open the door, please.’

b 张三不小心摔倒了。
Zhangsan shuai dao le.
Zhangsan fall collapse PERF
‘Zhangsan fell down.’

Because stative verbs are atelic and nondynamic, they usually do not co-occur with RVCs. However according to Smith (1991), stative verbs may take certain directional and completive complements. In (19a) the stative verb ai ‘to love’ takes the DC shang ‘ascend’ to metaphorically denote a sense of ‘attachment’, thus changing the situation type of the activity verb into an achievement. In (19b) the stative verb shui ‘to sleep’ takes a completive RVC zhao ‘be on target’, denoting the impossibility of the event.

(19)

a 张三爱上了小王。
Zhangsan ai shang le Xiaowang.
Zhangsan love ascend PERF Xiaowang
‘Zhangsan fell in love with Xiaowang.’

b 张三睡不着。
Ta shui bu zhao.
‘He cannot fall sleep.’

2.3.2 RVCs and viewpoint aspect

Viewpoint aspect refers to how an event is viewed in terms of temporality from the perspective of the speaker. It is further divided into perfective and imperfective aspect. Perfectives view a situation as completed while imperfectives view it as ongoing. Perfectives view events as temporally bounded whereas imperfectives view events as temporally unbounded. (Xiao & McEnery, 2004, p. 23) With regard to viewpoint aspect, RVCs ‘express completion or termination, information about result states, emphasis or lexical color, or a conversation implicature’ (Smith, 1991, p. 344). According to Smith (1991), the three types of RVCs add different perfective information to sentences: RVCCs affirm termination or completion of an event or action; DVCs add lexical information, sometimes adding telicity to a non-telic verb; RVCSs change the duration of a verb by specifying a result state.

Xiao & McEnery (2004) proposed that RVCs are completive aspect markers. It is also noted that Chinese grammatically distinguishes completion and closure. (Xiao & McEnery, 2004) The verb final le is the grammatical means of denoting closure or a closed event. RVCs are the grammatical means of denoting completion or termination. Sentences in (20) illustrate how the perfective aspect is encoded in the language. In (20a) the activity verb xie ‘to write’ is followed by the verb final le which only indicates that the event happened in the past. The activity verb xie ‘to write’ is followed by the completive complement wan ‘to finish’, which specifies that the action is completed. In (20b) the achievement verb sha ‘to kill’ does not inherently imply the result; to express the result and the completion, the result-state complement si ‘die, dead’ is
required. Examples like these illustrate that the completion and closure are encoded by different grammatical means in Chinese. To specify completion, RVCs are required.

According to Xiao & McEnery (2004), some DVCs can also mark imperfective aspect. The RVCs qi-lai ‘rise-come’, in addition to its spatial meaning, is also ‘an aspect marker signaling the inceptiveness of a situation’ (p. 217). It focuses on the starting point of a situation and signals the beginning of a new situation. Sentence (21) illustrates how qi-lai is used as an aspect marker.
go on’. (Xiao & McEnery, 2004, p. 228) Sentences in (22) illustrate the use of –xia-qu as a continuative aspect marker.

(22)

a. 他已经胖起来了，就很难再瘦下去了。  
Ta yijing pang qi-lai le, jiu hen nan zai shou xia-qu le.  
He already plump rise-come PERF, thus very difficult again thin descend-go PERF  
Since he has already put on some weights, it is very difficult for him to lose weights.

b. 我们不能眼看着他堕落下去。  
Women bu neng yan kan zhe ta duolu xia-qu.  
We no can eye look ZHE him degenerate descend-go  
We cannot watch him degenerating himself without doing anything to help him.

Another way that RVCs contribute to the Chinese aspect system is that some DVCs denote ‘to begin, continue, stop, or finish’ by indicating the initiation or termination of a state or an action. (Smith, 1991; Liu., 1998) These DVCs draw people’s attention to a particular portion of a situation, and help form shifted situation types from the main verbs. For instance, in (23), the addition of DC kai ‘part’ and shang ‘ascend’ to the verbs liao ‘to chat’ and nao ‘to find fault with someone’ mark the initiation of a new situation.

(23)

a. 一天，他俩碰到一块，又聊开了。  
Yi-tian, talia peng dao yikuai, you liao kai le.  
one-day, they meet arrive together, again chat open PERF  
‘One day, they met and started to chat.’

b. 他和他媳妇闹上了。  
Ta he ta xifu nao shang le.  
He with him wife find-odds on PERF  
‘He began to find fault with his wife.’
2.4 L1 acquisition of RVCs

The development of verb knowledge and compounding is one of the central research topics in child language acquisition. RVCs, a verb compound construction, have drawn attention from researchers on Mandarin children’s language development. Depending on the theoretical orientations of the researchers, studies on Mandarin children’s language acquisition can be roughly grouped into two schools: a generative oriented rule-based learning (Chomsky, 1959, 1981, 1993) and usage-based learning proposed by Tomasello and colleagues (Tomasello, 1992, 2000a, 2000b, 2000c, 2000d; Tomasello & Brooks, 1998). Research has been conducted to investigate the timing of the acquisition and children’s understanding about the compositionality of aspect. Deviations, which are found to be less typical of children’s utterances, are also discussed.

The earliest RVC in Mandarin children’s utterances has been reported to be at 1.6 years old; children are found to use RVCs frequently and productively in an adult-like manner at around 3.6. Erbaugh (1982) in her longitudinal study of four Mandarin-speaking children found that RVCs were rare between 2.0 to 2.6. After 2.6, the frequency of RVCs significantly improved. Xu (2006) in her longitudinal study of two Mandarin-speaking children identified that RVCs emerged as early as 1.7. Deng (2010) conducted a longitudinal study of two Mandarin-speaking children. Her study shows that the first use of RVC appeared at around 1.7. Chen (2008), through the analyses of 15 children’s utterances elicited from two longitudinal corpora, found that although children started to use RVCs at a very young age around 1.4 to 1.7, the early uses of RVCs before age two were small in number, frequently repetitive and lacked productivity. As to the distribution of different types of RVCs, both Chen’s (2008) and Deng’s (2010) studies showed that DVCs and RVCCs have higher frequency than the RVCSs. Researchers used different data to support their theoretical stances that the acquisition of RVCs is either rule-based
or usage-based. For instance, Deng (2010), through her analysis of naturalistic data from two Mandarin-speaking children, found that the distribution of the three types of RVCs in child speech did not match that in the adult input in the earliest stage of syntactic development. She also found that about 20% of the RVCs produced by the children were not from the adult input. Under 2.0, half of the RVCs produced by children was not compositional, suggesting that children had limited capability in producing original RVCs. In their later development, more RVCs became fully compositional, indicating a development in producing original RVCs.

However, evidence from other researchers such as Xu (2006) and Chen (2008) shows that the acquisition of RVCs is usage-based, supporting Tomasello’s usage-based view. Xu (2006) found that of the RVCs produced by two children from 1.7 to 2.6, around half were unanalyzed wholes and about 85% came from the adult input. Chen (2008), through analyses of 15 children’s data from two longitudinal corpora, found that children’s early uses of RVCs before age two were small in number and lacked productivity. There was a close correspondence in the frequencies of the different categories of RVCs in adult input and child production. Her analyses show that children’s early RVCs are item-based and input-driven. Her experiments on five groups of children with mean ages of 2.6, 3.6, 4.6, 6.1 and 8.1 show that children grasped the combinational nature of RVCs by at least 2.6. From then on, they used RVC components separately and combined them flexibly. Sometimes they made overgeneralization errors. Children at age six still created odd compounds, and failed to reject them in the judgment task. She proposed that children start by learning items one by one in a piecemeal fashion, but they gradually abstract the underlying schema and use the schema productively.

With regard to children’s interpretation of event structure, Erbaugh (1982) did a longitudinal study of four Mandarin-speaking children. She found that RVCs were relatively rare between 2.0 to 2.6. The children’s RVCs became frequent between 2.7 to 3.6. Later on, children still had difficult producing the action verbs, namely V1, of RVCs. They sometimes used stative
verbs causatively without an action. This suggests children pay more attention to the result part in a complex event while overlook the causing part. Chen (2005), based on an experiment on four groups of Mandarin-speaking children (mean ages 2.6, 3.6, 4.6 and 6.1), found that at 2.6, children had no difficulty in understanding the state-change meaning conveyed by RVCs. However, they had trouble determining where the state-change meaning is encoded: in V1, V2, the whole RVC or the perfective aspect marker -le. Even as late as 6 years of age, children still mistakenly treated V1 of the RVC as if it entails a state-change. This suggests that while young children know that the state-change is critical to an RVC, they are not conscious of its event structure. They regard the action verb V1 as equivalent to an RVC. Deng (2010) in a novel verb experiment conducted on 32 children aged from 2.9 to 4.0 found that six children had the ability to decompose and form novel RVCs. They relied heavily on V1 to interpret directional RVCs, and on V2 to process and produce result-state RVCs.

2.5 L2 acquisition of RVCs

Compared with the many studies on the L1 acquisition of RVCs, studies on the L2 acquisition of RVCs are scarce and most have focused on the acquisition of DCs. Many of these studies are based on learners who have studied Chinese as a second language in China, in other words, in an immersion context, and they have investigated issues such as the acquisition order of DCs and the deviations in learners’ language production. Some researchers have also investigated how learners acquire the event structure of RVCs. However, no systematic research has been conducted on the acquisition of RVCs as a coherent construction. In what follows I will review the research on the L2 acquisition of RVCs.
2.5.1  **L2 acquisition of DVCs**

**Acquisition order of DCs**

Several studies have attempted to identify the acquisition order of DCs. Qian (1997) investigated the acquisition order of DCs by Japanese learners of Chinese at the beginning, intermediate and advanced proficiency levels using natural data (students’ compositions and homework) and elicited data (multiple choice questions and translation exercises). She distinguished simple DCs from compound DCs, DVCs with or without an object, and analyzed the extended meaning of a few DCs. She identified the acquisition order of Japanese learners in acquiring individual DCs. She found that the word order of the compound DCs when followed by objects is a major area of learning difficulty. She also found that although overall the metaphorical meanings are acquired later than the literal meanings, metaphorical usages are not necessarily acquired later than literal ones. Qian attributed this to the fact that some metaphorical usages, such as *qi-lai* ‘rise-come=initiation of a state’, are fixed expressions and therefore were acquired as a chunk.

Yang (2003a, 2003b, 2004) conducted a series of studies on the acquisition order of DCs by American, Korean and Japanese learners who studied Chinese at Chinese universities. He elicited data from the CSL Interlanguage Corpus constructed by researchers at Beijing Language and Culture University. The learners were grouped into two levels: beginners and intermediate-advanced learners. Based on the syntactic and semantic features of DCs, Yang created 10 categories that cover the distinction between simple DCs and complex DCs, RVCs with or without an object, literal meaning and extended meaning. The serial studies found a similar acquisition order among the three groups: (1) verb + simple DC (literal meaning), (2) verb + simple DC (extended meaning), (3) verb + compound DC (literal meaning), (4) ‘verb + simple
DC (extended meaning)’ with an object, (5) verb + DC1 + object + DC2 (literal meaning), (6) verb + DC1 + object + DC2 (extended meaning), (7) verb + compound DC (extended meaning), (8) verb + compound DC (extended meaning) + object, (9) ‘verb + simple DC (literal meaning)’ with an object, (10) verb + compound DC (literal meaning) + object. While Yang’s studies are systematic and robust, his categorization of DVCs is vague. For instance, he did not elaborate on what criteria the extended meaning is distinguished from the literal meaning. He also failed to take into account the obligatory occasions where a DC is expected but not used by the learners.

Wu (2011) investigated how L2 Chinese learners in an American university acquire the DCs in instructional settings. Her participants included 55 English-speaking university students and 20 native speakers of Chinese. Using a controlled composition task and a picture-cued written task, Wu elicited learners’ knowledge and degree of mastery of DCs by English-speaking learners and heritage learners at different language proficiency levels. The analysis shows that the acquisition difficulties are mainly due to the syntactic complexity of the DCs and from the typological features of Chinese as a serial-verb language. She also found that the dual function of directional complements as both path satellites and independent verbs was especially hard for English-speaking learners. Based on the results, Wu proposed the following accuracy order in acquiring DCs: (1) simple DCs, (2) complex DCs, (3) simple DCs with Object NPs, (4) simple DCs with Place NPs, (5) complex DCs with Object NPs, (6) complex DCs with Place NPs. Wu’s study is by far the most comprehensive study that systematically investigated the acquisition of DCs by English-speaking learners of Chinese who study Chinese in a foreign language context. It contributes greatly to the understanding of the acquisition of DCs by this particular learner population. However, Wu only looked into DCs in their literal meaning, i.e. directional meaning. The extended and metaphorical use of DCs, as well as their aspectual use, was not tapped. She primarily used elicited task to collect data, which hardly provide a longitudinal and developmental account of the acquisition process.
Error analysis of directional complements

Deviations of RVCs produced by CFL/CSL learners are another aspect of research on RVCs. Li (2000) conducted an error analysis (EA) of DCs by American students who studied Chinese in Chinese universities. She collected the compositions written by intermediate learners of Chinese, and identified 90 instances of errors (44% error rate) related to DCs. Li categorized the deviations into four types: (1) grammatical errors (for example, misplaced objects and complements), (2) lacking verbs, (3) lacking complements, and (4) misuse of complements. For instance, (24a) is an instance of grammatical errors because the complement qu ‘to go’ was misplaced, which should have followed the object sushe ‘dorm’. (24b) is an instance of lacking verbs, because the context requires an action verb whereas the student only uses the DC -lai ‘to come’. (24c) is an instance of lacking complements, because the activity verb xie ‘to write’ does not indicate an endpoint and cannot be followed by an object that denotes the outcome of the activity of writing. (24d) is an example of misuse of complement. xing qi ‘wake rise’ is not an acceptable collocation in Chinese. The appropriate one should be xing lai ‘to wake up’. Errors of this kind can be attributed to a transfer of their L1 English.

(24)
Grammatical errors
a  *我们回去宿舍好吗?
   Women hui qu sushe hao ma?
   ‘Shall we go back to our dorm?’

Lacking verbs
b  *他的衣服都是从韩国来的。
   Ta de yifu dou shi cong hanguo lai de.
   ‘His clothes are all brought (or bought) from Korea.’

Lacking complements
c  *我可以写很多我爱我家的原因。
   Wo keyi xie hen duo wo ai wo jia de yuanyin.
I can write very many I love my home MM reason.
‘I can list a lot of reasons why I love my home.’

Misuse of complements
d

Mei 一醒起的时候，就发现原来不是一个梦。
Wo yi xing qi de shihou, jiu faxian yuanlai bu shi yi ge meng.
I one wake rise MM moment, then found in fact no be one CL dream.
‘When I woke up, I found it was not a dream.’

Li proposed that when a verb and a complement form a fixed expression, DVCs are acquired as a chunk. DCs are similar to English prepositions in function, and acquisition difficulty arises when the two languages apply different spatial conceptualizations and lexicalization patterns to denote the same physical experience. Wu (2002) conducted a more detailed EA of DCs by Japanese learners of Chinese. The errors she identified included (1) confusions between simple DCs and compound DCs, (2) confusions between DCs and other resultative complements, (3) misuse of verbs, (4) lacking DCs or redundant directional complements, and (5) misplaced object. Like all EA studies, these studies identified the possible areas of errors; however they did not take into account what the learners can produce correctly (Ellis & Barkhuizen, 2005; Ellis, 2008). Also confined by the limited number of participants, neither of these studies looked at learners based on their proficiency levels, and thus was not able to provide a dynamic and developmental picture of the acquisition of DCs.

Wu (2010) in her analysis of the DCs produced by CFL learners discussed two areas of difficulty in acquiring DCs. She found that intermediate learners tend to overlook the differences between the DCs shang ‘ascend’ and qi ‘rise’. The two DCs are similar because they both denote an upward movement; they are different because shang profiles the goal of the movement while -qi profiles the source of the movement. Learners are also found to have difficulty in encoding the hither/thither path. This is revealed in their misuse of the hither path verb lai ‘come towards the speaker’ and qu ‘go away from the speaker’.
2.5.2 L2 acquisition of RVCs

Although no systematic study has so far been conducted on the L2 acquisition of the other two types of RVCs, i.e. RVCCs and RVCSs, scholars from different theoretical orientations have probed into the acquisition of event structures of RVCs by learners of Chinese. For instance, Yuan & Zhao (2009) adopted a generative approach to investigate how L2 learners acquire the Chinese resultative compounds. Their primary research question was whether English-speaking learners of Chinese were able to reconfigure features in new clusters in their L2 acquisition of Chinese resultative compounds. The data were elicited from 55 English-speaking CFL learners and 28 native speakers of Chinese. The learners were further divided into three groups (low-intermediate, high-intermediate, and advanced) based on their performance in a language proficiency test. The participants were required to take an acceptability judgment test, which included 5 sentence types that distinguished the position of patient/theme-of-activity constraint and patient/theme-of-result constraint. The results, according to Yuan & Zhao, showed that English speakers were able to acquire the syntactic feature of the resultative compounds but they failed to acquire the thematic features of the same structure. The evidence was that the learners were able to produce the correct target form word order of “Agent + Activity predicate + Result predicate + Postverbal NP”, but they were not able to recognize the different thematic relationships between the agent, the predicate and the postverbal NP. And it remained unclear whether these thematic features can be eventually acquired or not because their study did not include participants who could represent the final stage of learning, if it exists at all. They concluded that syntactic and thematic features should be distinguished in acquiring an L2 grammar because their re-configurations do not necessarily develop simultaneously. Yuan & Zhao’s study provided evidence to that the thematic feature of RVCs poses greater challenges to
learners, and even if learners have produced the correct syntactic forms, it does not necessarily mean they correctly understand the thematic relationships and the event structure of the RVCs.

Also from a generative approach, Qiao (2008) investigated the acquisition of telicity marking of RVCs by English speakers. Her research goal was to identifying the factors that influence L2 syntactic acquisition and the possibility of parameter resetting in the process of second language learning. The research questions were 1) whether English-speaking learners can fully acquire the language-specific ways of packaging information in RVCs, 2) the effects of the parameter of telicity marking in L2 acquisition of verb compounds. The participants included 12 advanced learners, six intermediate learners, six beginner learners, and six native Chinese speakers as controls. The participants were asked to complete a story comprehension task to assess their knowledge of the telicity marking in Mandarin. The results showed that learners of lower proficiency had difficulty in determining that a state-change meaning is crucial to RVCs, and this was accounted by the fact that their English L1 lacks such a structure. The intermediate group and the advanced group were found to have the ability to distinguish these structures differently. An increase in accuracy in the learners’ knowledge of telic and atelic interpretation was also observed among the learners. The results suggested that learners given time of exposure to the target language can acquire new structures not available in one’s native language. It also indicated a positive relationship between the mastery of the structures and learners’ overall language proficiency.

Chen & Ai (2009) investigated the crosslinguistic influences on the learning of encoding motion and state change in L2 Chinese. They elicited descriptions of motion events and state change events from 10 English-speaking CFL learners in educational settings. The results showed that the learners were sensitive to the Mandarin-way of encoding motion and state change. It was also found that learners tended to overuse the dominant way of lexicalizing motion and state change in the target language.
This shows that although certain lexical or semantic aspects of RVCs have been studied, there is no research that has systematically investigated RVCs as a whole construction which consists of different types but denotes a coherent conceptual concept. No research has compared the development of lexical frequency, complexity and accuracy of the different types of RVCs, and how they develop separately and interactively as components of the whole language system. All in all, little understanding has been gained in the acquisition of RVCs by CFL learners across proficiency levels and developmentally.

2.6 Pedagogical presentations of RVCs

In order to better understand the input that CFL learners receive on RVCs, I surveyed three mainstream textbooks that are currently used or have been popular in the past two decades in the United States. They are *Practical Chinese Reader Elementary Course* (Book II) by BLI (1990), *Integrated Chinese* (Level 1 Part 2 & Level 2) by Yao et al. (1997), and *Chinese Link* (Level 2) by Wu et al. (2006). According to Wang (2002: 192), *Practical Chinese Reader* (Hereafter, PCR) and *Integrated Chinese* (Hereafter, IC) are probably the most popular textbooks for elementary to intermediate learners of Chinese in the U.S. PCR was widely used in the 80s and 90s. IC was put on market in 1997 and is still in use. Compared with PCR and IC, *Chinese Link* (Hereafter, CL) is newer, and has received quite positive reviews and is being adopted by more and more institutions.

I compare the three textbooks in how the RVCs are introduced and presented. In particular, I survey their pedagogical presentation of the different types of RVCs and unique complements and how the different meanings of the complements (literal, extended, and metaphorical meanings) are introduced. I also compare the textbook approach to the findings gained from linguistic research.
2.6.1 Presentation of different types of RVCs

PCR introduces RVCs in its Book II of the two book series. Among the three textbooks, PCR covers the most types of complement constructions. Besides DVCs, RVCs, RVCSs, and their potential forms, it also introduces the complement of degree, the time-measure complement, the action-measure complement, and the complement of quantity. Due to the scope of this dissertation, I will focus on its presentation of RVCs. It introduces RVCs in seven lessons in the order of RVCSs, RVCCs, simple DCs, RVCs in potential forms, and compound DCs. For each type, PCR provides a succinct explanation about the form and function of the complements illustrated by examples. It also introduces the different syntactic patterns of the DCs. (25) illustrates how RVCs are presented in PCR.

<table>
<thead>
<tr>
<th>Noun or pronoun</th>
<th>verb</th>
<th>Verb or adjective (complement)</th>
<th>Particle le</th>
<th>Noun and pronoun</th>
</tr>
</thead>
<tbody>
<tr>
<td>他</td>
<td>看</td>
<td>懂</td>
<td>了</td>
<td>这封中文信。</td>
</tr>
<tr>
<td>he</td>
<td>see</td>
<td>understand</td>
<td>PERF</td>
<td>this CL Chinese letter</td>
</tr>
</tbody>
</table>

‘He understood the letter in Chinese.’

*(Practical Chinese Reader, 1980: 198-199) *

IC provides the most comprehensive and elaborated presentation to the RVCs. It introduces the RVC construction in *Level 1 Part 2* and continues into *Level 2*. In the twelve lessons, IC introduces the different aspects of the RVC constructions. Its presentation of RVCs starts with the explanation of individual complements -hao, -zai, -dao, and –gei, followed by the RVCCs, RVCSs, DVCs and their potential forms. A remarkable feature of IC is that it

---

4 The pinyin, English translation, and italics are added by the author. It also applies to the follow excerpts from the textbooks.
summarizes the usages into patterns. For instance, in presenting DVCs, the following patterns are provided:

(26)

Pattern I: Subject + Verb + Place Word + Complement
Pattern II: a. Subject + Verb + Noun + Complement or
b. Subject + Verb + Complement + Noun
Pattern III: Subject + Verb + Complement 1 + Place Word + Complement 2
Pattern IV: a. Subject + Verb + Complement 1 + Complement 2 + Noun
b. Subject + Verb + Complement 1 + Noun + Complement 2

(Integrated Chinese, Level 1 Part 2, 1997: 122-123)

IC also introduces the different functions of the RVC construction. For instance, it introduces three categories of the RVC construction.

(27)

a resultative complement elucidating the verb:

我做完功课再看电视。
Wo zuo wan le  gongke zai kan dianshi.
I do finish PERP homework again look TV.
‘I’ll watch TV after I’ve finished doing my homework.’ (wan=the action will have been completed by the time I watch TV.)

b resultative complement, indicating a new state or a change on the part of the agent of the action

你吃饱了吗?
Ni chi bao le ma?
You eat full PERF QUES?
‘Are you full?’ (sated)

c complement of result, indicating a new state or change on the part of the recipient of the action or the object

你怎么把妹妹打哭了?
Ni zenne ba meimei da ku le?
You how BA younger-sister hit cry PERF?
‘Why did you hit your sister and make her cry?’ (She is crying now.)

(Integrated Chinese, Level 2, 1997: 89-90)
CL’s presentation of the RVC construction is the more succinct. Its presentation of RVCs starts with the DVCs, which is introduced in *Student Book Level 1 Part 1*, and carries on to *Student Book Level 2 Part 1*, which elaborates on the usages of RVCCs, RVCSs, and the potential forms in three lessons.

### 2.6.2 Presentation of verb complements

In addition to presenting different types of RVCs, the textbooks select their own set of complements and elaborated on their usages. Table 2-4 summarizes the complements covered in the books. IC covers the most number of complements in all three types and CL introduces the least number. IC provides the most elaborate explanation to complements, while CL is the less detailed. IC also gives fine-grained explanations of quite a few complements, including *shang*, *kai*, *xia*, *xia-lai*, *xia-qu*, *qi-lai*, and *chu-lai*, giving examples to illustrate their different meanings.
### Table 2-4: Complements introduced in the textbooks

<table>
<thead>
<tr>
<th>Directional complements</th>
<th>PCR: -lai, -qu</th>
<th>IC: -lai, -qu</th>
<th>CL: -lai, -qu</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-shang, -xia, -jin, -chu</td>
<td>-shang, -xia, -jin, -chu</td>
<td>-shang, -xia, -jin, -chu</td>
</tr>
<tr>
<td></td>
<td>-qi, -hui, -guo, -kai</td>
<td>-qi, -hui, -guo, -kai</td>
<td>-qi, -hui, -guo, -kai</td>
</tr>
<tr>
<td></td>
<td>-shang-lai, -shang-qu</td>
<td>-shang-lai, -shang-qu</td>
<td>-shang-lai, -shang-qu</td>
</tr>
<tr>
<td></td>
<td>-xia-lai, -xia-qu</td>
<td>-xia-lai, -xia-qu</td>
<td>-xia-lai, -xia-qu</td>
</tr>
<tr>
<td></td>
<td>-jin-lai, -jin-qu</td>
<td>-jin-lai, -jin-qu</td>
<td>-jin-lai, -jin-qu</td>
</tr>
<tr>
<td></td>
<td>-chu-lai, -chu-qu</td>
<td>-chu-lai, -chu-qu</td>
<td>-chu-lai, -chu-qu</td>
</tr>
<tr>
<td></td>
<td>-hui-lai, -hui-qu</td>
<td>-hui-lai, -hui-qu</td>
<td>-hui-lai, -hui-qu</td>
</tr>
<tr>
<td></td>
<td>-guo-lai, -guo-qu</td>
<td>-guo-lai, -guo-qu</td>
<td>-guo-lai, -guo-qu</td>
</tr>
<tr>
<td></td>
<td>-qi-lai</td>
<td>-qi-lai</td>
<td>-qi-lai</td>
</tr>
<tr>
<td></td>
<td>-dao</td>
<td>-dao</td>
<td>-dao</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Completive complements</th>
<th>PCR: -dao</th>
<th>IC: -hao</th>
<th>CL: -hao</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-hao</td>
<td>-hao</td>
<td>-hao</td>
</tr>
<tr>
<td></td>
<td>-zhu</td>
<td>-wan</td>
<td>-wan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Result-state complements</th>
<th>PCR: -hao</th>
<th>IC: -hao</th>
<th>CL: -hao</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-dong</td>
<td>-dong</td>
<td>-dong</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RVCs in potential forms</th>
<th>PCR: -dong</th>
<th>IC: -xia</th>
<th>CL: -le</th>
</tr>
</thead>
<tbody>
<tr>
<td>-dong ‘move’</td>
<td>-dong</td>
<td>-xia</td>
<td>-le</td>
</tr>
<tr>
<td>-lei</td>
<td>-qi-lai</td>
<td>-qi-lai</td>
<td>-qi-lai</td>
</tr>
<tr>
<td>-quin</td>
<td>-chu</td>
<td>-ji ‘reach’</td>
<td>-ji ‘reach’</td>
</tr>
</tbody>
</table>

#### 2.6.3 Presentation of meaning polysemy

PCR provides explanations to different meanings of a selected set of complements: hao, dao, zhu and shang. For instance, PCR introduces three different meanings of dao. As is shown in (28), the first meaning introduced by PCR is the basic meaning of dao as ‘arriving at a certain location or time’. The second and third meanings are the metaphorical usages of dao. The meaning of ‘indicating the successful conclusion of an action’ is metaphorical because with the

---

5 For the meaning of these complements, please refer to the section 2.1 Definition and types of RVCs.
use of *dao*, actions are conceptualized in a similar way as how ‘arriving at a location or time point’ is experienced by people in the spatial and temporal domains. The third meaning of *dao* as ‘with regard to’ or ‘concerning’ refers to people’s mental activities, deviating more from the meaning of *dao* as ‘arrive’. PCR does not distinguish the literal meaning and the metaphorical meaning of the complements; rather, it adopts a dictionary approach and does not associate the different senses to build up a meaning network of the RVCs.

(28) *dao*

**a**  
*dao* indicates the continuation of an action up to a certain point or a certain time.  
我,回到家就睡觉了。  
Wo *hui dao* jia jiu shuijiao le.  
*I return arrive home then sleep PERF*  
‘After returning home, I went to sleep.’

**b**  
*dao* ‘indicates the successful conclusion of an action’.  
他,买到那本书没有?  
Ta *mai dao* na-ben shu meiyou?  
*He buy arrive that-CL book no*  
‘Did he *buy* that book?’

**c**  
When *dao* is combined with verbs such as *shuo* ‘speak’, *tan* ‘talk’, *xie* ‘write’ or *wen* ‘ask’ etc, as a resultative complement, *dao* means ‘with regard to’ or ‘concerning’.  
说到这件事儿  
*shuo dao* zhe-jian shi-er  
*speak arrive this-CL thing*  
‘speaking of this’

*(Practical Chinese Reader, 1980: 220, 221, 266)*

IC gives explanations to the most number of complements. It particularly focuses on the extended meanings of the DCs. It distinguishes the three meanings of DCs: the directional DC which focuses on the literal meaning of the DCs, the resultative DC which is the extended meaning of DCs, and the state-indicating DC which expresses the initiation of a new state. For instance, *shang* in *jia shang* ‘add up’ in sentence (29a) is different from the directional *shang*.  
*Dao* in *xue dao* ‘learn arrive’ in sentence (29b) is related to the basic meaning of *dao* as ‘the
continuation of an action to a certain point or time’, but in the context refers to the activity of ‘study’.

(29)

a  先生，加税，一共是八十块四。
   Xiansheng, jia shui yi-gong, shi ba-shi kuai si.
   Sir, add ascend tax one-together be eight-tan CL four
   ‘Sir, with tax, it’s three hundred eighty-six and forty cents.’

b  其它的课...也学到了不少东西。
   Qita de ke...ye xue-dao le bu-shao dongxi.
   other DE class...also study-arrive PERF not-little stuff
   ‘From the other classes, (he) also learned a lot.’

(Integrated Chinese, Level 2, 1997: 124)

IC’s explanation of the third meaning of DCs showcases even better its commitment to an emphasis on the meaning polysemy and metaphorical uses of DCs. It introduces two meaning extensions of DCs. Some DCs (for example shang, qi, qi-lai and kai) indicate ‘a change from inaction to action, the initiation of an action and its continuation’ (Integrated Chinese, Level 2, 1997: 256). Kai qi-lai ‘drive rise-come=begin to accelerate’ in sentence (30a) and chang shang ‘sing ascend=start to sing’ in sentence (30b) belong to this usage. Some DCs can also indicate ‘a change from a dynamic to a static state’ (Integrated Chinese, Level 2, 1997: 257) as illustrated in sentence (30c).

(30)

a  汽车开得快起来了。
   Qiche kai de kuai qi-lai le.
   Car drive DE fast rise-come PERF
   ‘The car began to accelerate.’

b  他一回家就唱上了。
   Ta yi hui jia jiu chang shang le.
   He once return home then sing ascend PERF
   ‘The minute he got home he started to sing.’
Despite its recognition of the different senses of complements and the distinction of the metaphorical meaning from the literal meaning, IC does not attempt to relate the different senses into an integrated semantic network; but more than once it suggests that the different senses should be treated as homonyms and memorized as individual words. For instance in introducing the resultative meaning of the DCs "save rise-come=save or store", "put no-descent=there is not enough room for", and "think arrive=to have thought of", IC stated that:

“The meaning of every directional complement used to indicate result is definite and is related in some way to its original directional meaning. However, the collocation of a verb and directional complement is usually not random but fixed. As a result, one has to remember the combinations one by one as individual words.” (Integrated Chinese, Level 1 Part 2: 202)

Although we can explain the meaning of each directional complement, it is better to treat the complement and its preceding verb as one word. We will list them as such in the vocabulary sections. (Integrated Chinese, Level 1 Part 2: 124-5)

In its brief presentation of individual complements, CL focused on the literal meanings and did not introduce the many senses of the complements. The only exception is the DC qi-lai. Although it introduces the metaphorical meaning of qi-lai, these usages are only introduced as idiomatic expressions.
2.6.4 Summary

A review of the mainstream textbooks shows that RVCs are at best presented in a dictionary lexical approach, in which the different senses of a RVC are treated as homonyms and no attempt is made to arrange the different senses into a meaningful semantic network. This runs counter to linguistic findings that RVCs are linguistically motivated and the different senses of a RVC are semantically related, forming meaning polysemy rather than lexical homonyms. For instance, Shi (1993) and Ren & Yu (2007) have shown that the different senses of the DCs V-shang ‘to ascend’ and V-xia ‘to descend’ are meaningful extensions from the prototypical meaning of shang and xia as independent verbs. And due to the fact that shang and xia denote the opposite directional meanings of ‘moving upwards’ and ‘moving downwards’, their different senses also demonstrate an opposite but complementary semantic pair, showing that linguistic expressions are motivated from people’s bodily experience with the world. Just as people apply the familiar in understanding the unfamiliar, words can be extended from referring to entities in the spatial domain to concepts in the temporal and the mental domains. In addition, studies on the grammaticalization of DCs have also provided evidence that the different meanings of a DC can be traced back to its prototypical meaning. (Pei & Sun, 2008)

The dictionary lexical approach to RVCs is inconsistent with the insights gained by linguistic inquiries. The ‘piecemeal’ manner of presenting RVCs increases the cognitive load of learners. The few pedagogical research that has been conducted to directly benefit teaching RVCs, such as Thompson (1972, 1973), Light (1977), Lu (1984) and Wang (2002), does not reflect the insights gained by theoretical linguists either. All this speaks to a necessity of research on RVCs in a more systematic and effective way.
2.7 Summary

In this chapter I have explained that RVCs are an important compound structure in Chinese that encode the events of motion and state change. DVCs denote the direction of action or the path of motion. RVCCs denote the completion of an action or event. RVCSs denote the resulting-state of an action or event. Due to its encoding of results, RVCs are one of the primary means of aspect marking in Chinese. In fact RVCs contribute to both situation and viewpoint aspects. In addition to marking perfectives, some RVCs can also mark imperfectives and continuative aspect. RVCs are also a very productive compound structure, due to the fact that both components of the compound can practically take a variety of lexical choices. On top of that, the same V1 can take different V2s to express completely different meanings, and vice versa. In the meantime, there are constrained in the composition of the compounds. For instance, the V2 of DVCs is a close set of 24 members, and that of RVCSs is a close set of less than 10 members. The V1s they take are also constrained. Syntactically, RVCs usually occur as an inseparable whole, meaning that nothing can be inserted between the V1 and the V2. However the DVCs observe an important syntactic variation. That is, when the V2 consists of either lai ‘come’ or qu ‘go’, the direct object needs to directly follow the V1.

RVCs pose challenges to CFL learners whose L1 is English (Meng, 1998; Xing, 2006). In encoding motion events, Chinese is categorized as an equipollent-framed language, while English is a satellite-framed language. The typological differences result in the different lexicalization patterns of the two languages in encoding motion events. English tends to elaborate on the manner of the motion and ignore the path of the motion, while Chinese puts equal emphasis on the manner and path of the motion. The dual role of the verbs as both independent verbs and directional complements also causes difficulty for learners to acquire. Chinese and English are also typologically different in encoding state change. English is reported to have an
elaborated system of verbs. Chinese, in contrast, has a generous number of activity verbs, but a smaller number of achievement and accomplishment verbs. To form achievement or accomplishment verbs, one needs to add a RVC to an activity, achievement or stative verb. The asymmetry in denoting results makes it difficult for learners to acquire the RVCs. What’s more, a good number of completive complements has lost its lexical meaning and function more like a grammaticalized aspect marker to indicate completion or termination. Due to the fact that English does not always have an equivalent structure, RVCs constitute a learning difficulty for English L2 learners of Chinese. (Liu, 1998; Meng, 1998; Wang, 2002; Yang, 2003a, 2003b)

The literature on L2 acquisition of CFL learners has been mainly on the acquisition of DVCs, which is an important category of RVCs but still does not represent the entire construction of RVCs. The study of DVCs alone does not equal to the understanding of the RVCs as a semantic category of result and the dynamics in developing mastery of the three types of RVCs simultaneously. In this dissertation, I will investigate RVCs as a coherent category of result. Besides the lexical features of RVCs, which have been the focus of most studies on the topic so far, I will survey the syntactic and semantic aspects as well. I will incorporate constructs from cognitive semantics to define and categorize the literal meaning, extended meaning, and metaphorical meaning of RVCs. I will also incorporate the two-way aspect theories to explore how CFL learners develop their understanding of the event structures.
Chapter 3

Research Methods

This dissertation adopts a learner corpus approach to investigating how CFL learners develop their knowledge and mastery of the Chinese RVCs. A learner corpus consisting of essays written by learners of three proficiency levels was compiled. Instances of the RVCs were identified and annotated; the lexical, syntactic and semantic patterns of each type of the RVCs were described. The characteristic features of the learners at different proficiency levels were compared in their use of RVCs. A comparable collection of written essays produced by Chinese native speakers (NSs) was used as the benchmark criteria for learners’ performance.

This chapter starts with a rationale for adopting a corpus-based approach to investigating learner language. It is followed by an introduction to the data that the study was built upon and how the data were collected from different sources. I will explain the compilation and composition of the data, followed by the annotation and error tagging schemes developed specifically for the purpose of analyzing the RVCs. Because the subsequent chapters (Chapter 4, 5 and 6) will elaborate on the acquisition of the three types of RVCs respectively, I will conclude this chapter by presenting the overall distribution of RVCs in the corpus as a way of preparing the reader for the analysis to follow.

3.1 Learner corpora and the analysis of learner language

In this section I explain why the dissertation takes a corpus-based approach to investigating the processes of CFL in mastering the Chinese RVCs. I will give a brief overview to
corpus linguistics in general and learner corpora in particular. I will then introduce the
development of learner corpora and related research in the field of Chinese as a Second/Foreign
Language (CSL/CFL). It is followed by a review of methods employed by scholars who
conducted empirical research on the L2 acquisition of the RVCs, arguing for the evident
advantages of a corpus-based approach to address the research questions of this study.

3.1.1 Corpus linguistics

Over the past few decades, the field of linguistics has witnessed a significant paradigm
shift from the studies of language as an abstract mental representation to the study of language in
actual use. Corpus linguistics, which bases its analyses on the extensive use of electronically
stored and automatically processed large collections of language texts, makes it possible to
systematically study the patterns of natural language use. In the words of John Sinclair (1991, p.
171), a corpus is ‘a collection of naturally occurring language text, chosen to characterize a state
or variety of a language’. The first pre-electronic corpus was compiled in the 1950s, among
which the most influential is the Survey of English Usage (SEU) Corpus. With the fast
development and widespread use of personal computers, a corpus nowadays typically refers to an
electronic collection of a large quantity of language texts. Compared with other linguistic
approaches, a corpus-based approach to linguistic investigations has several evident advantages.
It bases the linguistic analysis on naturally occurring data, rather than intuition or introspection.
Corpus data is empirical, which provides a solid foundation for revealing the actual patterns of
language use in natural contexts. It also utilizes a large and principled collection of texts as the
basis for analysis, making it easier to carry out comparisons between different varieties and
genres of the language. With the aid of computers and data processing software, it makes it
possible to work on a large amount of data using both automatic and interactive techniques.

(Biber, Conrad & Reppen, 1998)

A corpus provides a wealth of information to linguistic investigation that go far beyond what a human analyst can manage manually. The common techniques of analysis in corpus-based investigation include frequency list, concordance, and collocation. (Kennedy, 1998; Hunston, 2002) Frequency is the token count of a single item (a word, phrase or structure). Using corpus concordance programs, words in a corpus can be arranged into a frequency list so that comparisons can be made between corpora of different genres, registers and linguistic variations. The frequency of given words can also be compared across corpora to determine if there are variations in frequency and use. Another important function of concordance programs is concordance lines, which automatically retrieve all instances containing a certain word or phrase. It brings together many instances of a word or phrase, allowing the user to observe regularities and patterns in language use. The concordance line may provide empirical evidence about the more typical and central usage and the less typical usage of a word or phrase. When words of similar meanings are compared, a concordance will bring out the subtle differences in the linguistic contexts and the meanings with which these words are used. Another example of how the data in corpora can be manipulated is the calculation of collocation in the form of diagrams and trigrams. Collocation is the statistical tendency of words to co-occur. It can indicate pairs of lexical items, as well as lexical items and grammatical items. Thus, a corpus-based analysis can process data on three different levels: the patterning of particular words or phrases, the co-occurrence of words, and sets of words that are syntactically or semantically combined.

Annotated corpora provide people with even more information. (Leech, 1991) Basic corpus annotation techniques involve word-class tagging and parsing. (Kennedy, 1998) The original raw text can be annotated to show the word class of each word in the text by means of a grammatical tag or label attached to each word. A POS (part of speech) tagged corpus can be
linguistically parsed, which involves identifying and labeling the function of each word or group of words in a phrase or sentence. A parsed corpus provides a labeled analysis for each sentence to show how the various words function. Corpora can also be parsed to show the sentence structure and the function of the different word classes. There are many publically available corpus search and retrieval software (for instance the commercially available software *Wordsmith* and the free online accessible software *AntConc*), most of which support generating wordlists, concordances and collocates. Other advanced programs for more sophisticated analysis include tools for automatically analyzing lexical and syntactic complexity. (Lu, 2010; forthcoming) Most researchers use a combination of commercially available corpus software and manual analysis to satisfy their research needs.

Researchers choose the appropriate type of corpus depending on the research purpose. A general corpus refers to a corpus that consists of language data covering a wide range of language variations, genres and contexts. It may include written or spoken language, or both, and texts produced in one language variety or in many different varieties. A general corpus usually has larger size than a specialized corpus. Some well-developed general corpora include the British National Corpus (100 million words), the Bank of English (450 million words), and Corpus of Contemporary American English (425 million words). A specialized corpus refers to a collection of texts of a particular type that is representative of the language use in a given type of text or context, such as newspaper, textbooks, casual conversations or written essays. It is usually smaller in scale and serves specific purposes of linguistic analysis. Some well-known specialized corpora include the Michigan Corpus of Academic Spoken English (MICASE), which represents the spoken registers of English in a US academic setting, the Lancaster Spoken English Corpus (SEC) which consists of 52,000 words of British radio broadcasts from the mid 1980s, and British Academic Spoken English (BASE) Corpus, which collected lectures and seminars recorded in different universities in the UK. Comparable corpora refer to two or more corpora in different
languages or in different varieties of a language. They are designed along the same lines as the
general corpora, for example they will contain the same proportions of newspaper texts, novels or
casual conversation. Meanwhile, comparable corpora that represent different varieties of the same
language can be used to compare those varieties. The International Corpus of English (ICE) is
comparable corpora of 1 million words of several different varieties of English. Parallel corpora
refer to two or more corpora in different languages, each containing texts that have been
translated from one language into another or texts that have been produced simultaneously in two
or more languages. They can find applications in searching for the potential equivalent
expressions in each language in the investigation of the differences between languages. The other
type is learner corpora, which is of interest to this dissertation and will be discussed in detail in
the next section.

3.1.2 Learner corpus analysis

Learner corpora are ‘digital representations of the performance or output, typically
written, of language learners.’ (Barlow, 2005, p. 335) Learner Corpus Analysis (LCA) is the use
of learner corpora as the basis for describing and analyzing learners’ language production.
Written learner corpora are more common than spoken learner corpora due to practical reasons.
The compilation of spoken corpus usually has more stringent demands on collecting, storing and
processing of data, and often involves more manually work and longer compilation circle.
Written learner corpora are relatively less difficult and more controllable in data collection, and
therefore take less time to compile. Since the early 1990s, a considerable amount of LCA
research has emerged and new understandings about how learners acquire a second language
have been gained from this approach that would have not been made possible by other
approaches. The largest collection of learner corpora is the International Corpus of Learner
English, which started in the 1990s by Granger at the University of Louvain to collect argumentative essays written by English learners from different mother tongues.

LCA shares many commonalities with Error Analysis (EA), an analytical approach to learner language (primarily learner errors) that was frequently used in the 1970s. The rise of EA is closely associated with ‘nativist views of language learning and the emergence of interlanguage theory’ (Ellis & Barkhuizen, 2005, p. 54). Interlanguage, a term coined by Selinker (1972), refers to a grammatical system that a learner constructs mentally in learning a new language. The interlanguage is different from the native language or the target language in that it contains features both from the L1, the L2 as well as items not observed in either. Error in EA is defined as ‘a linguistic form or combination of forms which, in the same context and under similar conditions of production, would, in all likelihood, not be produced by the speakers’ native speaker counterparts’ (Lennon, 1991, p. 182) An EA approach identifies errors in learners’ language production gauged by a NS standard, analyzes the reasons for these errors as either interlingual (differences between the first language and the target language and consequently the transfer from the first language) or intralingual (characteristics of learners that are not due to L1 or L2 influences). What LCA and EA have in common is a shared emphasis on the deviations, or errors, that learners produce in developing their mastery of a target language. Both approaches have developed systematic and rigorous procedures for identifying, describing, analyzing and explaining learner errors.

On the other hand, as a new methodological and analytical approach that bridges learner language analysis and corpus linguistics, LCA has much more to offer in improving people’s understanding of learner language. LCA makes use of two kinds of data: learner data and NS data. Learner data are preferably collected from learners of different L1 (first language) backgrounds and proficiency levels. The NS data are collected from the L1 and the L2 (second/target language). Similar to a native corpus, a learner corpus can be composed of ‘raw’
and plain text data without any annotation; it can also be annotated with added information such as part-of-speech and syntactic tagging. Unlike a native corpus, a learner corpus is often annotated with error tags. An error tag is an annotation added to the corpus that explicitly marks an error. An error-tagged learner corpus enables researchers to search for different types of errors and may also allow searches of correct target forms in addition to the actual, possibly erroneous forms. Currently there are two ways of error tagging in learner corpora. The traditional approach is to develop an error tagging system based on a pilot analysis of the learner corpus and then manually apply the error tags to the corpus. The other approach is to use automatic error tagging software or programs, such as the error-coding program TagEditor by Tono et al. (2001) which automatically tag errors in Japanese-speaking learners of English. Even with the automatic tagging programs, researchers more often than not still need to develop their own tagging schemes and manually apply the tags to address their specific research purposes.

The most influential research paradigm of LCA is Contrastive Interlanguage Analysis (CIA) proposed by Granger (1998a, 1998b, 2002, 2009). CIA involves both quantitative and qualitative comparisons between the native language and learner language, and different learner languages. The comparisons between NSs and learners aim to reveal features that distinguish learners and NSs. Besides identifying plain errors, LCA can identify lexical and grammatical uses that are over used or under used, which sheds light on the non-native aspects of learner language. The comparisons between learners can be used to highlight aspects of language use and learner development. (Granger, 2009) By comparing learner corpora covering different variables (age, proficiency level, L1 background, task type, learning setting, etc), it is possible to evaluate the effect of these variables on learner performance. Once corpus-based data on particular characteristics of interlanguage have been analyzed, it is possible to look for explanations, which typically involve factors such as L1 transfer, general learner strategies, paths of interlanguage
development, intralingual overgeneralization, input bias, or genre/register influences. (Barlow, 2005)

A considerable amount of research based on learner corpora, especially the International Corpus of Learner English (ICLE), has been carried out on a variety of lexical and grammatical topics, including, but not limited to, complement clauses (Biber & Reppen, 1998), tenses (Granger 1999; Housen, 2002), modals (Aijmer, 2002), adjective intensifiers (Lorenz, 1998) and collocations (Nesselhauf, 2005). Some recent development of a LCA approach to the acquisition of languages other than English includes pragmatic development in the use of German particles (Belz and Vyatkina, 2006; Vyatkina, 2007) and the acquisition of motion verbs by American, English-speaking, learners of Russian (Driagina, 2007).

Despite the promises that learner corpora offer to the field of SLA, it has some challenges to overcome before it can achieve its full potential as a tool for linguistic inquiry of learner language. First, it is a time-consuming and labor-intensive process to compile a learner corpus. To construct learner corpora that are truly representative and comparable involves a tremendous amount of collaborative work and substantial financial support. Second, there is the issue of objectivity and accuracy in tagging, especially error tagging, because the portion of work is mainly done manually. Finally, if the data are not sufficiently representative of the performance of the target population, the conclusions drawn from such an approach can be unreliable. Fortunately many of these challenges have been met by recent developments in LCA, and it does not underscore the potentials of LCA in SLA research.

Widdowson (2007) discussed the role of corpus analysis in language teaching and the relationship between the two. According to him, corpus collects language that has been actually performed in a specific context. A distinction should be made between ‘what is actually performed’ and what is linguistically appropriate and possible. It is a critical to relate ‘what is performed’ to ‘what is pedagogically feasible’. (p. 219) I agree with Widdowson on his
comments on the challenges in incorporating corpus into language teaching. Although corpus
provides learners with abundant ‘authentic’ materials so that they are able to observe the language
patterns and real language use, the vast amount of information can be simultaneously
overwhelming. Therefore it is dangerous to simply expose learners to the vast amount of corpus
data and let them ‘discover’ the language on their own. Corpus can be a good resource for
language learning and teaching, but it cannot be the only source. How to apply corpus data into
language classrooms is a whole new topic worthy of exploring.

3.1.3 LCA and Chinese as a Second Language

As early as the 1990s, endeavors have been made in China to collect students’ written
essays and construct learner corpora of Chinese. Since 1995, Professors Chen Xiaohe and Chu
Chengzhi at Beijing Language and Culture University have led a team in the construction of the
Chinese Interlanguage Corpus. To date the corpus has collected 5,774 essays written by 1,635
foreign students from 96 different countries studying Chinese in China. The raw text data
collected were approximately 3,528,988 characters, among which one thousand seven hundred
and thirty-one essays (1,041,274 characters) have been annotated. The annotated data were POS
tagged, parsed and error tagged. Information about the students was documented, including name,
gender, age, nationality, L1, Chinese proficiency level, textbooks used, and the writing task. (Chu
and Chen, 1993; Chen, 1997) Other similar corpora include the CSL Interlanguage Corpus
constructed by Nanjing Normal University and the CSL Interlanguage Corpus developed by Jinan
University (600,000 characters by raw count, and 400,000 characters’ processed data). Based on
these corpora, several research projects have been conducted which provided important insights
into how Chinese learners with different L1s acquire Chinese in an immersion environment. In a
review of literature on CSL over the past two decades, Shi (2006) summarized the research and

However up until now none of these Chinese L2 corpora are accessible to the public. Moreover, the corpora primarily focus on CSL learners in an immersion context, which may not be easily transferred to an understanding about students who are learning Chinese in a foreign context, such as young adult learners in North America. Despite the evident advantages of a LCA approach and the fact that LCA has been carried out for almost two decades, there are very few corpora that systematically document CFL learners’ language use. Students who learn Chinese in the North America constitute a specific learner group, because they primarily study Chinese in a classroom context, where their main source of input is from classroom instruction. With regard to this learner group, the only corpus, to my knowledge, is the UCLA heritage learner corpus (Ming & Tao, 2008), which collects written essays by Chinese heritage learners at the intermediate level. Still this corpus primarily documents the language use of learners who have a Chinese background, whose developmental profiles of Chinese are completely different from those of CFL learners.
In view of a lack of learner corpora on CFL learners, one of the major aims of this dissertation is to construct a written corpus of English-speaking CFL learners, which not only serves as data for the current project, but is also an important resource for future research that may shed light to many important aspects of lexical, syntactic and discourse development of the L2 Chinese. To this end, this corpus needs both cross-sectional data that represent learners of different proficiency levels and longitudinal data that trace the moment-to-moment development of individual learners over time. It also needs to cover a variety of topics, genres and writing tasks in order to conduct meaningful comparisons on these dimensions.

3.1.4 LCA and the acquisition of RVCs

In the literature review chapter I have explained that up to now all the studies on the L2 acquisition of RVCs are on directional complements (DC). The methodologies adopted in those studies can be summarized into three approaches. The earlier attempt of analyzing the use of DCs is characterized by incidental collection of errors. For instance, Li (2000) collected the written assignments and exercises produced by intermediate learners of Chinese in her classes in China. Following the tradition of EA, she identified the underuse of verbs and DCs, the misuse of DCs, and other grammatical errors. The second approach is a corpus-based approach represented by Yang’s series of studies on Chinese DVCs. (Yang, 2003a, 2003b, 2004) Yang’s data were from the Chinese Interlanguage Corpus. He retrieved instances of DCs produced by students at two proficiency levels: beginning and intermediate-advanced learners. Based on the syntactic and semantic features of the DCs, Yang created ten categories encompassing the distinctions between simple DCs and complex DCs, DCs followed by an object or those without an object, DCs in the literal meaning and those in the extended meaning. Based on his analyses of learners whose L1s are respectively Korean, English and Japanese, Yang proposed an acquisition order for the DCs.
While Yang’s studies were robust, he ignored the cases when a DC is expected but not used by learners. In other words, the underuse of DCs in obligatory occasions was not analyzed. Also Yang’s study is a cross-sectional study which provided insights about the group means and general trends, but had little to say about address the developmental process. The most recent study on the acquisition of DCs is Wu (2011). Wu employed a controlled composition task and a picture-cued written task in eliciting students’ production of DCs. Students of different proficiency levels and cultural backgrounds were selected, including non-heritage and heritage learners. The elicitation tasks ensured that students produced the target forms in a controlled manner. On the other hand, it only explored the use of DCs in their literal meaning, i.e. DCs as path particles. It did not address how learners develop their knowledge of the different meanings of DCs, which, in my opinion, poses the biggest challenge to CFL learners in their mastery of DCs.

Adopting a LCA approach using the developmental and cross-sectional data from the CFL corpus I constructed, this dissertation aims at a comprehensive understanding about how CFL learners develop their knowledge of RVCs as a whole, how they acquire each type of RVCs in the lexical diversity, syntactic complexity, and semantic expressiveness. It describes, analyzes and explains learners’ language development based on their language production without inclination for any theoretical stance.

3.2 Research design

3.2.1 Data sources and data collection

The overall goal of this dissertation is to provide a comprehensive understanding of how CFL learners across different proficiency levels and linguistic backgrounds acquire the RVCs. To
this end, I collected data from three different but complementary learner groups: lower-intermediate learners (LIL), higher-intermediate learners (HIL) and advanced learners (AL). I chose to start with lower-intermediate learners not beginning learners is because RVCs are usually introduced in the second or third semester of Chinese study. Lower-intermediate learners are the most suitable group who has been exposed to the RVCs. A comparable NS corpus is used as a benchmark for learner performance. In what follows I will explain each data source in detail.

The CFL learner data of lower-intermediate level

The CFL learner data of lower-intermediate level were collected from students enrolled in a third-semester Chinese course listed as ‘Chinese 003: Intermediate Chinese’ at a large public northeastern university. This course is the third in the basic Chinese language series that students are required to take to fulfill the 12-credit foreign language requirement. The course primarily focuses on the development of the four language skills, and is 15 weeks long. The class meets five times a week for 50 minutes each meeting. At the time of data collection, the enrollment was four sections with about 20 students each. The students were mostly junior undergraduate students from different majors and areas of concentration, such as business, international politics, and some science and engineering programs. The majority of the students were American English L1 speakers; in each section there were a few international students with a different L1 than English. Most students had no prior knowledge of Chinese, nor had they travelled to China. There were no heritage students in the classes because those students were enrolled in a different language track. The textbook used in the course was *Chinese Link Level 2 Part 1* (Wu, Yu & Zhang, 2008a). In the textbook, RVCs were systematically introduced in the grammar sections of Lesson1, 4, and 7. These learners are regarded as lower-intermediate because they have received two semesters’ formal instruction on Chinese language, with very limited spoken and written abilities.
After obtaining written consent from 57 students enrolled in the four sections, the data collection was conducted over the entire academic semester of fall 2009 (August – December 2009). A questionnaire on the students’ language background was distributed to gather information about their prior knowledge with Chinese and exposure to the language except for classroom instruction. With the assistance of the instructors, the original copies of the participants’ written essays from their workbook assignments, tests, and online practices were collected. Table 3-1 summarizes the topics of the essays, the types, and time of the assignments. The writing topics were mostly based on the curricular and the frequency of writing was about once every two weeks. Because most essays were given as assigned homework, students were able to work on these assignments without time constraint and were allowed to use textbooks, dictionaries or other reference materials. These essays were photocopies before returned to the students. The electronic copies of essays submitted online are collected as electronic documents. In line with the curriculum, the writing activities covered a wide range of topics. Due to students’ limited language proficiency, most topics were descriptive or narrative. Photocopies of the collected essays were later manually entered into electronic files, which constitute the subset of data for CFL learners of lower-intermediate level.

Table 3-1: Writing topics for the CFL learners of lower-intermediate level

<table>
<thead>
<tr>
<th>Writing topic</th>
<th>Type of writing</th>
<th>Time of writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 A travel experience</td>
<td>Workbook assignment and online essay</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>2 A letter to parents</td>
<td>Online essay</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>3 An invitation letter</td>
<td>Workbook assignment</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>4 My hometown</td>
<td>Workbook assignment</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>5 A thank-you email</td>
<td>Workbook assignment</td>
<td>Oct. 2009</td>
</tr>
<tr>
<td>6 A banking experience</td>
<td>Workbook assignment</td>
<td>Oct. 2009</td>
</tr>
<tr>
<td>7 A travel plan for the winter break</td>
<td>Online essay</td>
<td>Nov. 2009</td>
</tr>
<tr>
<td>8 Introduce a Chinese movie</td>
<td>Workbook assignment</td>
<td>Nov. 2009</td>
</tr>
<tr>
<td>9 Stay fit</td>
<td>Workbook assignment</td>
<td>Dec. 2009</td>
</tr>
<tr>
<td>10 Free topic</td>
<td>Script of the final oral presentation</td>
<td>Dec. 2009</td>
</tr>
</tbody>
</table>
The CFL learner data of higher-intermediate level

The CFL learner data of higher-intermediate level were collected from students enrolled in a fifth semester Chinese course listed as ‘Chinese 401: Advanced Speaking’ at the same university. After fulfilling the basic Chinese language series, students have the option of continuing their studies to pursue a minor or major in Chinese. Chinese 401 is designed to help students further their oral communication skills through discussions of aspects of contemporary Chinese culture. At the time of data collection, the assigned textbooks were *Chinese Link Level 2 Part 2* (Wu, Yu & Zhang, 2008b). The composition of students in Chinese 401 is similar to that of Chinese 003, with the exception that students with a Chinese background were permitted to enroll in the course, as are students who have had study-abroad experience in China. Two sections of Chinese 401 were offered, with about 18 students each. Because these students have received at least four semesters of formal instruction they were deemed to be at the higher-intermediate level.

The data collection also took place in the fall 2009 academic semester (August – December 2009). After distributing a questionnaire on the students’ language background, the heritage learners were excluded, which makes a total of 30 qualified participants. With the assistance of the instructors, the original copies of the participants’ written essays from their workbook assignments, tests, and online practices were collected. Photocopies were made before the essays were returned to the students. For those essays that were submitted electronically, electronic copies were collected. The writing topics were in line with the syllabus, covering a wide range of topics. Because these students have received formal instruction on RVCs for more than a year, I gave them two extra writing tasks (the frog story and the pear story) as online assignments that specifically elicited their use of the RVCs, in particular the directional complements. All essays except for the last one were assigned as homework; therefore students
were able to use reference materials and take their time in writing. Table 3-2 summarizes the topics of the essays, and the types and time of writing. The photocopies of these essays were later put into electronic texts, which constitute the subset of data CFL learners of higher-intermediate level.

Table 3-2: Writing topics for the CFL learners of higher-intermediate level

<table>
<thead>
<tr>
<th>Writing topics</th>
<th>Type of writing</th>
<th>Time of writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 An unpleasant experience</td>
<td>Workbook assignment</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>2 A thank-you card</td>
<td>Workbook assignment</td>
<td>Sept. 2009</td>
</tr>
<tr>
<td>3 A diary entry</td>
<td>Workbook assignment</td>
<td>Oct. 2009</td>
</tr>
<tr>
<td>4 A prose</td>
<td>Workbook assignment</td>
<td>Oct. 2009</td>
</tr>
<tr>
<td>5 Frog story</td>
<td>Online assignment</td>
<td>Oct. 2009</td>
</tr>
<tr>
<td>6 An experience of being</td>
<td>Workbook assignment</td>
<td>Nov. 2009</td>
</tr>
<tr>
<td>misunderstood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Pear story</td>
<td>Online assignment</td>
<td>Nov. 2009</td>
</tr>
<tr>
<td>8 Picture description</td>
<td>Final written test</td>
<td>Dec. 2009</td>
</tr>
</tbody>
</table>

The advanced learner data

At the university where data were collected from lower-intermediate and higher-intermediate learners, it was very difficult to find a sufficient number of advanced CFL learners to construct a comparable corpus to the other two proficiency levels. This is because the Chinese major has only recently been instituted and only about ten students had opted to pursue this option at the time of the study. Therefore, I used a subset of the HSK Essay Corpus to serve as the advanced learner data.

China’s Hanyu Shuiping Kaoshi, known as HSK or the ‘Chinese Proficiency Test’, is a standardized test at the national level designed and developed by the HSK Center of Beijing Language and Culture University to assess the Chinese proficiency of non-native speakers (foreigners, overseas Chinese and students of Chinese national minorities). HSK provides tests to learners of different proficiency levels: the basic Chinese proficiency test (HSK Basic), the elementary and intermediate Chinese Proficiency test (HSK Elementary-Intermediate), and the
advanced Chinese proficiency test (HSK Advanced). It is held regularly both inside and outside of China each year. Certificates of HSK are issued to those who have secured the required scores. The HSK Advanced is for learners who have already completed at least four years of Chinese instruction or who have been immersed in Chinese-speaking environments for more than 3000 hours. A mastery of about 8000 words, equivalent grammar and culture knowledge are the prerequisites for taking this test. The HSK Advanced has an essay section, in which test takers are required to complete an essay on a given topic within 30 minutes.

The HSK Corpus is an online accessible and searchable database constructed and managed by the Beijing Language and Culture University. It collects essays written by test takers of HSK Advanced from 1992 to 2005. The HSK Corpus ver1.1 consists of 11,569 essays with approximately 4.24 million Chinese characters. Each essay in the corpus is annotated with a header that provides information about the test taker: nationality, gender, HSK written score, HSK spoken test score, HSK listening score, HSK reading score, HSK comprehensive expression score, and HSK total score, and the level of certificate. The corpus is error tagged, in that the wrong characters, omission of characters, redundant characters, pinyin, unrecognizable characters, punctuation errors, grammatical errors, the traditional characters are tagged, and the correct target forms are provided. It also tags errors at the lexical, grammatical and discourse levels. Since this study focuses primarily on L2 English-speaking learners in North America, I extracted written essays produced by test takers who registered their nationality as either the United States or Canada. Altogether 198 essays were extracted: 118 produced by Americans and 80 by Canadians.

The advantage of this data set is that it represents a group of learners at very advanced proficiency level, which can in some way complements the data I collected. A word of caution is

---

that this data is different from the previous data sets in several ways. First is the nature of the essays. The first two data sets are untimed writing tasks in which students were not constrained by time and had access to textbooks, dictionaries, and other reference materials. The HSK data set is based on timed writing tasks, in which test takers have no access to any reference materials and perform under a strict time constraint. Also due to the nature of the test, HSK essays are more formal in genre, calling for the use of academic vocabulary and discourse. The writing topics of the HSK essays contain more argumentative writings, whereas those of the intermediate learners are mainly narrative or descriptive. Moreover, unlike the data collected at the previously-mentioned institution which is longitudinal in nature, the data from HSK is not longitudinal, and no development can be observed. Therefore conclusions need to be drawn very carefully when this group of learners is compared with the other learner groups. Differences are expected in the frequency of certain RVC compounds, as well in their choice of syntactic structures and semantic meanings.

The Chinese native speaker data

To establish a benchmark for gauging learners’ performance, I collected 100 essays that higher school native-speaking students in China wrote for the National Matriculation Test (NMT) from 2005 to 2010. NMT has long been regarded as the highest-stakes national test in China. It has a verbal section which requires the students to write an essay of about 800 words on a given topic within one hour. Students who wrote these essays are usually third-year high school students (equivalent to Grade 12 in the United States), who are assumed to have advanced proficiency in writing. Nowadays many of these essays, especially those receiving near full scores, are posted on the Internet for people to emulate or appreciate. My reason for using NMT essays as my NS reference data set is because it is comparable to the advanced learner data set in that they are both timed writing on given topics and cover a wide range of genres.
The NMT essays or model essays were collected from official educational or NMT preparation websites zhongguo jiaoyu zaixian (China Education Online) and renmin wang (People). The genres in this data set covered descriptive, narrative, and argumentative texts. Because the average NMT essay is about 800 words in length, I collected 100 essays so that this subset is similar in size to the subsets of the learners’ data. A drawback with this data source is that information about the student writer is missing in order to protect students’ confidentiality.

3.2.2 Corpus compilation

After the written essays were collected from the lower-intermediate and the higher-intermediate learner groups, the photocopies were given to native speakers of Chinese to be typed into electronic texts that were stored on computers. Each essay was saved as a separate text file. The file name recorded information about the level and the writing system used (simplified or traditional characters), and a number indexing the writing tasks. To meet the requirements of text analysis software tools, I chose Unicode (UTF-8) to encode the texts since Unicode is a superset of both GB (the simplified system) and Big 5 (the traditional system) and works with different varieties of Chinese. Incorrect characters were marked with a label <MC> before the character and a label </MC> after the character. Course level, topic, and time of the writing were also indicated. Student names were not recorded for the sake of confidentiality. Each essay was proofread twice against the photocopies by two native speakers to achieve a high accuracy in computerization.

Table 3-3 presents the corpus composition and the corpus size. The corpus has a total of approximately 389,848 Chinese characters. It has five subsets representing different learner

---

7 http://gaokao.eol.cn/
8 http://edu.people.com.cn/GB/gaokao/
groups and native speakers: the lower-intermediate learners (henceforth, LIL), the higher-intermediate learners (henceforth, HIL), the advanced learners (henceforth, AL), the CHL, and the NS. Each subset of the corpus contains roughly a similar number of characters, with the LIL contributing the most characters (75,000 characters) and the AL contributing the least number of characters (66,659). The average length of essays varies greatly between learners, and between learners and NSs. The average length of the LIL is only 231 characters, whereas the AL average is 390 characters. The length of the NS essays is 873 characters on average, far exceeding all of the learner groups.

Table 3-3: Size and composition of the learner corpus

<table>
<thead>
<tr>
<th>Corpus subset</th>
<th>No. of essays</th>
<th>Ave. length of essays</th>
<th>Approx. no. of characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>LILs</td>
<td>409</td>
<td>231</td>
<td>94,461</td>
</tr>
<tr>
<td>HILs</td>
<td>204</td>
<td>326</td>
<td>66,408</td>
</tr>
<tr>
<td>ALs</td>
<td>171</td>
<td>390</td>
<td>66,659</td>
</tr>
<tr>
<td>NSs</td>
<td>100</td>
<td>873</td>
<td>87,320</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1134</strong></td>
<td><strong>424 (Ave.)</strong></td>
<td><strong>389,848</strong></td>
</tr>
</tbody>
</table>

3.2.3 Annotation

After the corpus of plain texts was compiled, the next step was to apply annotations to the corpus. Because the focus of this dissertation, i.e. RVCs, is a linguistic construction that combines function and form, the currently available annotation software cannot automatically annotate the instances of RVCs. Therefore, I developed my own annotation scheme and manually added the tags to the corpus. In what follows I will introduce the annotation schemes used in this study.

At the first level, I applied the tags <DVC> <RVCC> and <RVCS> to identify each instance of the RVCs. <DVC> identifies instances of directional verb complements, <RVCC> identifies instances of completive resultative verb complements, and <RVCS> identifies instances
of result-state resultative verb complements. I used the online accessible concordance software AntConc to retrieve the instances of RVCs. AntConc is developed by Dr. Laurence Anthony, a professor at Waseda University of Japan. In addition to providing the basic functions of retrieving keyword lists, concordance lines and collocates, AntConc also provides strong support for processing the Chinese writing systems (both simplified and traditional). Figure 3-1 is a screen shot of AntConc concordance lines.

Figure 3-1: Screen shot of AntConc concordance lines

To understand the development of the lexical, syntactic, and semantic features of RVCs, further categorizations were applied to different types of RVCs in three aspects: lexical, syntactic, and semantic. Lexical aspect marks the individual components, i.e. the main verb (also called V1
for convenience) and the verb complement (or V2). This level of annotation helps explore the lexical choices made by learners and the different degrees of component diversity by learners at different proficiency levels. The syntactic aspect marks the different kinds of syntactic structures in which a RVC can be used. As explained in the literature review chapter, there are six syntactic patterns of DVC: (1) simple DC, (2) simple DC with object noun phrases, (3) simple DC with locative noun phrases, (4) complex DC, (5) complex DC with object noun phrases, and (6) complex DC with locative noun phrases. RVCC and RVCS are generally used in four syntactic patterns: (1) RVCC/RVCS, (2) RVCC/RVCS with objects, (3) RVCC/RVCS with adjectives, (4) RVCC/RVCS used in the disposal structure *ba* sentence and the passive structure *bei* sentence.

The semantic level marks the different meanings that a RVC denotes. DVCs can denote five kinds of distinct but related meanings: (1) directional meaning in which the DVCs are used in the literal meaning of directionality, (2) the metaphorical extension of the directional meaning, in which the directional use of DCs is applied to refer to abstract concepts, (3) resultative meaning, in which the DVCs have a strong indication of the result of the event or action, rather than its directionality or trajectory, (4) state-change meaning, in which the DVCs are used to indicate aspectual meaning of an event, and (5) idioms and special usages, in which the use of DVCs does not fall into any of the above categories, but are still widely used in the language. The semantic meaning of a RVCC/RVCS is more straightforward, with a basic distinction between literal and metaphorical uses. The categories are summarized in Table 3-4 and 3-5.
Table 3-4: DVC-specific categories

<table>
<thead>
<tr>
<th>Lexical level</th>
<th></th>
<th>Syntactic level</th>
<th></th>
<th>Semantic level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>V1 The main verb</td>
<td>Type 1 Simple DC</td>
<td>Type 1 Directional meaning</td>
<td>Type 1 Literal use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V2 The directional complement</td>
<td>Type 2 Simple DC with object NPs</td>
<td>Type 2 Metaphorical extension of the directional meaning</td>
<td>Type 2 Metaphorical use</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 3 Simple DC with place NPs</td>
<td>Type 3 Resultative meaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 4 Complex DC</td>
<td>Type 4 State-change meaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 5 Complex DC with object NPs</td>
<td>Type 5 Idioms and special usages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type 6 Complex DC with place NPs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3-5: RVCC/RVCS-specific categories

| Lexical level |   | Syntactic level |   | Semantic level |   |
|----------------|----------------|----------------|----------------|----------------|
| V1 The main verb | Type 1 RVCC/RVCS | Type 1 Literal use |   |   |
| V2 The resultative complement | Type 2 RVCC/RVCS with object | Type 2 Metaphorical use |   |   |
|                      | Type 3 RVCC/RVCS in BA structure |   |   |   |
|                      | Type 4 RVCC/RVCS in BEI structure |   |   |   |

Another Chinese NS, also a M.A. student in applied linguistics, and I worked together in coding the data. Before the actual coding, we individually analyzed 40 of the essays based on the coding schemes developed in this study, discussed and revised the coding until a satisfactory inter-coder reliability was reached. We each coded half of the data independently. After the coding was finished, we checked all coding for a second time, discussed different opinions, and resolved disagreements by discussion.
3.2.4 Error tagging

The inappropriate uses of RVCs were identified and tagged manually based on the categories shown in Table 3-6. The same coder worked together with me on tagging the errors. After the tagging was completed, we checked all tagging for a second time, discussed different opinions, and resolved disagreements by discussion. Figure 3-2 is a screen shot of AntConc concordance lines with error tags.

Table 3-6: Error tagging scheme

<table>
<thead>
<tr>
<th>Tag</th>
<th>Category</th>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;VC-LAC&gt;</td>
<td>V2 related</td>
<td>VC is missing where a VC is required in the target language.</td>
</tr>
<tr>
<td>&lt;VC-RED&gt;</td>
<td></td>
<td>VC is redundant where a VC is not necessary in the target language.</td>
</tr>
<tr>
<td>&lt;VC-WRO&gt;</td>
<td></td>
<td>A wrong form of VC is used.</td>
</tr>
<tr>
<td>&lt;V-LAC&gt;</td>
<td>V1 related</td>
<td>V is missing where a V is required in the target language.</td>
</tr>
<tr>
<td>&lt;V-RED&gt;</td>
<td></td>
<td>V is redundant where a V is not necessary in the target language.</td>
</tr>
<tr>
<td>&lt;V-WRO&gt;</td>
<td></td>
<td>A wrong form of V is used.</td>
</tr>
<tr>
<td>&lt;V-VC-WRO&gt;</td>
<td>Whole phrase</td>
<td>A wrong form of RVC is used.</td>
</tr>
<tr>
<td></td>
<td>related</td>
<td></td>
</tr>
<tr>
<td>&lt;ORD-WRO&gt;</td>
<td>Order related</td>
<td>The syntactic order is problematic.</td>
</tr>
<tr>
<td>&lt;STR-WRO&gt;</td>
<td>OTHER</td>
<td>The syntactic structure is problematic.</td>
</tr>
<tr>
<td>&lt;OBJ-LAC&gt;</td>
<td></td>
<td>The object is missing in the context where an object is required.</td>
</tr>
</tbody>
</table>
3.3 Overall distribution of RVCs

Because the following three chapters are organized into the acquisition of the three types of RVCs, it is necessary to present the overall distribution of RVCs in the corpus. Table 3-7 summarizes the token frequency of RVCs and unique RVCs in the corpus, and Figure 3-3 is its graphic presentation. The normalized frequencies of RVCs and unique RVCs show that although RVCs were not particularly frequent in the learner data, the frequency of RVCs grew steadily as the learners’ overall language proficiency improves.
Table 3-7: Frequency of RVCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVC tokens</td>
<td>477</td>
<td>741</td>
<td>805</td>
<td>1131</td>
</tr>
<tr>
<td>Unique RVCs</td>
<td>121</td>
<td>249</td>
<td>307</td>
<td>590</td>
</tr>
<tr>
<td>RVC tokens per 1000 Chinese characters</td>
<td>5.05</td>
<td>11.16</td>
<td>12.08</td>
<td>12.95</td>
</tr>
<tr>
<td>Unique RVCs per 1000 character</td>
<td>1.28</td>
<td>3.75</td>
<td>4.61</td>
<td>6.76</td>
</tr>
</tbody>
</table>

Figure 3-3: Frequency of RVCs

Tables 3-8 and 3-9 summarize the overall distribution of RVCs and unique RVCs in the corpus. Figure 3-4 and 3-5 are their graphic presentations.
Table 3-8: Distribution of RVCs (token measure)

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVCs</td>
<td>211</td>
<td>355</td>
<td>317</td>
<td>656</td>
</tr>
<tr>
<td>RVCCs</td>
<td>203</td>
<td>286</td>
<td>346</td>
<td>276</td>
</tr>
<tr>
<td>RVCSs</td>
<td>63</td>
<td>100</td>
<td>142</td>
<td>199</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>477</strong></td>
<td><strong>741</strong></td>
<td><strong>805</strong></td>
<td><strong>1131</strong></td>
</tr>
</tbody>
</table>

Figure 3-4: Distribution of RVCs (token frequency)

Table 3-9: Distribution of unique RVCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVCs</td>
<td>51</td>
<td>164</td>
<td>174</td>
<td>361</td>
</tr>
<tr>
<td>RVCCs</td>
<td>43</td>
<td>36</td>
<td>68</td>
<td>109</td>
</tr>
<tr>
<td>RVCSs</td>
<td>27</td>
<td>49</td>
<td>65</td>
<td>120</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>121</strong></td>
<td><strong>249</strong></td>
<td><strong>307</strong></td>
<td><strong>590</strong></td>
</tr>
</tbody>
</table>
The token frequency shows that the NSs used more DVCs and RVCSs than all learner groups, and their use of RVCCs is slightly lower than the ALs. Among the three types, DVCs have the highest frequencies that far exceed those of RVCCs or RVCSs, suggesting that that DVCs are a frequent compound structure in the formal written genre of Chinese. In contrast, RVCCs and RVCSs are much less frequent in writing. Learners’ production of RVCs shows a steady increase in the overall frequency and in each type. Still the different types showed very different patterns of development. DVCs started out with a moderate frequency in the LILs, saw a sharp increase in the HILs, and slightly declined in the ALs. The RVCCs also started out with a moderate frequency in the LILs, followed by consistent increases in the HILs and ALs. The RVCSs started out with the lowest frequency of the three, and followed by steady increases in both the HILs and ALs. The distribution of unique RVCs also shows a clear positive relationship between language proficiency and the numbers of unique RVCs produced by the learners. DVCs saw conspicuous growth from the LILs to the HILs and all the way up to the ALs. RVCCs and RVCSs did not develop so sharply as the DVCs, but a gradual and steady increase is observed in them.
Viewed from learners’ overall proficiency levels, the LILs produced the least number of RVCs in all three types. The HILs greatly increased in frequency in all three types; their increase in DVCs is especially conspicuous. The ALs did not increase much from the HILs in frequency. Their use of RVCCs and RVCSs became more frequent, while the frequency of DVCs barely changed. Compared with the NSs, there is a clear under use of DVCs in all learner groups, particularly the less proficient learners. RVCSs are also slightly underused by learners. RVCCs have similar frequency in the more proficient learners and the NSs, with the ALs produced slightly more RVCCs than the NSs. The under use of DVCs in the learner data indicates that learners may not have developed a full mastery of the use of DVCs. Considering the fact that RVCCs are composed of a smaller number of verb complements, the over use of RVCCs in the learner data implies that learners may have relied on fixed recurrent expressions and collocations. The patterns of usage will be investigated in more detail in the next few chapters.
Chapter 4

CFL Learners’ Acquisition of Directional Verb Complements (DVCs)

This chapter discusses how learners of Chinese as a foreign language (henceforth CFL learners) acquire the DVCs. In this chapter I will first present the overall distribution of DVCs in the corpus. I will use both quantitative measures and qualitative analyses to investigate the acquisition of DVCs. The quantitative analysis investigates learners’ acquisition of DVCs from lexical diversity, syntactic complexity and semantic expressiveness. The qualitative analysis focuses on the characteristics of learners at different proficiency levels. I will then analyze learners’ deviations in using DVCs, which will shed lights on how learners approach the NS pattern and what are the sources of difficulties in acquiring DVCs. I will conclude this chapter with a discussion of findings.

4.1 Distribution of DVCs

The distribution of DVCs is measured by two means: token frequency and type frequency. Token frequency is the raw count of the instances that contain a DVC; it provides us with information about the totality and frequency of DVCs used by the learners. Type frequency refers to the unique DVCs, whether they differ in the main verb, the verb complement, or both; it provides us with a glimpse of component diversity of DVCs and learners’ collocation competence in producing DVCs. Because the length of the essays in the corpus varies greatly, I also provide two measurements to normalize the descriptive statistics: the number of DVCs per essay and the number of DVCs per 1,000 Chinese characters.
Table 4-1: Distribution of DVCs

<table>
<thead>
<tr>
<th>Groups</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td># of DVCs</td>
<td>51 (211)</td>
<td>164 (355)</td>
<td>174 (317)</td>
<td>361 (656)</td>
</tr>
<tr>
<td># of DVCs per essay</td>
<td>0.12 (0.52)</td>
<td>0.80 (1.74)</td>
<td>1.01 (1.85)</td>
<td>3.61 (6.56)</td>
</tr>
<tr>
<td># of DVCs per 1000 characters</td>
<td>0.54 (2.23)</td>
<td>2.47 (5.35)</td>
<td>2.61 (4.76)</td>
<td>4.13 (7.51)</td>
</tr>
</tbody>
</table>

Figure 4-1: Distribution of unique DVCs
Figure 4-2: Distribution of DVCs (token frequency)

Table 4-1 presents the descriptive statistics of the overall distribution of DVCs in the corpus. Figure 4-1 presents the distribution of unique DVCs and Figure 4-2 presents the token frequency of DVCs. The type measure of three indices depicts a clear increase in learners’ use of DVCs. The LILs only used 51 DVCs, followed by a considerable increase in the HILs, and a mild growth in the ALs. A noticeable difference is observed between the learners and the NSs. The token measure, however, shows a slightly different picture. Overall there was an increase in all three indices. Still the peak was reached in the HILs and followed by a mild decrease in the ALs in two out of three indices. The decrease in the token frequency of DVCs and number of DVCs per 1000 characters may be explained by the fact that two of the writing tasks for the HIL explicitly elicited their use of DVCs. Compared with the NSs, all learner groups produced considerably fewer instances of DVCs, which suggests the under use of DVCs among the
learners. This may be explained by two reasons: firstly, as later evidence from error analysis shows, learners, especially at lower proficiency levels, tend to omit DVCs (a component of DVCs or the whole phrase) in obligatory contexts; secondly, it may be due to the avoidance of DVCs, either deliberately or unintentionally, due to their lack of knowledge about the various usages of DVCs.

4.2 Quantitative analysis

The quantitative analysis of the learners’ use of DVCs is carried out from three aspects: lexical diversity, syntactic complexity and semantic expressiveness.

4.2.1 Lexical diversity

A DVC is composed of two components: the main verb (also referred to as V1) and the directional complement (also referred to as V2). In what follows I will look at the use of each component respectively, and the component versatility measured by the ratio of V1 and V2.

The directional complement (V2)

As discussed in the Literature chapter, the DCs in DVCs are a close set of 24 members. It consists of 11 simple DCs (i.e. DCs composed of one morpheme) and 13 complex DCs (i.e. DCs composed of two morphemes). Despite the relatively small number of DCs, DVCs are complicated in usages because individual DCs can collocate with a wide array of verbs to convey a wide range of meanings. Due to the productivity of DCs and the constraints in forming V1-V2
collocation, DCs are more often than not presented as lexical morphemes to learners in the textbooks. Below I analyze learners’ choice of DCs.

Table 4-2: Distribution of DCs

<table>
<thead>
<tr>
<th>Type of DCs</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple DCs</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Complex DCs</td>
<td>3</td>
<td>11</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Erroneous DCs</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>24</td>
<td>20</td>
<td>21</td>
</tr>
</tbody>
</table>

Table 4-2 shows the number of DCs used by learners and the NSs. The LILs used the least number of unique DCs, and the ALs and the NSs used a near full set of DCs. The HILs used 24 DCs including two erroneous forms. Specifically, the LILs produced 12 DCs (9 simple ones and 3 complex ones). The HILs markedly increased the number to 24, which included all target simple DCs, 11 complex DCs, and two erroneous DCs formed by two DC morphemes. The ALs used a total of 20 DCs, which included all simple DCs, 9 complex ones, and one erroneous complex DC. This suggests that learners’ knowledge of the simple DCs come earlier than the complex ones in both frequency and accuracy. In a year’s formal exposure to the DCs, learners were able to use most forms of DCs.
### Table 4-3: DCs produced by the learners and the NSs (token measure)

<table>
<thead>
<tr>
<th>LILs</th>
<th>DC</th>
<th>DC</th>
<th>HILs</th>
<th>DC</th>
<th>DC</th>
<th>ALs</th>
<th>DC</th>
<th>NSs</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-qi 起</td>
<td>-lai 来</td>
<td>57</td>
<td>-lai 来</td>
<td>-dao 到</td>
<td>40</td>
<td>-qi 起</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'rise'</td>
<td>'come'</td>
<td></td>
<td></td>
<td>'arrive'</td>
<td></td>
<td>'rise'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-lai 来</td>
<td>-qu 去</td>
<td>40</td>
<td>-qu 去</td>
<td>-chu 出</td>
<td>50</td>
<td>-chu 出</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'come'</td>
<td>'go'</td>
<td></td>
<td></td>
<td>'exit'</td>
<td></td>
<td>'exit'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>-dao 到</td>
<td>-qi-lai 起来</td>
<td>47</td>
<td>-qi-lai 起来</td>
<td>-lai 来</td>
<td>48</td>
<td>-lai 来</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'arrive'</td>
<td>'rise-come'</td>
<td></td>
<td></td>
<td>'come'</td>
<td></td>
<td>'come'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>-qu 去</td>
<td>-xia 下</td>
<td>40</td>
<td>-xia 下</td>
<td>-qi 起</td>
<td>26</td>
<td>-qi 起</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'go'</td>
<td>'descend'</td>
<td></td>
<td></td>
<td>'rise'</td>
<td></td>
<td>'rise'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>-qi-lai 起来</td>
<td>-dao 到</td>
<td>21</td>
<td>-dao 到</td>
<td>-shang 上</td>
<td>21</td>
<td>-shang 上</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'rise-come'</td>
<td>'arrive'</td>
<td></td>
<td></td>
<td>'ascend'</td>
<td></td>
<td>'ascend'</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>-kai 开</td>
<td>-shang 上</td>
<td>9</td>
<td>-shang 上</td>
<td>-chu-lai 出来</td>
<td>20</td>
<td>-chu-lai 出来</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'part'</td>
<td>'ascend'</td>
<td></td>
<td></td>
<td>'exit-come'</td>
<td></td>
<td>'exit-come'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>-xia 下</td>
<td>-xia-lai 下来</td>
<td>8</td>
<td>-xia-lai 下来</td>
<td>-kai 开</td>
<td>18</td>
<td>-kai 开</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'descend'</td>
<td>'descend-come'</td>
<td></td>
<td></td>
<td>'part'</td>
<td></td>
<td>'part'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-shang-qu 上去</td>
<td>-chu 出</td>
<td>6</td>
<td>-chu 出</td>
<td>-guo 过</td>
<td>16</td>
<td>-guo 过</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'ascend-go'</td>
<td>'exit'</td>
<td></td>
<td></td>
<td>'pass'</td>
<td></td>
<td>'pass'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>-shang 上</td>
<td>-jin 进</td>
<td>5</td>
<td>-jin 进</td>
<td>-qu 去</td>
<td>15</td>
<td>-qu 去</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'ascend'</td>
<td>'enter'</td>
<td></td>
<td></td>
<td>'go'</td>
<td></td>
<td>'go'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>-xia-lai 下来</td>
<td>-chu-lai 出来</td>
<td>3</td>
<td>-chu-lai 出来</td>
<td>-qi-lai 起来</td>
<td>15</td>
<td>-qi-lai 起来</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'descend-come'</td>
<td>'exit-come'</td>
<td></td>
<td></td>
<td>'rise-come'</td>
<td></td>
<td>'rise-come'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>-guo 过</td>
<td>-kai 开</td>
<td>2</td>
<td>-kai 开</td>
<td>-xia 下</td>
<td>10</td>
<td>-xia 下</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'pass'</td>
<td>'part'</td>
<td></td>
<td></td>
<td>'descend'</td>
<td></td>
<td>'descend'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>-chu 出</td>
<td>-xia-qu 下去</td>
<td>1</td>
<td>-xia-qu 下去</td>
<td>-qi-lai 起来</td>
<td>10</td>
<td>-qi-lai 起来</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'exit'</td>
<td>'go down'</td>
<td></td>
<td></td>
<td>'come'</td>
<td></td>
<td>'come'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>-qi 起</td>
<td>-xia-qu 下去</td>
<td>7</td>
<td>-xia-qu 下去</td>
<td>-xia-lai 下来</td>
<td>9</td>
<td>-xia-lai 下来</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'rise'</td>
<td>'go down'</td>
<td></td>
<td></td>
<td>'come down'</td>
<td></td>
<td>'come down'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>-shang-qu 上去</td>
<td>-jin 进</td>
<td>6</td>
<td>-jin 进</td>
<td>-guo-lai 过来</td>
<td>4</td>
<td>-guo-lai 过来</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'ascend'</td>
<td>'enter'</td>
<td></td>
<td></td>
<td>'return'</td>
<td></td>
<td>'return'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>-guo-lai 过来</td>
<td>-shang-qu 上去</td>
<td>5</td>
<td>-shang-qu 上去</td>
<td>-hui 回</td>
<td>4</td>
<td>-hui 回</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'come over'</td>
<td>'go up'</td>
<td></td>
<td></td>
<td>'return'</td>
<td></td>
<td>'return'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>-chu-qu 出去</td>
<td>-hui 回</td>
<td>4</td>
<td>-hui 回</td>
<td>-chu-qu 出去</td>
<td>1</td>
<td>-chu-qu 出去</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'go out'</td>
<td>'return'</td>
<td></td>
<td></td>
<td>'go out'</td>
<td></td>
<td>'go out'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>-guo 过</td>
<td>-guo-qu 过去</td>
<td>4</td>
<td>-guo-qu 过去</td>
<td>-hui-qu 回去</td>
<td>1</td>
<td>-hui-qu 回去</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'pass'</td>
<td>'go over'</td>
<td></td>
<td></td>
<td>'return'</td>
<td></td>
<td>'return'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>-guo-qu 过去</td>
<td>-shang-qu 上去</td>
<td>3</td>
<td>-shang-qu 上去</td>
<td>-hui 回</td>
<td>2</td>
<td>-hui 回</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'go over'</td>
<td>'go up'</td>
<td></td>
<td></td>
<td>'return'</td>
<td></td>
<td>'return'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>-hui 回</td>
<td>-hui 回</td>
<td>3</td>
<td>-hui 回</td>
<td>-hui-qu 回去</td>
<td>1</td>
<td>-hui-qu 回去</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'return'</td>
<td>'return'</td>
<td></td>
<td></td>
<td>'return'</td>
<td></td>
<td>'return'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>-hui-qu 回去</td>
<td>-*xia-dao 下到</td>
<td>2</td>
<td>-*xia-dao 下到</td>
<td>'descend arrive'</td>
<td>1</td>
<td>'descend arrive'</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'return'</td>
<td>'return'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>-*qu-lai 去来</td>
<td>-*qi-lai 下起</td>
<td>2</td>
<td>-*qi-lai 下起</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>'go come'</td>
<td>'rise'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>-hui-lai 回来</td>
<td>-hui-lai 回来</td>
<td>1</td>
<td>-hui-lai 回来</td>
<td>'come back'</td>
<td>1</td>
<td>'come back'</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'come back'</td>
<td>'come back'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The * mark indicates a form that is not acceptable to native speakers of Chinese.

Table 4-3 lists the top ten DCs produced by the learners and NSs, together with their token frequencies. The ranking of DCs in frequency differs greatly between the learners and the NSs. Several of the top ranking DCs for the NSs are not on the list for the learners. Take the top three for the NSs as examples. The highest ranking DC for the NSs is qi ‘rise’, which has 100 occurrences in the NS data. However qi is not even among the top ten DCs for the HILs and only appeared 26 times in the ALs. The second ranking DC for the NSs is chu ‘exit’, which occurred 86 times. In contrast chu is not on the list for the LILs and was only used 16 times by the HILs. The third ranking DC for the NSs is xia ‘descend’, which occurred 79 times in the NSs. Xia is used 8 times by the LILs, 26 times by the HILs and 12 times by the ALs. Another important difference between the NSs and learners is that the top ten DCs produced by the NSs are all simple DCs. In contrast, the three learner groups used several forms of complex DCs (qi-lai ‘rise’, xia-lai ‘come down’ and chu-lai ‘come out’). In fact, the frequencies of these forms are quite high in the learner data. Qi-lai is used 21 times by the LIL, 47 times by the HILs and 15 times by ALs. Xia-lai is used 18 times by the HILs and chu-lai 20 times by the ALs. The coinage of inappropriate forms of complex DCs is also a characteristic feature of learners. The HILs produced two such forms: *qu-lai ‘go-come’ and *xia-qi ‘descend-rise’. These forms are unacceptable because both forms combined trajectory verbs that are contradictory in directionality. The ALs also produced an inappropriate form *xia-dao ‘descend-arrive’. As shown in (1), the erroneous form xia-dao is used to indicate the directionality of the verb jiao ‘to teach’. The complement verb xia is redundant here, because the action jiao cannot be described in directionality as ‘downwards’.
The main verb (V1)

Because DCs can collocate with a wide range of verbs, the number of verbs that collocate with the DC can indicate lexical diversity of DVCs. Table 4-4 lists the number of V1s that collocate with individual DCs arranged according to the type frequency of DCs in the NS data. To begin with, a clear difference in lexical diversity is observed between the learners and the NSs. Take the simple DC *qi* ‘rise’ as an example. The NSs produced 52 collocations, while the LILs only produced. The HILs, despite their growing knowledge of DCs shown in the previous section, only produced 6. A great increase was observed among the ALs, who produced 18 different collocations. Secondly, differences in lexical diversity are observed across proficiency levels. For instance, the second ranking DC *chu* ‘exit’ collocated with only one verb for the LILs. The HILs collocated *chu* with 9 different verbs, and the ALs increased the number to 27. Lastly, the development of lexical diversity for different DCs is uneven. For instance, the LILs showed a fairly high degree of lexical diversity for the DCs *lai* ‘come’ (9 collocates) and *qi-lai* ‘rise’ (9 collocates), but a rather low degree of lexical diversity for the DCs *chu* ‘exit’ (1 collocate) and *guo* ‘cross’ (1 collocate). This uneven development of DCs is also seen in the ALs. For instance, the ALs produced only 6 collocations for the DC *xia* ‘descend’ and 4 collocations for the DC *qu* ‘go’. However one needs to be careful in how this interpreted, because one cannot exclude the possibility that the learners have the linguistic knowledge but because of the time constraints and the nature of different writing tasks, they were unable to fully apply their knowledge into the task. Thus the difference could be the result of ease of access and control of lexical knowledge rather than a sheer absence of such knowledge.
Table 4-4: V1s that collocate with DCs (type measure)

<table>
<thead>
<tr>
<th>DC</th>
<th>Main verb</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>起 -qi ‘rise’</td>
<td></td>
<td>4</td>
<td>6</td>
<td>18</td>
<td>52</td>
</tr>
<tr>
<td>出 -chu ‘exit’</td>
<td></td>
<td>1</td>
<td>9</td>
<td>27</td>
<td>51</td>
</tr>
<tr>
<td>上 -shang ‘ascend’</td>
<td></td>
<td>3</td>
<td>7</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>下 -xia ‘descend’</td>
<td></td>
<td>4</td>
<td>17</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>到 -dao ‘arrive’</td>
<td></td>
<td>7</td>
<td>18</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>过 -guo ‘pass’</td>
<td></td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>来 -lai ‘come’</td>
<td></td>
<td>9</td>
<td>12</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>进 -jin ‘enter’</td>
<td></td>
<td>-</td>
<td>7</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>去 -qu ‘go’</td>
<td></td>
<td>7</td>
<td>16</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>出来 -chu-lai ‘exit-come’</td>
<td></td>
<td>-</td>
<td>7</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>开 kai ‘part’</td>
<td></td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>起来 -qi-lai ‘rise-come’</td>
<td></td>
<td>9</td>
<td>19</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>下来 -xia-lai ‘descend-come’</td>
<td></td>
<td>3</td>
<td>11</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>回 -hui ‘return’</td>
<td></td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>下去 -xia-qu ‘go down’</td>
<td></td>
<td>-</td>
<td>7</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>过来 -guo-lai ‘come over’</td>
<td></td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>过去 -guo-qu ‘go over’</td>
<td></td>
<td>-</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>出去 -chu-qu ‘go out’</td>
<td></td>
<td>-</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>上去 -shang-qu ‘ascend-go’</td>
<td></td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>回去 -hui-qu ‘return’</td>
<td></td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>进来 -jin-lai ‘come in’</td>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>回来 -hui-lai ‘come back’</td>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>去来 -qu-lai ‘go come’</td>
<td></td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>*下到 -xia-dao ‘descend arrive’</td>
<td></td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>*下起 -xia-qi ‘descend rise’</td>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Component diversity

In determining the component diversity of DVCs, I divided the number of V1s by that of the V2s to arrive at an average number of V1s that a V2 co-occurs with. (Table 4-5) A clear positive relationship is observed between component diversity and language proficiency. The
component diversity ratios increase from 4.25 (the LILs) to 6.83 (the HILs) all the way to 8.7 (the ALs). Still a big difference is observed between the learners and the NSs.

Table 4-5: Component diversity of DVCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of V2</td>
<td>12</td>
<td>24</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Number of V1</td>
<td>51</td>
<td>164</td>
<td>174</td>
<td>361</td>
</tr>
<tr>
<td>V1/V2</td>
<td>4.25</td>
<td>6.83</td>
<td>8.7</td>
<td>17.2</td>
</tr>
</tbody>
</table>

V1/V2 = Average number of V1s that a V2 co-occurs with

4.2.2 Syntactic complexity

As discussed in the Literature Chapter, DVCs can occur in different syntactic constructions. Based on the relative position of the V1, V2, and Object, I categorized the instances of DVCs into six kinds: simple DCs, simple DCs with object noun phrases (NPs), simple DCs with locative NPs, complex DCs, complex DCs with object NPs, and complex DCs with locative NPs. Table 4-6 presents the token frequencies of DVCs in different syntactic patterns. Figure 4-3 is a graphic representation of the token frequencies.

Table 4-6: Syntactic patterns of DVCs (token measure)

<table>
<thead>
<tr>
<th>Type</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Simple DCs</td>
<td>86 (41%)</td>
<td>121 (34%)</td>
<td>41 (13%)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Simple DCs with object NPs</td>
<td>41 (19%)</td>
<td>36 (10%)</td>
<td>172 (54%)</td>
</tr>
<tr>
<td>Type 3</td>
<td>Simple DCs with place NPs</td>
<td>56 (27%)</td>
<td>90 (25%)</td>
<td>43 (14%)</td>
</tr>
<tr>
<td>Type 4</td>
<td>Complex DCs</td>
<td>9 (4%)</td>
<td>74 (21%)</td>
<td>49 (15%)</td>
</tr>
<tr>
<td>Type 5</td>
<td>Complex DCs with object NPs</td>
<td>19 (9%)</td>
<td>29 (8%)</td>
<td>12 (4%)</td>
</tr>
<tr>
<td>Type 6</td>
<td>Complex DCs with place NPs</td>
<td>0</td>
<td>5 (1%)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>211</td>
<td>355</td>
<td>317</td>
<td>656</td>
</tr>
</tbody>
</table>
It can be seen that for learners and NSs alike, patterns involving the use of simple DCs (type 1, 2 and 3) greatly outnumbered those with complex DCs (Type 4, 5 and 6). The LILs and HILs showed similar patterns in their syntactic choices of simple DCs in that they both predominantly used type 1 and type 3, indicating that less experienced learners tend to use DVCs as bare directional phrases or phrases with locative NPs. In contrast, the ALs and the NSs predominantly used type 2. Type 2 tends to occur when DVCs express meanings other than directional meaning. Compared with the simple DCs, complex DCs are much lower in frequency. Among the three structures involving complex DCs, type 4 was the most frequently employed. The LILs produced very few instances of complex DCs across the board, which was in line with the low frequency of complex DCs by this group of learners. Among the instances of complex DCs, the HILs and the ALs most often used type 4, which indicates directionality.
4.2.3 Semantic expressiveness

Semantically DCs can express a wide range of meanings. The directional meaning is their literal and prototypical meaning (type 1). When the directional usages of DCs are used to modify abstract concepts, these become the metaphorical extension of the directional meaning (type 2). Following the principle of image schema transformation, most DCs can be also used to indicate result (type 3) and change of state (type 4). Some DCs can also be used as idioms or special usages (type 5), which cannot be easily explained by the aforementioned categories. Therefore in the analysis of learners’ semantic development regarding DVCs, I categorized the instances of DVCs into five semantic categories. I will use both token and type measures to show how learners’ mastery of the DVCs develops in terms of semantic expressiveness.

Token measure

Table 4-7 summarizes the token frequencies of DVCs in each semantic category. Figure 4-4 is a graphic representation of the token frequencies. The raw frequency shows that both the learners and NSs used DVCs in the directional and result meanings most frequently; the other three categories were scarcely used. The LILs and the HILs used DVCs in the directional meaning the most. This was especially the case for HILs who used directional meaning 81% of the time, which may be accounted for by the two writing tasks that specifically elicited their use of DVCs in the directional meaning.
Table 4-7: Semantic categories of DVCs (token measure)

<table>
<thead>
<tr>
<th>Type</th>
<th>Directional meaning</th>
<th>LIL</th>
<th>HIL</th>
<th>AL</th>
<th>NS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Metaphorical extension of the directional meaning</td>
<td>104 (49%)</td>
<td>286 (81%)</td>
<td>99 (31%)</td>
<td>331 (50%)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Resultative meaning</td>
<td>0</td>
<td>2 (1%)</td>
<td>46 (15%)</td>
<td>39 (6%)</td>
</tr>
<tr>
<td>Type 3</td>
<td>State-change meaning</td>
<td>80 (38%)</td>
<td>39 (11%)</td>
<td>140 (44%)</td>
<td>244 (37%)</td>
</tr>
<tr>
<td>Type 4</td>
<td>Idioms and special usages</td>
<td>2 (1%)</td>
<td>13 (4%)</td>
<td>21 (7%)</td>
<td>21 (3%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>211</td>
<td>355</td>
<td>317</td>
<td>656</td>
</tr>
</tbody>
</table>

Another interesting observation is that the LILs produced a high ratio of DVCs in the resultative meaning (38% of the total). It is interesting because one would assume that the use of DVCs in extended meanings would come much later than their prototypical meaning. The LILs’ high percentage of DVCs in resultative meaning will be examined further in the qualitative analysis in the next section. DVCs in the directional meaning also account for half of all instances produced by the NSs. The ALs showed an interesting distribution of semantic categories; they used the type 3 DVCs more than the type 1 by 13%. This might be due to the writing tasks the
ALs were given in the HSK Advanced Test. The type 2 and type 4 have much lower frequencies in both the learners and the NSs.

**Type measure**

Table 4-8 summarizes the type frequency of DVCs in each semantic category. Figure 4-5 is a graphic representation of the type frequency. Once again, the type measure shows that the LILs have a much lower component diversity of DVCs than the HILs and the ALs in all five semantic types. The HILs significantly improves in the diversity of DVCs in the directional category (125 collocates) but were still weak in the other categories. The ALs did not show a high lexical diversity in the directional category, but improved from the HILs in all other categories, especially the resultative category. The NSs showed the most diversity all across the board. Despite the relatively low token frequency for the directional category, the NSs used 179 collocates, which significantly outperformed all learner groups. The NSs also produced 132 DVCs in the resultative category, much higher than all learner groups.

<table>
<thead>
<tr>
<th>Table 4-8: Semantic categories of DVCs (unique DVCs)</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 1</strong> Directional meaning</td>
<td>27 (53%)</td>
<td>125 (76%)</td>
<td>55 (32%)</td>
<td>179 (50%)</td>
</tr>
<tr>
<td><strong>Type 2</strong> Metaphorical extension of the directional meaning</td>
<td>0</td>
<td>2 (1%)</td>
<td>13 (7%)</td>
<td>22 (6%)</td>
</tr>
<tr>
<td><strong>Type 3</strong> Resultative meaning</td>
<td>14 (27%)</td>
<td>22 (13%)</td>
<td>82 (47%)</td>
<td>132 (37%)</td>
</tr>
<tr>
<td><strong>Type 4</strong> State-change meaning</td>
<td>2 (4%)</td>
<td>11 (7%)</td>
<td>17 (10%)</td>
<td>18 (5%)</td>
</tr>
<tr>
<td><strong>Type 5</strong> Idioms and special usages</td>
<td>8 (16%)</td>
<td>4 (2%)</td>
<td>7 (4%)</td>
<td>10 (3%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>164</strong></td>
<td><strong>174</strong></td>
<td><strong>361</strong></td>
</tr>
</tbody>
</table>
4.2.4 Summary

The quantitative analysis shows a general positive relationship between learners’ use of DVCs and their language proficiency. First, lexical diversity greatly increases as learners’ language proficiency improves. The LILs produced fewer DCs and a limited number of V1 collocates. The HILs used an almost complete set of DCs and improved in component diversity. The ALs also used an almost complete set of DCs and outperformed the HILs in the number of V1 collocates. Still a noticeable difference was observed between the ALs and the NSs in their production of V1 collocates, which indicates that lexical diversity is a consistent challenge for learners at all proficiency levels.

The analysis of syntactic patterns used by the NSs shows that this group predominantly used simple DCs followed by object NPs. Although the token frequency of this structure produced by the ALs is much lower, the percentage distribution shows that the ALs’ use of the DVC structures is very similar to that of the NSs. The LILs’ and HILs’ choices of DVC structures
are similar in that they both primarily used two structures: simple DCs, and simple DCs followed by locative NPs. This shows that the acquisition of DVCs as directional phrases to indicate directionality or change of location comes earlier than the acquisition of DVCs followed by object NPs to indicate the causal relationship between the agent and the patient and the event structure of location change.

The analysis of semantic expressiveness shows that the NSs used DVCs in the directional meaning the most. The NSs also used a larger percentage of DVCs in the resultative meaning. Both the LILs and the HILs used a sizable number of DVCs with directional meaning. However the two learner groups used many fewer DVCs with resultative meaning. The ALs did not reflect the patterns of the NSs. They used a lower percentage of DVCs with directional meaning and a higher percentage of DVCs with resultative meaning.

4.3 Qualitative analysis

In this section, qualitative analysis is conducted to highlight the characteristics of the acquisition of DVCs by learners at different learning stages. As have been made clear in the quantitative analysis, learners of different proficiency levels differ greatly in their mastery of DVCs. In this section I will look closely at these differences by examining their actual use of DVCs, comparing their use with the input they received, and comparing the use of the same DCs across proficiency levels.

4.3.1 The LILs

A distinctive feature of the LILs’ production of DVCs is their poor performance in component diversity. The quantitative data have shown that the LIL’s component diversity ratio
is 4.25, which means that on average four verbs collocate with a DC. Here I conduct a case study of the DC lai ‘come’. The reason for choosing lai is because it has the most V1 collocates in the LIL data. Lai was used 40 times by the LILs and collocated with nine different verbs, which include ban ‘move’, dai ‘bring’, dao ‘arrive’, gen ‘follow’, guo ‘cross’, hui ‘return’, jin ‘enter’, qi ‘rise’ and xia ‘descend’. Table 4-9 lists all collocates and the typical use of lai produced by the LILs. A survey of the textbooks that this group used at the time they produced these expressions shows that all nine collocates had been introduced either in the grammar section or as lexical input in the vocabulary section, providing evidence that all the DVC compounds produced by the LILs are input-based.

An examination of the syntactic structures also shows that the LILs used DVCs as non-compositional chunks or fixed expressions. This resulted in the inappropriate order of the V1, V2 and the object, as is shown in (a), (e), (j) and (k). In these sentences, the object should be placed between the V1 and the V2, but because the DVCs are acquired as chunks, the LILs failed to separate the two components and insert the object noun between the two constituents. The use of DVCs as chunks also resulted in the use of DVCs together with linguistic units that are contradictory in meaning to the DVCs. For instance, in (f) the learner produced the chunk of gen wo lai ‘follow me’, which is introduced in the textbook. The learner then used a prepositional phrase qu zhong guo ‘go to China’, which is also very likely acquired as a chunk. In this case, the directional DC lai ‘come’, together with the preposition qu ‘go’, generates a contradictory and therefore unacceptable meaning. The use of DVCs as fixed expressions also resulted in redundant expressions as in (h), and incomprehensible expressions as in (m). An interesting use of DVCs is (l), in which this particular learner showed an understanding of the DVC hui lai ‘return come’ as compositional, and tried to insert the aspect particle le between the V1 and V2. Unfortunately this resulted in an unacceptable construction, because the double le construction indicates an on-going process, which cannot describe such an accomplishment event as hui lai
‘return or come back’. To express that one is returning or coming home, one needs the progressive marker zai and the prepositional phrase zai lu shang (on the way of …). Still this particular case shows an emerging understanding of DVCs as compositional and analytical.

Table 4-9: Collocations of the DC lai ‘come’ produced by the LILs

<table>
<thead>
<tr>
<th>来 lai ‘come’</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>搬来 ban-lai ‘move come’</td>
<td>a</td>
<td>*…很多人从纽约搬来费城。…henduo ren cong New York ban-lai Philadelphia. ‘Many people move from New York to Philadelphia.’</td>
</tr>
<tr>
<td>带来 dai-lai ‘bring come’</td>
<td>b</td>
<td>带来一个京剧的电影 dai-lai yi ge jingju de dianying ‘bring a movie about Beijing Opera’</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>*请你薄脆饼干带来了。Qing ni bocui binggan dai-lai le. ‘Please bring along the crispy biscuits.’</td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>来了就好，怎么还带东西来呢? Lai le jiu hao, zenme hai dai dongxi lai ne? ‘It’s great that you can make it. Why bother to bring gifts?’</td>
</tr>
<tr>
<td>到来 dao-lai ‘arrive come’</td>
<td>e</td>
<td>*你得到来我的房间。Ni dei dao-lai wode fangjian. ‘You should come to my room.’</td>
</tr>
<tr>
<td>跟来 gen-lai ‘follow come’</td>
<td>f</td>
<td>*你应该跟我来去中国旅游。Ni yinggai gen wo lai qu zhongguo lvyou. ‘You should come with me to travel to China.’</td>
</tr>
<tr>
<td>过来 guo-lai ‘come over’</td>
<td>g</td>
<td>明天我的妈妈爸爸过来。Mingtian wode mama baba guo-lai. ‘Tomorrow my parents will come to visit.’</td>
</tr>
<tr>
<td></td>
<td>h</td>
<td>*明天我朋友过来我的家玩儿。Mingtian wo pengyou guo-lai wode jia wan’er.</td>
</tr>
</tbody>
</table>
Tomorrow my friend cross-come my home play
‘Tomorrow my friend will come to my place.’

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>回来</td>
<td>i</td>
</tr>
<tr>
<td>hui-lai</td>
<td>Wo xingzou hui-lai.</td>
</tr>
<tr>
<td>return come</td>
<td>I walk return-come</td>
</tr>
<tr>
<td>‘return’</td>
<td>‘I walked back.’</td>
</tr>
</tbody>
</table>

j  *我…很不想回来SC。*
Wo …hen bu xiang hui-lai SC
I … very no want return-come SC
‘I don’t want to come back SC at all.’

k  *再我回来宿舍。
Zai wo hui-lai sushe. |
Then I return-come dorm
‘Then I came back to my dorm.’

l  *我五月回来了。
Wo wuyue hui le lai le. |
I May return LE come LE
‘I came back in May.’

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>进来</td>
<td>m</td>
</tr>
<tr>
<td>jin-lai</td>
<td>Guo malu jin-lai.</td>
</tr>
<tr>
<td>enter come</td>
<td>Cross road enter-come</td>
</tr>
<tr>
<td>‘enter’</td>
<td>‘Cross the road and enter.’</td>
</tr>
</tbody>
</table>

n  *到飞机以后起来
Dao feiji <x> yihou <x> qi-lai |
Arrive airplane <x> after <x> rise-come
‘When the airplane arrives, (I) got up.’

The input-driven approach to L2 acquisition showcased in the LIL’s acquisition of the DVCs is also evidenced by the fact that for certain DCs, learners acquired their extended, resultative, state-change, or idiomatic usages before the prototypical directional meaning. For instance, the DC qi-lai was used by the LIL only in its state-change meaning or as idioms. Table 4-10 lists the typical uses of qi-lai in the LILs data. In (a), qi-lai indicates a change of state. (b), (c) and (d) are instances in which qi-lai collocate with sensory verbs to form idioms. All these expressions had been introduced in the textbook. It seems, therefore, that the order of the
acquisition of DVCs is very much based on the input that learners receive. Because many DVCs are introduced to learners in such a way that the prototypical meaning is overlooked, it makes it extremely unlikely that learners would develop a conceptual understanding of the individual DCs, and instead they would have to memorize the expressions on an item-by-item basis. Therefore their production of the less prototypical usages of DVCs can be seen as a result of memorization instead of a mature understanding of the DVCs and their compositional nature.

Table 4-10: Typical usages of the DC qi-lai ‘rise’ by the LILs

<table>
<thead>
<tr>
<th>起来 qi-lai</th>
<th>‘rise’</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>胖起来</td>
<td>a</td>
<td>我开始胖起来了。</td>
<td>Wo kaishi pang qi-lai le.</td>
</tr>
<tr>
<td>plump rise-come</td>
<td>I begin fat rise-come LE</td>
<td>‘I began to put on some weight.’</td>
<td></td>
</tr>
<tr>
<td>‘begin to put on weight’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>看起来</td>
<td>b</td>
<td>他看起来很高兴。</td>
<td>Ta kan qi-lai hen gaoxing.</td>
</tr>
<tr>
<td>look rise-come</td>
<td>He look rise-come very happy</td>
<td>‘He seems to be very happy.’</td>
<td></td>
</tr>
<tr>
<td>‘look like’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>听起来</td>
<td>c</td>
<td>…储蓄支票账户听起来好…</td>
<td>…chuxu zhipiao zhanghu ting qi-lai hao.</td>
</tr>
<tr>
<td>listen rise-come</td>
<td>…saving checking account hear rise-come good</td>
<td>‘… The saving and checking accounts sound good.’</td>
<td></td>
</tr>
<tr>
<td>‘sound like’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>想起来</td>
<td>d</td>
<td>我想不起来是怎麽样。</td>
<td>Wo xiang bu qi-lai shi zennmeyang.</td>
</tr>
<tr>
<td>xiang qi-lai</td>
<td>I remember no rise-come be how</td>
<td>‘I cannot remember what it was like.’</td>
<td></td>
</tr>
<tr>
<td>think rise-come</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘recall’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3.2 The HILs

Compared with the LILs, the HILs showed improvement in lexical diversity. Their component diversity ratio is 6.83, which means on average about 7 different verbs collocate with individual DCs. The DC qi-lai ‘rise’ ranks first in terms of component diversity. It has 19 collocations and appeared in the HIL data 47 times. Table 4-11 lists some of the most typical
expressions of qi-lai ‘rise’. It can be seen that a wide array of verbs are collocated with qi-lai to denote a wide range of meanings. In expressing a directional meaning, verbs used by the learners include posture verbs (zhan ‘stand’, zuo ‘sit’), action verbs (zou ‘walk’ and tiao ‘jump’) and verbs that cause a change of location of an object (fu ‘lift’, jia ‘pick’, and na ‘take’, tiao ‘jump’, and zou ‘walk’). Qi-lai is also used with a variety of verbs (chao ‘argue’, dong ‘move’, sheng ‘generate’ and ku ‘cry’) and adjectives (hao ‘good’, re ‘hot’, xiang ‘loud’) to denote a change of state. The idiomatic usages of qi-lai include xiang qi-lai ‘remember’, kan qi-lai ‘look like’, and ting qi-lai ‘sound like’. The lexical diversity of qi-lai shown here indicates learners’ understanding of the compositional nature of qi-lai and proficiency in producing collocations more freely to serve the communicative needs in the immediate context. The HILs also showed syntactic complexity in their use of DVCs. The average length of sentences containing a DVC is much longer than that produced by the LILs. Comparing (s) in Table 4-11 with (d) in Table 4-10, it can be seen that the HILs used more sophisticated syntactic structures that involve the use of a subordinate clause, a coherence device and a modifier.

Due to their limited lexical knowledge, the HILs sometimes produced collocations that are not appropriate for the context. For instance in c, the learner used the verb fu ‘support by hands’ to collocate with qi-lai. It is not appropriate because fu means using hand to support something. The appropriate compound is ding qi-lai ‘lift something using horns or head’. Similar errors also include (d), (h), (i) and (k). In experimenting with new collocations of the verb and its complement, learners also made errors in the syntactic structure of the sentences they produced. In (e), (g) and (h), the BA structure should be used. In fact in (f) and (i), the BA structure is appropriately used by the learners. The varying degree of mastery among learners appears to be characteristic of acquiring DVCs by the HILs. Although learners continue to make mistakes in producing DVC compounds, such creative combination of verbs and compounds provides
evidence that learners have started to generalize their understanding of DVCs as compositional components rather than fixed expressions.

Table 4-11: Typical usages of the DC qi-lai ‘rise’ by the HILs

<table>
<thead>
<tr>
<th>起来 qi-lai ‘rise’</th>
<th>(Chinese)</th>
<th>(English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>站起来</td>
<td>那只鹿站起来了…</td>
<td>Na zhi lu zhan qi-lai le …</td>
</tr>
<tr>
<td>zhan qi-lai</td>
<td>That CL deer stand rise-come LE …</td>
<td>‘That deer stood up …’</td>
</tr>
<tr>
<td>‘stand up’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>坐起来</td>
<td>我坐起来的时候…</td>
<td>Wo zuo qi-lai de shihou …</td>
</tr>
<tr>
<td>zuo qi-lai</td>
<td>I sit rise-come DE time …</td>
<td>‘When I sat up, …’</td>
</tr>
<tr>
<td>‘sit up’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>扶起来</td>
<td>鹿醒来以后，它就把小明扶起来…</td>
<td>Lu xing le yihou, ta jiu ba Xiaoming fu qi-lai.</td>
</tr>
<tr>
<td>fu qi-lai</td>
<td>Deer wake LE after, it then BA Xiaoming support rise-come</td>
<td>‘After the deer woke up, it assisted Xiaoming to his feet.’</td>
</tr>
<tr>
<td>‘embrace something to his/her feet’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>架起来</td>
<td>鹿把他架了起来扔下去。</td>
<td>Lu ba ta jia le qi-lai reng xia-qu.</td>
</tr>
<tr>
<td>jia qi-lai</td>
<td>Deer BA him lift LE rise-come throw descend-go</td>
<td>‘The deer lifted him up and threw him away.’</td>
</tr>
<tr>
<td>‘lift’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>捡起来</td>
<td>*他们帮他捡起来他的梨子。</td>
<td>Tamen bang ta jian qi-lai tade lizi.</td>
</tr>
<tr>
<td>jian qi-lai</td>
<td>They help him pick rise-come his pear</td>
<td>‘They helped him to pick up the pears.’</td>
</tr>
<tr>
<td>‘pick up’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>有三个孩子帮他把梨子从地上捡起来。</td>
<td>You san ge haizi bang ta ba lizi cong di shang jian qi-lai.</td>
</tr>
<tr>
<td></td>
<td>Have three CL children help him BA pear from ground on pick rise-come</td>
<td>‘Three children helped him to pick up the pears from the ground.’</td>
</tr>
<tr>
<td>拿起来</td>
<td>农夫拿它们起来…</td>
<td>Nongfu na tamen qi-lai …</td>
</tr>
<tr>
<td>na qi-lai</td>
<td>Farmer pick them rise-come …</td>
<td>‘The farmer picked them over…’</td>
</tr>
<tr>
<td>‘pick over’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h</td>
<td>*鹿吓得，拿起来那个小孩子。</td>
<td></td>
</tr>
<tr>
<td>Chinese Word</td>
<td>English Translation</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>Lu xia si le, na qi-lai na ge xiao haizi.</td>
<td>Deer frighten death LE, hold rise-come that CL little child. ‘The deer was scared. It picked the little child up.’</td>
<td></td>
</tr>
<tr>
<td>*那个孩子把一只筐子拿起来了。</td>
<td>Na ge haizi ba yi zhi kuangzi na qi-lai le. That CL child BA one CL basket hold rise-come LE. ‘That child picked up the basket.’</td>
<td></td>
</tr>
<tr>
<td>跳起来</td>
<td>‘jump up’</td>
<td></td>
</tr>
<tr>
<td>跳起来青蛙跳起来了。</td>
<td>‘The frog jumped up.’</td>
<td></td>
</tr>
<tr>
<td>*走起来</td>
<td>‘walk up’</td>
<td></td>
</tr>
<tr>
<td>*小男孩请那土拨鼠走起来。</td>
<td>Little boy ask that groundhog walk rise-come. ‘The little boy asked the groundhog to walk up.’</td>
<td></td>
</tr>
<tr>
<td>吵起来</td>
<td>‘start to argue’</td>
<td></td>
</tr>
<tr>
<td>吵起来我们开始吵起来了。</td>
<td>‘We start to argue with each other.’</td>
<td></td>
</tr>
<tr>
<td>动起来</td>
<td>‘start to move’</td>
<td></td>
</tr>
<tr>
<td>动起来…树枝开始动起来了。</td>
<td>‘… The tree branches started to move.’</td>
<td></td>
</tr>
<tr>
<td>好起来</td>
<td>‘get better’</td>
<td></td>
</tr>
<tr>
<td>好起来跟你说完我心情多少会好起来。</td>
<td>‘After talking with you, I started to feel a little better.’</td>
<td></td>
</tr>
<tr>
<td>热起来</td>
<td>‘get hotter’</td>
<td></td>
</tr>
<tr>
<td>热起来天气开始热起来了。</td>
<td>‘It gets hotter.’</td>
<td></td>
</tr>
<tr>
<td>生气来</td>
<td>‘become angry’</td>
<td></td>
</tr>
<tr>
<td>生气来他就生气来了。</td>
<td>‘He then became angry.’</td>
<td></td>
</tr>
<tr>
<td>响起来</td>
<td>‘loud’</td>
<td></td>
</tr>
<tr>
<td>响起来水哗啦哗啦地响了起来。</td>
<td>‘Water splashing DE loud LE rise-come’</td>
<td></td>
</tr>
</tbody>
</table>
‘start to be loud’ ‘The water starts to run loud.’

哭起来 我常常忍不住哭起来。
k u qi-lai Wo changchang ren bu zhu ku qi-lai. ‘I often cannot help crying.’

想起来 听我朋友弹奏吉他, 然后能想起来我最好的时间。
x iang qi-lai Ting wo pengyou tanzou jita, Ranhou neng xiang qi-lai wo zui-hao de shijian. ‘Listening to my friend playing guitar makes me remember my best times.’

看起来 青蛙在池塘看起来很快乐。
kan qi-lai Qingwa zai shuichi kan qi-lai hen kuaile. ‘The frog seems to be very happy in the pond.’

听起来 他听起来很难过。
t i ng qi-lai Ta ting qi-lai hen nanguo. ‘He seems to be very sad.’

4.3.3 The ALs

Compared with the LILs and the HILs, the ALs improved their use of DVCs not only in complexity but also in accuracy. The ALs shows a much more complicated use of DVCs in terms of component diversity. Their component diversity rate is 8.7. That is to say that an average number of 9 different verbs are produced to collocate with individual DCs. Consider the DC lai as an example. It had 18 V1 collocates and appeared 50 times in the AL data. The verbs that the ALs used to collocate with lai include, but are not limited to, hui ‘return’, dao ‘arrive’, dai ‘bring’, qing ‘invite’, xue-xi ‘learn’, xing ‘wake’ and kan ‘look’. These collocates cover a wide range of semantic meanings. Table 4-12 lists some usages of lai by the ALs. Table 4-12 (a), (b) and (e) are the use of lai in its literal and directional meaning; (g) involves the use of lai in its extended meaning; (h) is an idiomatic usage of lai; and (c), (d), (f) are the use of lai metaphorically,
because in these sentences the subject is either a cultural concept or an abstract entity. The ALs also showed syntactic complexity in using DVCs. For instance, in (b), a BA structure and a relative clause are used with the DVC \textit{dai-lai} ‘carry come’. In (f), a sophisticated prepositional phrase is used with the DVC \textit{xue-xi lai} ‘learn come’. Moreover, the accuracy of DVCs is much greater than in the case of the other two learner groups. Very few errors are found in the instances of the DC \textit{lai}. In fact, the ALs significantly improved their mastery of DVCs across the board.

Table 4-12: Typical usages of the DC \textit{lai} ‘come’ by the ALs

<table>
<thead>
<tr>
<th>来来‘come’</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>回来</td>
<td>a</td>
<td>爸爸一回来就说我两句…</td>
</tr>
<tr>
<td>\textit{hui lai}</td>
<td>\textit{ba ba yi hui lai ji shuo le wo liang ju…}</td>
<td>Daddy once \textit{return} then scold me two sentence ‘As soon as daddy \textit{returned}, he scolded me…’</td>
</tr>
<tr>
<td>‘return come’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>带来</td>
<td>b</td>
<td>外婆把我们从波士顿\textit{带来}的龙虾弄好了。</td>
</tr>
<tr>
<td>\textit{dai lai}</td>
<td>\textit{waipo ba women cong Boston\textit{带}来\textit{de} lobster clean good LE}</td>
<td>‘Grandma BA \textit{we} from Boston \textit{bring} \textit{DE} lobster clean good LE ‘Grandma finished cleaning the lobster we \textit{brought} from Boston.’</td>
</tr>
<tr>
<td>‘bring’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>因为吸烟…也同时给他人和市容环境\textit{带来}多种伤害。</td>
<td>c</td>
<td>\textit{Yinwei xiyan} … ye tongshi gei tar en he shirong huanjing \textit{带来} duo zhong shanghai.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Because smoking … also simultaneous to other people and city environment \textit{bring} \textit{many kind harm} ‘Because smoking also \textit{brings} harm to the city environment.’</td>
</tr>
<tr>
<td>我的说法也许会\textit{带来}很多争议…</td>
<td>d</td>
<td>\textit{Wode shuofa yexu hui带}来\textit{henduo zhengyi} …</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘My view likely will \textit{bring} \textit{many different-opinion} ‘My view may \textit{bring} \textit{about} different opinions.’</td>
</tr>
<tr>
<td>请来</td>
<td>e</td>
<td>商户不惜一掷千金\textit{请}来有名气的运动员。</td>
</tr>
<tr>
<td>\textit{qing lai}</td>
<td>\textit{shanghu bu xi yi-zhi-qian-jin qing lai youmingqi de yundongyuan}.</td>
<td>Companies not spare squander \textit{invite} \textit{come} famous DE athletes ‘Companies spare no efforts in squandering money to \textit{invite} famous athletes.’</td>
</tr>
<tr>
<td>‘invite’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>学习来</td>
<td>f</td>
<td>比如学习说话，小孩子都是从听父母亲说话中\textit{学习}来的。</td>
</tr>
<tr>
<td>\textit{xue-xi lai}</td>
<td>\textit{Biru xuexi shuohua, xiaohaizi dou cong ting fumuqin shuohua zhong xuexi lai de}.</td>
<td>‘Learning to talk, children are all from listening to their parents’ talking to \textit{learn} from.‘</td>
</tr>
</tbody>
</table>
‘learn from’  Such as learn speak, children all BE from listen parents talk middle learn come DE
‘Such as learning to speak, children all learn how to speak from listening to their parents’ conversing.’

醒来  当我醒来的时候, …
xing lai  Dang wo xing lai de shihou,
‘wake up’  When I walk come DE time,
‘When I wake up, …’

看来  在我看来，孩子的第一任老师就是在他童年影响最大的人。
kan lai  Zai wo kan lai, haizi de di yi ren laoshi jiu shi zai ta tongnian yingxiang zuida de ren.
‘in someone’s opinion’  In me look come, children DE first one CL teacher then BE at him childhood influence biggest DE person
‘In my opinion, the first teacher of children’s is the person who has given them the most influence in their childhood.’

4.4 Deviations of DVCs

In order to investigate the sources of difficulties in acquiring DVCs, I present the findings from error analysis in this section. The inappropriate use of DVCs is grouped into four categories: omission, misuse, misordering, and others. Omission is further examined in terms of V1 or V2 missing. Misuse relates to inappropriate use of V1, V2, or the entire phrase. Misordering refers to the inappropriate word order related to the verb, the complement and the objects. The ‘others’ category includes the overuse of a component of the DVC, omission of the object, and inappropriate structure.
Table 4-13 summarizes the distribution of the inappropriate use of DVCs in the corpus. The HILs had the highest error rate. The ALs are characterized by very few errors and much higher accuracy, indicating that they have developed fairly good mastery of DVCs. The category of omission and misordering are frequently committed errors for the LILs and HILs, but rarely committed by the ALs, suggesting that these types of errors can be overcome by learners as their language proficiency improves. In contrast, the misuse of DVCs seems to be sustained throughout the learning process. The LILs produced 20 instances of this category, the HILs produced 46, and even the ALs produced 20. This suggests that making the right choice of DVCs, be it V1, V2 or the entire phrase, is a difficult area for CFL learners.

### 4.4.1 Omission

Omission includes the omission of the V1 and that of the V2, with the latter constituting the most inappropriate instances.
The omission of V1

Because V1 indicates an action, its omission results in a construction with presence of a trajectory verb and absence of an action verb. In the corpus all instances of the V1 omission are related to the directional meaning of the DVCs. (2a) and (2b) are produced by the LILs. In both cases, the main verb is omitted. In (2a), the target form should be *guo lai* ‘come over’, in which the verb complement *lai* indicates the direction of the action *guo* ‘to cross a distance to get to some place’. In (2b), the target form should be *hui qu* ‘go back’, in which the verb complement *qu* indicates the direction of the action *hui* ‘return’. The learners seem to have directly translated the words from English. A literal translation of (2b) is ‘I often *go* home’. In English, the manner and the trajectory can be expressed by one word: ‘come’ for (2a) and ‘go’ for (2b). However the same meaning needs to be expressed in Chinese by a DVC which is a combination of an action verb and a directional verb. Therefore, the target form for (2a) is *guo lai* ‘cross come’, and that for (2b) is *hui jia qu* ‘return home go’. This shows that the typological difference in expressing directionality has yet been mastered by the LILs, and errors at this stage come largely from the L1 transfer.

The HILs seem to perform differently although on face value they produced similar forms of errors. (2c) and (2d) are examples. In (2c), to express the manner and trajectory ‘to jump out of’, the learners used a directional verb *chu* ‘exit’, which apparently is not a direct translation from English. The use of *chu* alone meets the communicative needs of the context, because with the trajectory information provided the narration can flow. What is missing is the manner verb, the lack of which may very well reflect limited lexical knowledge of the HILs. (2d) is similar. Although the manner verb *song* ‘send’ is missing, the sentence is still comprehensible.
The omission of V2

The instances of V2 omission are much more frequent than V1 omission, indicating that the former constitutes a highly problematic area for learners, in particular learners at the intermediate level. Unlike the omission of the V1 which occurred in the directional meaning of DVCs only, the omission of V2 occurs in DVCs of a wider range of meanings. Below are some sentences produced by the three learner groups that contain an omission of the V2. (3a) and (3b) are produced by the LIL. Both sentences are missing the DC dao ‘arrive’, which is a DC that indicates the ending point of an action. The lacking of a directional verb indicating an ending point leaves the actions zou ‘walk’ and hui ‘return’ incomplete and unacceptable. (3c), (3d) and (3e) were produced by the HILs. These three sentences respectively represent the missing a DC in the directional, resultative and state-change meanings. In (3c), in expressing a directional action of ‘climbing on the tree’, the learner omitted the trajectory verb shang ‘ascend’, leaving the directionality of the action ambiguous. In (3d), in expressing the action of ‘bring something
along’, the learner used the manner verb dai ‘carry’ only. Here the use of the verb only might be due to L1 influence because in English to express the same meaning, one could either say ‘to bring’ or ‘to bring along’. The learner might not be aware of the fact that the DC shang in Chinese indicates the meaning of ‘to attach something to someone’, so they went with a safer choice of dai ‘carry’. (3e) is another example of potential L1 influence, in which a literal translation of the English word ‘stop’ was used whereas the target form should be an action verb ting ‘stop’ followed by a DC xia ‘descend’. (3f) and g are produced by the ALs. In (3f) the verb dai ‘carry’ is used to denote that popular songs bring happiness to people. The use of dai ‘carry’ alone, however, does not indicate the trajectory of the action. The DC lai ‘come’ is needed in the context to denote the notion of ‘bring’. In (3g), the verb dang ‘assume the position of something’ is used to express ‘being a doctor’. However the use of dang alone does not indicate the fact that doctor is a desirable career and requires long-term efforts to finally become one. In the context, the social superiority of being a doctor and the long-term efforts required to become one need to be expressed by adding the DC shang to the action verb dang.

(3)
The LILs
a  *再，一直走紅綠燈也往左拐。
    Zai, yizhi zou honglvdeng ye wang zuo guai.
Then, straight walk traffic light and towards left turn
   ‘Go straight until the traffic light and then turn left.’
 b *球賽以後，我們回我朋友的車。
    Qiusai yihou, women hui wo pengyou de che.
Game after, we return my friend DE car
   ‘After the game, we returned to my friend’s car.’

The HILs

c  *那個孩子爬樹了以後，他看在樹的裡面。
    Na ge haizi pa shu le yihou, ta kan zai shu de limian.
That CL child climb tree LE after, he look at tree DE inside
   ‘After that child climbs on the tree, he looks inside the tree.’
 d  *好的數碼相機的時候，我把它帶了。

Hao de shuma xiangji de shihou, wo ba ta dai le.
Good DE digital camera DE time, I BA it bring LE
‘When the digital camera was functioning, I brought it along with me.’

When the digital camera was functioning, I brought it along with me.

When the child came to the pear tree, he suddenly stopped.

Popular songs bring lots of happiness to us.

After my father died, my mom continued her schooling and eventually became a doctor.

In Table 4-14, I summarized all the verbs that learners used without DCs, together with their frequencies in the corpus. It can be seen that the LILs and HILs tended to omit the DCs in the directional meaning, which is in line with the fact that the largest portion of DCs produced by the LILs and the HILs carry directional meaning. The three instances in which the ALs omitted DCs are all in the extended meaning, which implies that this group had no problem in producing a complete DVC form for directional meaning.
Table 4-14: V1s used by the learners without DCs in obligatory occasions

<table>
<thead>
<tr>
<th>Omitted target DC</th>
<th>V1 (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The LILs</strong></td>
<td></td>
</tr>
<tr>
<td>到</td>
<td>回(5)</td>
</tr>
<tr>
<td>去</td>
<td>搬(1)</td>
</tr>
<tr>
<td>上</td>
<td>穿(1)</td>
</tr>
<tr>
<td>下</td>
<td>停(1)</td>
</tr>
<tr>
<td><strong>The HILs</strong></td>
<td></td>
</tr>
<tr>
<td>到</td>
<td>回(3)</td>
</tr>
<tr>
<td>开</td>
<td>离(3)</td>
</tr>
<tr>
<td>来</td>
<td>回(1)</td>
</tr>
<tr>
<td>起来</td>
<td>吵架(1)</td>
</tr>
<tr>
<td>去</td>
<td>出(1)</td>
</tr>
<tr>
<td>上</td>
<td>穿(1)</td>
</tr>
<tr>
<td>下</td>
<td>停(3)</td>
</tr>
<tr>
<td><strong>The ALs</strong></td>
<td></td>
</tr>
<tr>
<td>上</td>
<td>当(1)</td>
</tr>
<tr>
<td>起</td>
<td>承担(1)</td>
</tr>
<tr>
<td>来</td>
<td>带(1)</td>
</tr>
</tbody>
</table>

4.4.2 Misuse

Misuse of V1

The misuse of V1 reflects the learners’ limited lexical knowledge and ability to distinguish between synonymous verb forms. It seems there are cases when the learners are not sure about which verb to use, so they randomly choose between synonymous verbs. In (4a), the learner used the verb *fu* ‘to embrace someone with hands’ to describe the action of a deer. Due to the fact that *fu* is a general verb familiar to the learners, and the low frequency target form *ding* ‘lift with horns’ may have not been familiar to them, the learner opted to use a general verb that is synonymous to the target one. Similarly in (4b), the learner used a general verb *fang* ‘place’ rather than a specialized verb *song* ‘to send’. In (4c), the target form should be *lian-xi* ‘establish
connections between things or phenomena’. The learner used a compound verb *lian-he* ‘reunite’, which is synonymous to *lian-xi* but denotes different meanings.

(4)
The HILs

a *鹿醒了以後，它就把小明扶起來。
   Lu xing le yihou, ta jiu ba Xiaoming fu qi-lai.
   Deer woke LE after, it then BA Xiaoming support rise-come.
   ‘After the deer woke up, it assisted Xiaoming to his feet.’

The ALs

b *我不会喜欢父母把我放到一个女子学校的。
   Wo bu hui xihuan mufu ba wo fang dao yi ge nvzi xuexiao de.
   I not will like parents BA me place arrive one CL women school DE.
   ‘I don’t like the idea of my parents’ sending me to a women school.’

c *说话和听话总把参与对话的人联合起来。
   Shuohua he tinghua tong ba canyu duihua de ren lianhe qi-lai.
   Speaker and listener always BA participate conversation DE people relate rise-come
   ‘The speaker and the listener always related the conversation with the participants.’

Misuse of V2

Two major areas are identified that resulted in the misuse of V2. The first is related to the use of the deictic DCs *lai* and *qu*. Due to a confusion of the deictic and trajectory DCs, learners tend to either omit the deictic verb or the trajectory verb. (5) presents some examples of this type of error. In (5a), the verb *pao* ‘run’ is collocated with the trajectory verb *chu* ‘exit’. Here the deictic verb *qu* ‘go’ should be used with *chu* ‘exit’ to indicate that the person ran out and away from the speaker. (5b) makes an opposite case to (5a). In (5b), the verb *tiao* ‘jump’ is collocated with the deictic verb *qu* ‘go’. It provides the deictic information for an action, but it is missing the trajectory information. In this case, the trajectory verb *chu* ‘exit’ should be inserted between the verb *tiao* ‘jump’ and the deictic verb *qu* ‘go’. (5c) makes a case of confusing the deictic verb and
the trajectory verb. The learner used the deictic verb *qu* ‘go’ as if it functioned as a trajectory verb.

The target form here should be the trajectory verb *kai* ‘away’.

(5)

a  *我覺得他有不好的事我* 跑出了。
   Wo juede ta you bu hao de shi wo pao chu le.
   I think he have not good DE event I *run exit* LE
   ‘I think something unpleasant happened to him, so I *run out*.’

b  *小美從一個瓶子* 跳去了。
   Xiaomei cong yi ge pingzi tao qu le.
   Xiaomei from one CL bottle *jump go* LE
   ‘Xiaomei *jumped* out of bottle and left.’

c  *一只山羊和男人在梨子筐子的旁边* 走去了。
   Yi zhi shanyang he nanren zai lizi kuangzi de pangbian zou qu le.
   One CL goat and man at pear basket DE nearby *walk away* LE
   ‘A goat and a man *walked* past a pear basket.’

The second area of difficulty is the use of the directional verbs *dao* ‘arrive’ versus *lai* ‘come’ and *qu* ‘go’. These three DCs are confusing because they all indicate a change in location. *Dao* ‘arrive’ is different from the other two because it emphasizes the end point of a location change. *Lai* ‘come’ and *qu* ‘go’ do not implicate the end point of an action. (6) includes some examples misuse of the three verbs. In (6a), the DVC *hui lai* ‘return come’ is used to indicate ‘coming back (to the dorm)’. The directional verb *lai* alone cannot fulfill this semantic need, because it does not inherently indicate the end point of the action. The directional verb *dao* ‘arrive’ should be used instead. Similarly in (6b) the directional verb *dao* ‘arrive’ should be used instead of *lai* ‘come’.

(6)
The HILs

a  *然後我* 回來宿舍還看電視。
   Ranhou wo *hui lai* sushe hai kan dianshi.
   Then I *return come* dorm also watch TV
   ‘Then I *returned* to my dorm and watched TV.’
b *它會走來我旁邊。
Ta hui zou lai wo pangbian.
It will walk come my side
‘It will walk to me.’

Misuse of the DVC compound

The misuse of the DVC phrase generates errors that are semantically inappropriate for the contexts. For instance in (7a), the intended meaning is ‘to abandon playing piano’. The learner used a DVC phrase diu kai ‘throw away’, which is usually used to denote a concrete action of throwing something away. Diu kai cannot indicate the abandoning of a habit or a ritual. The appropriate form should be fang qi ‘give up’. In (7b), the DVC phrase dai lai ‘bring come’ cannot collocate with the object bang-yang ‘model’. The appropriate form should be shu-ling ‘to set up’.

(7)
The ALs
a *可是因为我不喜欢我的老师。所以我丢开了。
Keshi yinwei wo bu xihuan woOde laoshi. Suoyi wo dui kai le.
But because I not like my my teacher. So I throw away LE
‘But because I didn’t like my teacher, I give up (learning piano).’

b *這種行為帶來了许多孩子們的榜样。
Zhe zhong xingwei dai lai le xuduo haizimen de bangyang.
This kind behavior carry come LE many children DE model
‘Behaviors like this set a model for many children.’

4.4.3 Misordering

Table 4-15 presents the distribution of misorderings organized by the syntactic structures of DVCs. Clearly, most errors are related to the Type 3 structure, i.e. simple DC with locative NPs. Given that the majority of misordering errors occur with this structure, it will be the focus of the ensuing discussion.
Table 4-15: Inappropriate use of DVCs related to word order

<table>
<thead>
<tr>
<th>Type</th>
<th>LIL</th>
<th>HIL</th>
<th>AL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Type 2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Type 3</td>
<td>15</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Type 4</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Type 5</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Type 6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>22</td>
<td>2</td>
</tr>
</tbody>
</table>

(8) lists some instances pertaining to the type 3 structure. (8a) represents a typical error produced by the LIL. The learner produced the place NP after the DVC phrase hui qu ‘return’, whereas the target structure should situate the locative NP between the V1 hui ‘return’ and the DC qu ‘go’. This once again shows the learners’ tended to produce the DVC compounds as a chunk rather than as a compositional collocation. (8b) and (8c) and d were produced by the HILs. (8b) and (8c) both used the DVC pa shang ‘climb ascend’. (8b) is unacceptable because the intended meaning is ‘to climb and land on the top of the tree’. The target form should be pa dao shu shang qu ‘climb arrive tree on go’, in which the DC dao is used to indicate the ending point of the action pa ‘climb’, and the preposition shang ‘on’ follows the place NP shu ‘tree’ to indicate that the person landed on top of the tree. In (8c) the learner used a prepositional phrase zai shu ‘at tree’ followed by a DVC phrase pa shang ‘climb ascend’. The prepositional phrase indicates a location, and the DVC phrase indicates a process accompanied by a change of location. It is not acceptable because the two phrases reflect a conflict in meaning. (8d) is similar to (8b) in that the intended meaning is ‘to fall into the pond’, which emphasizes the ending point of the action. Although the DVC phrase diao xia ‘fall descend’ captured the trajectory of the action, it cannot be followed by the prepositional phrase zai shuichi ‘at pond’, which is essentially the ending location of the action. The target form should be diao dao shuichi li ‘fall arrive pond in’. The LILs tended to use the DVCs as chunks which resulted in the misordering, while the HILs
continued to struggle with the fine-grained differences in the trajectory meanings of different DCs, which resulted in their use of the wrong DCs and inappropriate syntactic structures.

(8)
The LILs
a  *再我们回去西班牙。
   Zai women *hui qu Spain.
   Then we *return go Spain
   ‘Then we went back to Spain.’

The HILs
b  *让我爬上树。
   Rang wo pa shang shu.
   Let me *climb ascend tree.
   ‘Let me climb up the tree.’

c  *他在树爬。
   Ta zai shu *pa shang.
   He at tree *climb ascend
   ‘He climbed up the tree.’

d  *孩子和小狗都掉下在水池了。
   Haizi he xiao gou dou *diao xia zai shuichi le.
   Both the child and the doggy *fell descend in pond LE.
   ‘Both the child and the doggy fell into the pond.

4.4.4 Deviations and learners’ language proficiency

The most common errors of the LILs were misorderings and V2 omission. The misorderings occurred exclusively in the type 3 structure, i.e. the simple DC followed by locative NPs. This may be attributed to the fact that the LILs generally produced DVCs as chunks rather than as compositional constructions. In terms of V2 omission, the majority of such deviations are due to L1 transfer or limited knowledge of the directional verbs. The HILs were found to have the highest error rate among the three learner groups. Taking into consideration that the HILs showed improvement in the lexical, syntactic and semantic aspects of DVCs, it might indicate that the HILs are productively using the DVCs but have not yet developed a mature mastery of the
construction. This is supported by the increase in error rate for V2 omission, V2 misuse, and misordering. The ALs manifested a marked improvement in accuracy of use of DVCs compared to the other two learner groups. They made very few errors in the omission and misordering categories. Among the errors they made in these categories, most involved the misuse of the DC in metaphorical or resultative meanings. (9) lists some instances in which an inappropriate directional verb was used by the ALs.

(9)
a *最理想的办法就是法來規定出來一種標準化的制度。
Zui lixiang de bafa jiu shi yi fa lai guiding chulai yi zhong biaozhunhua de zhidu.
Most ideal DE method just BE by law stipulate exit-come one CL standardized DE system
‘The ideal way is to stipulate a standardized system by law.’

b *我會把偶像的流行歌曲的歌詞全部背起來。
Wo hui ba ouxiang de liuxing gequ de geci quanbu bei qi-lai.
I will BA idol DE popular songs DE lyrics all recite rise-come
‘I will memorize all the lyrics of the popular songs by my idols.’

c *兩個人能不能合起來是很重要的。
Liang ge ren neng bu neng he qi-lai shi hen zongyao de.
Two CL people can not can connect rise-come is very important DE
‘Whether two persons can connect or not is very important.’

4.5 Summary

This chapter analyzed the acquisition of DVCs by CFL learners of the intermediate and advanced proficiency levels. Both the quantitative and qualitative analyses showed a clear positive relationship between learners’ mastery of the DVC construction and their overall Chinese language proficiency. Learners who have received formal instruction on DVCs for less than an academic semester closely mirrored the textbook input in their production of DVCs. Their lexical diversity of DVCs is found to be low and no creative use of V1-V2 collocations was identified. Their use of DVC structures was mainly based on the use of simple DCs indicating directionality.
The range of meanings of the DVCs produced by learners at this proficiency level was mainly for directional and resultative meanings. The majority of the DVCs produced by the learners can be found in the textbooks. They mainly produced two types of errors: omission and misordering. The omission of V1 or V2 by this group of learners is found to be the result of L1 transfer or limited knowledge of the directional verbs. The misordering exclusively occurred with the structure of simple DCs with place NPs. Learners who have received formal instruction on DVCs for more than one academic year show strong evidence of using the DVCs productively and creatively. They improved in lexical diversity and syntactic complexity of the DVCs. Partly due to the two writing tasks, the DVCs produced by this group of learners were mainly for directional meaning. This group of learners also had the highest error rates among the three groups and in all categories of misordering, omission and misuse, suggesting that they began to experiment with original combinations of DVSs. The omission is found to be the result of their limited lexical knowledge of manner verbs or L1 transfer. The misuse of an element of the DVC construction shows that they used synonyms and their collocational competence was constrained by their limited lexical knowledge. The misordering was also found to be mainly reflective of the type 3 structure. Learners who had received formal instruction on DVCs for more than two academic years showed a sophisticated use of DVCs in all aspects of lexical diversity, syntactic complexity and semantic expressiveness. They also improved greatly in accuracy. The error rate of the ALs was much lower than the intermediate learners. Their errors mainly occurred in cases where the DVCs were used with metaphorical or extended meanings, which point to their having developed reasonably good mastery of the directional and prototypical use of DVCs. Compared with the NSs, the advanced learners manifested a gap, especially in lexical diversity. Although the advanced learners outperformed the intermediate learners, they were still in a process of approaching the pattern of use of the NSs.
In the acquisition of the DVC components, the mastery of directional verbs was achieved fairly early on. Within about one year’s exposure to DVCs, the learners were able to master most directional verb forms, although they may over use their knowledge and create inappropriate forms of DCs in that they also produced two erroneous forms of DCs. However, with regard to V1 collocations, learners at different proficiency levels varied greatly in their performance, and even the advanced learners cannot approach the NS pattern. This indicates that lexical knowledge of the manner verbs and collocation competence of the manner verb and directional verb may be a constant source of difficulty for learners in their acquisition of the DVCs. In the acquisition of the syntactic patterns of DVCs, two structures were most frequently used by the intermediate learners: structures of simple DCs and simple DCs with locative NPs. The most frequently used structure by the advanced learners and the Chinese native speakers was the simple DCs with object NPs. The complex DC structures, although acquired early in the acquisition order as reported by Qian (1997) and Wu (2011), were found to have very low occurrence rates in learners’ language use. In the distribution of the syntactic structures, the LILs and HILs showed similar patterns, and the ALs were more akin to the NSs. In the acquisition of individual DCs, it shows that individual DCs were acquired at an uneven rate, mainly influenced by how much the input made available. It was found that some DCs were frequently used and mastered fairly early by the learners and some others were rarely used. For instance, the lower-intermediate learners produced nine collocates for the directional verb *lai* but only one collocate for the directional verb *chu*. The distribution of semantic categories shows a somewhat chaotic picture. What is surprising is that the LILs produced a sizeable proportion of DVCs with resultative denotations. This suggests that the learners did not follow the order of acquiring the DCs from their prototypical meaning to the extended and metaphorical meanings; they acquired the form and meaning of the DCs following what is available in the input. This shows the specific nature of L2
acquisition as being primarily based on the classroom input that learners are exposed to, speaking for the importance of the quality of instruction.

The most frequently committed errors were missions, misuse and misorderings. The misorderings were the most frequently committed errors by the intermediate learners, but the error rate dramatically decreased in the advanced learners. This runs counter to what was reported by Yang (2003a, 2003b, 2004), who found that misorderings constituted the most frequent errors of learners at all levels in his study. This might be due to the fact that misordering tends to occur in the use of compound DCs together with two objects. With the proportion of such structures being low in the data, such errors did not increase as much as other types of errors. Another important reason is the differences in defining advanced learners. In Yang’s studies, the advanced learners are defined as third- and fourth-year CSL learners, whereas in this study the advanced learners usually have finished four years’ of Chinese learning, who essentially may have higher proficiency than those in Yang’s studies. The omission of a component of the DVCs revealed a similar pattern: it occurred frequently among the intermediate learners, but was rarely found among the advanced learners. In contrast, the misuse of a component of the DVCs was found to be persistent among all learners, thus constituting a consistent challenge for learners. Another important finding was that the NSs greatly exceeded the learners in how frequently they used DVCs. It was found that even the advanced learners produced significantly fewer DVCs than the NSs. This indicates a marked under use of DVCs by learners. In addition to the straightforward omission of DVCs, it is likely that learners intentionally or unintentionally avoided the use of DVCs. This constitutes another source of difficulty in acquiring the DVCs.
Chapter 5

CFL Learners’ Acquisition of Completive Resultative Verb Complements (RVCCs)

This chapter explores the acquisition of the completive resultative verb complements (henceforth, RVCCs) by learners of Chinese as a foreign language (henceforth, CFL learners). I will first present the overall distribution of RVCCs in the corpus. A combination of quantitative and qualitative analyses is employed to investigate the learners’ lexical, syntactic, and semantic choices in RVCCs. In order to provide a comprehensive picture about how the different aspects of RVCCs develop, the quantitative analysis explores learners’ use of RVCCs from three aspects: lexical diversity, syntactic patterns, lexical and sentential aspect. A qualitative analysis is conducted to explore how learners develop their mastery of different complement verbs. The case studies of two representative verb complements are provided to reveal the similarities and differences in acquiring different complement verbs. The use of RVCCs by two individual learners is compared to highlight the intra-learner and inter-learner variability in developing mastery of the RVCCs. I will then present results from error analysis, which highlights the sources of difficulty in acquiring RVCCs. I will conclude this chapter with a summary of the findings.

5.1 Distribution of RVCCs

Due to differences in essay length and size of the datasets, the distribution of RVCCs is measured through three indices: the total number of RVCCs, the average number RVCCs in each
essay, and the average number of RVCCs for every 1000 Chinese characters. For each index, both the type and token counts are provided. The type count refers to the number of distinct RVCCs; the token count refers to all instances of RVCCs for all types. Table 5-1 presents the descriptive statistics for the distribution of RVCCs in the corpus. In the table, the numbers of unique RVCCs are specified followed by the number of tokens (i.e. distinct RVCCs) in brackets. Figure 5-1 and 5-2 are the graphic representation of the distribution of unique RVCCs and token RVCCs.

Table 5-1: Distribution of RVCCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td># of RVCCs</td>
<td>43 (203)</td>
<td>36 (286)</td>
<td>68 (346)</td>
<td>109 (276)</td>
</tr>
<tr>
<td># of RVCCs per essay</td>
<td>0.11 (0.50)</td>
<td>0.18 (1.41)</td>
<td>0.40 (2.02)</td>
<td>1.09 (2.76)</td>
</tr>
<tr>
<td># of RVCCs per 1000 Chinese characters</td>
<td>0.46 (2.15)</td>
<td>0.54 (4.31)</td>
<td>1.02 (5.19)</td>
<td>1.25 (3.16)</td>
</tr>
</tbody>
</table>
Figure 5-1: Distribution of unique RVCCs
The distribution of unique RVCCs shows that the NSs greatly outnumbered all learner groups in all three indices. They produced more than twice unique RVCCs than either the LILs or the HILs. They also outperformed the ALs by more than 40 unique RVCCs. Among the learners, an overall positive relationship is observed between the number of unique RVCCs produced and their language proficiency. To be specific, the ALs produced considerably more unique RVCCs than either the LILs or the HILs. It is worth mentioning that the LILs produced more unique RVCCs than the HILs, although their numbers of RVCCs per essay and per 1000 characters are lower than those of the HILs. This indicates that the LILs, who have received formal Chinese
instruction for about one year, have developed fairly good lexical knowledge of RVCCs, which may be attributed to the relatively smaller set of the completable verb complements.

The token measure presents a slightly different picture. Although the NSs produced markedly more unique RVCs than the ALs, their number of RVCCs by raw count is much fewer than that of the ALs and even slightly lower than that of the HILs. The number of RVCCs per 1000 characters produced by the NSs is also lower than that of the HILs or ALs, although their number of RVCCs per essay is higher than the learner groups due to the longer essay length of the NSs. The lower occurrence rate of the RVCCs in the NSs’ writing suggests that the RVCC is a less frequent construction in formal writing, because many RVCCs are regarded as more appropriate for spoken genre. Compared with the NSs, the advanced learners may have overused RVCCs for the reason that they have not developed enough lexical and discourse repertoire to support a better choice of RVCC compounds that are appropriate for different types of discourse or genre. In other words, their writing is very much characterized by spoken discourse and lexicon.

5.2 Quantitative analysis

In this section I investigate the acquisition of RVCCs through quantitative measures. I analyze learners’ use of the RVCCs in terms of lexical diversity, syntactic patterns, lexical aspect and sentential aspect. Analysis of the components of RVCCs will shed light on how productively learners use the RVCCs. The analysis of the distribution of the different syntactic patterns of RVCCs will show how learners develop their use of RVCC structures over time. The analysis of lexical aspect and sentential aspect will provide insights into learners’ understanding of the semantic functions of the components and the semantic relationship between RVCCs and other aspect markers.
5.2.1 Lexical diversity

A RVCC has two components: a main verb indicating an action (also referred to as V1) and a complement verb indicating the completion of the action (also referred to as V2). In what follows I look at the learners’ choice of each component respectively and their component diversity measured by the ratio of V1 and V2. Because the V2 is the more productive one, I will start my analysis with the V2.

The complement verb (V2)

The complement verbs that form a RVCC are a closed set. Chinese linguists have different opinions on what the completive complements are. In this dissertation, I focus on seven complement verbs whose function as completive complements has been agreed upon in most literature. These verbs are presented in Table 5-2.

Table 5-2: A list of complement verbs in RVCCs

<table>
<thead>
<tr>
<th>V2</th>
<th>Examples</th>
</tr>
</thead>
</table>
| 1  | 到 -dao ‘arrive’ | kan dao ‘look arrive’ (see)  
mai dao ‘buy arrive’ (buy) |
| 2  | 住 -zhu ‘stay’ | ji zhu ‘memorize stay’ (memorize)  
liu zhu ‘keep stay’ (stay) |
| 3  | 成 -cheng ‘succeed’ | zuo cheng ‘do succeed’ (succeed in doing)  
bian cheng ‘change succeed’ (turn into) |
| 4  | 见 -jian ‘perceive’ | kan jian ‘look perceive’ (see)  
ting jian ‘listen perceive’ (hear) |
| 5  | 完 -wan ‘finish’ | du wan ‘read finish’ (finish reading)  
zuo wan ‘do finish’ (finish doing) |
| 6  | 好 -hao ‘good’ | xie hao ‘write good’ (finish writing)  
xi hao ‘wash good’ (finish washing) |
| 7  | 着 -zhao ‘be on target’ | cai zhao ‘guess on-target’ (succeed in guessing)  
mai zhao ‘buy on-target’ (succeed in buying) |
Although all of them can function as the V2, the seven verbs differ in that some are more like content words and others are more like function words. Some verbs bring their content meaning to the compound when functioning as verb complements. For instance, the verb \textit{wan} as a stand-alone verb indicates ‘to finish’. The compound \textit{du wan} ‘read finish’ means ‘finish reading’ and \textit{zuo wan} ‘do finish’ means ‘finish doing’. In contrast, the verb \textit{dao} as a stand-alone verb has the content meaning of ‘arrive’. However when used in RVCCs as the verb complement, \textit{dao} barely conveys its content meaning. Rather it functions primarily as a grammatical particle, or in other words a function word, to indicate the completion or end state of an action as in \textit{kan dao} ‘look arrive’ (see) and \textit{mai dao} ‘buy arrive’ (buy). This semantic difference between the complement verbs is important because the varying degree of content and grammatical connotations of the verb complements may play a role in the acquisition of these verb complements, as will be made clear in the qualitative analysis.

Table 5-3 presents the token frequency of RVCCs in the corpus organized by the complement verbs. Clearly, the complement verb \textit{dao} is the most frequently used by the NSs and learners alike. Except for \textit{dao}, the frequencies of the other complement verbs differ greatly between the NSs and the learners, and among the learners. The NSs used grammaticalized complement verbs more frequently. In addition to \textit{dao}, which was used for 131 times, the NSs used \textit{zhu} ‘stay’ in 57 instances, \textit{cheng} ‘succeed’ in 38 instances, and \textit{jian} ‘perceive’ in 27 instances. The ALs also produced a considerable number of grammaticalized complement verbs, such as \textit{cheng} ‘succeed’ (45 instances) and \textit{jian} ‘perceive’ (13 instances). In contrast, the LILs used the content forms more frequently than they did with grammaticalized forms: \textit{wan} ‘finish’ in 19 instances; \textit{hao} in 14 instances. The HILs seem to be in a transitional stage. On the one hand, they produced a fair number of the grammaticalized verbs, such as \textit{jian} ‘perceive’ (20 instances); and on the other hand they produced a good number of the content verbs, such as \textit{wan} ‘finish’ (19
instances). The general tendency seems to be that the learners start out with the content verb and gradually develop their mastery of the grammaticalized forms.

Table 5-3: V2s produced by the learners and NSs (token measure)

<table>
<thead>
<tr>
<th>V2</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 到 -dao ‘arrive’</td>
<td>144</td>
<td>223</td>
<td>273</td>
<td>131</td>
</tr>
<tr>
<td>2 住 -zhu ‘stay’</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>3 成 -cheng ‘succeed’</td>
<td>5</td>
<td>4</td>
<td>45</td>
<td>38</td>
</tr>
<tr>
<td>4 见 -jian ‘perceive’</td>
<td>10</td>
<td>20</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>5 完 -wan ‘finish’</td>
<td>19</td>
<td>19</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>6 好 -hao ‘good’</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>7 着 -zhao ‘be on target’</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

*The main verbs (V1)*

Because individual V2 can collocate with a large number of V1s, the number of unique verbs that collocate with the V2s is an indicator of the learner’s productivity in using RVCCs.

Table 5-4 presents the number of collocates that the NSs and learners produced. Overall, the NSs produced more collocations than the learners for almost all V2s. The complement verb that has the most collocates for both the learners and the NSs is *dao* ‘arrive’. The NSs produced 32 collocates with *dao*, while the LILs produced 14 collocates, the HIL produced 16, and the ALs even outperformed the NSs, producing 40 collocates. In addition to *dao*, the NSs also produced a sizeable number of collocates for the complement verbs *zhu* ‘stay’ (29 collocates), *cheng* ‘succeed’ (26 collocates) and *wan* ‘finish’ (10 collocates). In contrast, the learners produced many fewer collocates for the rest of the V2s except for *dao*. The second and third ranking V2s with the most collocates produced by the LILs are *wan* ‘finish’ (14 collocates) and *hao* ‘good’ (10 collocates). The second ranking V2 with the most collocates produced by the ALs is *cheng* ‘succeed’ (15 collocates).
Table 5-4: Collocates for the complement verbs

<table>
<thead>
<tr>
<th>V2</th>
<th>V1 collocates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LILs</td>
</tr>
<tr>
<td>1</td>
<td>到 ‘arrive’ dao</td>
</tr>
<tr>
<td>2</td>
<td>住 ‘stay’ zhu</td>
</tr>
<tr>
<td>3</td>
<td>成 ‘succeed’ cheng</td>
</tr>
<tr>
<td>4</td>
<td>完 ‘finish’ wan</td>
</tr>
<tr>
<td>5</td>
<td>见 ‘perceive’ jian</td>
</tr>
<tr>
<td>6</td>
<td>着 ‘be on target’ zhao</td>
</tr>
<tr>
<td>7</td>
<td>好 ‘good’ hao</td>
</tr>
</tbody>
</table>

**Component diversity**

To determine the component diversity, I used the same measurement as what was used for DVCs. The number of V1s and V2s are counted respectively. The former is divided by the latter to arrive at an average number of V1s that a V2 co-occurs with. The results are shown in Table 5-5. Overall, the NSs have a higher ratio for component diversity than all learner groups. A general tendency of development is observed among the learners. The LILs have a ratio of 6.14, which is surprisingly good considering their time of exposure to the target language. The HILs exhibit a lower ratio than the LILs, which shows no obvious progress in their lexical knowledge about the RVCCs, suggesting that for intermediate learners, it is a difficult area to develop lexical knowledge and collocations between the verbs and complements. A noticeable improvement is observed among the ALs, showing that the ALs greatly expanded their lexical knowledge about the RVCCs.

Table 5-5: Component diversity of RVCCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of V2</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Number of V1</td>
<td>43</td>
<td>36</td>
<td>68</td>
<td>109</td>
</tr>
<tr>
<td>V1/V2</td>
<td>6.14</td>
<td>5.14</td>
<td>9.71</td>
<td>15.57</td>
</tr>
</tbody>
</table>

V1/V2 = Average number of V1s that a V2 co-occurs with
Figure 5.3: V1/V2 ratios of DVCs and RVCCs

Figure 5.3 compares the V1/V2 ratio of DVCs and RVCCs across groups. It shows that both types are developed in a similar pattern in their component diversity. Despite a gap between the NSs and the learners, an overall gradual increase is observed in both DVCs and RVCCs.

5.2.2 Syntactic complexity

Syntactically, a RVCC can occur with or without a noun, an adjective or a clause. RVCCs can also be used in the BA (the disposal construction in Chinese) and BEI (the passive construction in Chinese) sentences to indicate what happens to the entity referred to by the BA/BEI noun phrase. (Li & Thompson, 1981) Thus, there are six syntactic patterns that a RVCC can take: RVCCs, RVCCs with noun phrases, RVCCs with adjective phrases, RVCCs with clauses, RVCCs in the BA structure, and RVCCs in the BEI structure.
Table 5-6: Syntactic patterns of RVCCs (token measure)

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVCCs</td>
<td>44 (22%)</td>
<td>49 (17%)</td>
<td>19 (5%)</td>
<td>34 (12%)</td>
</tr>
<tr>
<td>RVCCs with N. phrases</td>
<td>145 (71%)</td>
<td>187 (66%)</td>
<td>266 (77%)</td>
<td>195 (71%)</td>
</tr>
<tr>
<td>RVCCs with Adj. phrases</td>
<td>2 (1%)</td>
<td>0 (0%)</td>
<td>9 (3%)</td>
<td>10 (4%)</td>
</tr>
<tr>
<td>RVCCs with Clauses</td>
<td>1 (0%)</td>
<td>28 (10%)</td>
<td>39 (11%)</td>
<td>33 (12%)</td>
</tr>
<tr>
<td>RVCCs with BA structures</td>
<td>13 (6%)</td>
<td>10 (3%)</td>
<td>9 (3%)</td>
<td>1 (0%)</td>
</tr>
<tr>
<td>RVCCs with BEI structures</td>
<td>0 (0%)</td>
<td>12 (4%)</td>
<td>4 (1%)</td>
<td>3 (1%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>203</strong></td>
<td><strong>286</strong></td>
<td><strong>346</strong></td>
<td><strong>276</strong></td>
</tr>
</tbody>
</table>

**Syntactic patterns of RVCCs**

![Syntactic patterns of RVCCs](image)

Figure 5-4: Syntactic patterns of RVCCs (token measure)

Table 5-6 shows the distribution of the syntactic patterns of RVCCs by token frequency, and Figure 5-4 is the same data in graphic representation. RVCCs followed by noun phrases are the predominant structure produced by the NSs and learners, accounting for approximately 70% of all occurrences. Among the other five types of structures, RVCCs used alone or followed by clauses occur slightly more frequently than do the remaining three structures. Comparatively speaking, the LILs and the HILs are found to have produced a relatively higher percentage of RVCCs used alone. The numbers of RVCCs followed by clauses are found to increase steadily from less experienced learners to more experienced learners and to NSs. The instances of RVCCs
followed by adjective phrases are rather low in the NS and learner data. RVCCs used in this structure are represented by the compound gan dao ‘feel arrive’ (feel), which denotes one’s sensation. RVCCs in BA and BEI structures have very low occurrence rates as well, but still they constitute a typical linguistic context in which a RVCC occurs. With the V1 specifying an action and the complement verb specifying the completion of an action, RVCCs are semantically compatible with the BA/BEI structure. Due to the curricula, the BA sentence was introduced two semesters earlier than the BEI sentence, which accounts for why the LILs produced RVCCs in the BA structure not the BEI structure.

5.2.3 Aspect

As mentioned earlier, the two components of the RVCCs have their respective semantic roles in conveying event structures. The action verb expresses the manner of an action; the complement verb expresses the completion of the action. In order to probe into learners’ knowledge of the semantic roles, it is important to understand how learners choose and combine different verbs at the lexical level to denote an event structure. In addition, RVCCs are an important means of perfective aspect marking. (Smith, 1991, 1997; Xiao & McEnery, 2004) It is therefore important to investigate how RVCCs interact with other aspectual markers at the sentence level, in particular the perfective aspect marker le and the experiential aspect marker guo.

Lexical aspect

With the complement verb indicating the completion of an action, the V1 can be filled by either a verb or an adjective. Following Vendler’s (1967) categorization of verb types, Smith
(1991, 1997) states that the types of verbs that fill the V1 slot in RVCCs can be activity, achievement, accomplishment, and stative. In the analysis of the lexical aspect of RVCCs, I categorized the V1 into 5 types: activities, achievements, accomplishments, statives and adjectives.

Table 5-7: Distribution of V1 types

<table>
<thead>
<tr>
<th>Verb</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomplishment</td>
<td>4 (9%)</td>
<td>2 (6%)</td>
<td>4 (6%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>Achievement</td>
<td>7 (16%)</td>
<td>10 (27%)</td>
<td>23 (34%)</td>
<td>25 (23%)</td>
</tr>
<tr>
<td>Activity</td>
<td>30 (75%)</td>
<td>24 (67%)</td>
<td>40 (59%)</td>
<td>76 (69%)</td>
</tr>
<tr>
<td>Adjective</td>
<td>0</td>
<td>0</td>
<td>1 (1%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>36</td>
<td>68</td>
<td>109</td>
</tr>
</tbody>
</table>

Figure 5-5: Distribution of V1 types

Table 5-7 shows the distribution of V1 types in RVCCs, and Figure 5-5 is its graphic representation. The most frequently V1 type used by the NSs are activities (69%). This is not
surprising given that activities are atelic and durative. In order to denote the completion or termination of the activity, a completer complement verb is required. The NSs also used complement verbs with a sizeable percentage of achievement verbs (23%). The percentages of accomplishments and adjectives are much lower (4% each) and there is no instance of stative verbs. The least frequently used verb type is accomplishment, which is predictable because accomplishments are durative and telic, thus it is not always necessary to add a completer verb complement. The NSs also produced four instances of adjectives followed by complement verbs, showing that construction is semantically acceptable but less commonly used in Chinese.

The learners’ use of V1 types is similar to the patterns manifested by the NSs. All the learner groups employed different types of verbs to form RVCC compounds. They predominantly used activity verbs to form RVCCs. The use of adjectives as the V1s did not occur among the LILs and HILs, and the ALs produced only one such instance, suggesting that this pattern takes longer for learners to acquire.

**Sentential aspect**

As stated in Xiao & McEnery (2004), RVCCs are an important means of indicating completer aspect. Other frequently used and widely documented aspect markers in Chinese include the perfective aspect marker le and the experiential aspect marker guo. Le spans the initial and final endpoints of an event, while the span of guo indicates an experiential past. (Smith, 1991, 1997) Here I analyze the interaction between the RVCCs and the two aspect markers at the sentence level to determine how the RVCCs independently or collaboratively indicate aspect. I also distinguished the target-like and non-target-like instances in the learners’ data determine the extent to which learners approached the NS patterns of use.
Table 5-8 presents the distribution of the sentential aspect; Figure 5-6 is a graphic representation of the same data. They show that RVCCs are predominantly used without the aspect markers le or guo. This is predictable due to the fact that RVCCs alone can indicate completion. There are cases in which le co-occurs with the RVCCs to indicate a completed action and a closed event. (Smith, 1997) It is acceptable but rare for RVCCs to co-occur with the experiential aspect marker guo to indicate a completed action and an experiential event.

Table 5-8: Distribution of the sentential aspect (token measure)

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVCCs without le/guo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targetlike</td>
<td>123 (61%)</td>
<td>194 (68%)</td>
<td>301 (88%)</td>
<td>213 (77%)</td>
</tr>
<tr>
<td>Non-targetlike</td>
<td>39 (20%)</td>
<td>28 (10%)</td>
<td>5 (1%)</td>
<td>-</td>
</tr>
<tr>
<td>RVCCs with le</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targetlike</td>
<td>34 (16%)</td>
<td>55 (19%)</td>
<td>36 (10%)</td>
<td>62 (23%)</td>
</tr>
<tr>
<td>Non-targetlike</td>
<td>6 (3%)</td>
<td>9 (3%)</td>
<td>3 (1%)</td>
<td>-</td>
</tr>
<tr>
<td>RVCCs with guo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targetlike</td>
<td>1 (0%)</td>
<td>0 (0%)</td>
<td>1 (0%)</td>
<td>1 (0%)</td>
</tr>
<tr>
<td>Non-targetlike</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>286</td>
<td>346</td>
<td>276</td>
</tr>
</tbody>
</table>

Figure 5-6: Distribution of the sentential aspect
In the use of RVCCs without *le* or *guo*, the LILs’ error rate is 20%, which sharply dropped to 10% for the HILs to 10% and 1% for the ALs. Their non-target-like use of RVCCs without *le* is featured by either the lack of *le* in obligatory occasions or the misuse of the potential forms of RVCCs for a perfective use. (1) are some examples from the learner data.

In (1a) the learner used the potential form of the compound *mai dao* ‘buy arrive’ (buy) to express a past event that he/she bought many Chinese clothes. The potential form was inappropriate because it indicates the capability of a person or the likelihood for an event to take place. *Le* is required here to indicate that the event of ‘buying Chinese clothes’ is a closed event from the viewpoint of ‘now’. In (1b) the intended meaning is that ‘I’ received a debit card and check book from the bank in a week. Here the perfective marker *le* is required because the time adverbial *guo le yi ge xingqi* (within a week) and the advertial *jiu* (then) in the sentence emphasize the perfective state that ‘I’ am now in possession of a debit card and check book. The perfective marker *le* adds a sense of closure of the event to the sense of completion denoted by the compound *shou dao* ‘receive arrive’ (receive). (1c) is a similar case in which the use of *le* makes clear the fact that ‘he’ was caught by the police. Without *le*, it only implies the action *zhua zhu* ‘catch stay’ (catch) was completed, but does not indicate the consequence of the action *zhua zhu* ‘catch stay’ (catch). Instead of a past event, (1d) refers to a future event. *Le* in this sentence indicates a changed situation from not seeing to seeing ‘you’. In the interrogative question in (1e) *le* is required because it helps convey that the event of ‘seeing the frog’ is closed and completed. (1f) and (1g) are examples in which *le* is not permitted and therefore inappropriately used. Item (1f) does not permit the use of *le* because it is a negative form of the RVCC phrase *ting dao* ‘hear arrive’ (hear). The negative form of RVCCs cannot co-occur with *le*, because it implies the non-happening of an event. Example (1g) does not permit the use of *le* because it is a potential form of
the RVCC *kan jian* ‘look see’ (see). The potential form indicates the ability or inability of the agent to fulfill an action, which is not compatible with the perfective particle *le*.

(1)

RVCCs without *le /guo*

a  *我买得到很多中国的衣服。
    Wo mai de dao hen duo zhongguo de yifu.
    *I buy DE arrive very many Chinese DE clothes
    I am capable of buying many Chinese clothes.*

b  *過了一個星期，我就收到取款卡和一本支票簿。
    Guo le yi ge xingqi, wo jiu shou dao quKuan ka he yi ben zhiOpiao pu.
    *After LE one CL week, I then receive arrive debit card and one CL check book
    Within a week, I received a debit card and a check book.*

c  *结果，他被警察抓住。
    JieOguo, ta bei jingcha zhua zhu.
    *As a result, he BEI police catch stay
    As a result, he was caught by the police.*

RVCCs with *le*

f  *可是他没有被她听到了。
    Keshi ta meiyou bei ta ting dao le.
    *But he no BEI her listen arrive LE
    But she did not hear him.*

g  *可是我看不到冰碴。
    Keshi wo kan bu jian le bingcha.
    *But I look no perceive LE ice
    But I was not capable of seeing the ice.*
5.3 Qualitative analysis

In this section qualitative analysis is conducted to showcase the unique trajectories of development in acquiring different complement verbs. Case studies of two representative verb complements *dao* ‘arrive’ and *wan* ‘finish’ are carried out. Intra- and inter-learner variability in acquiring RVCCs is also investigated.

5.3.1 The case of *dao*

There are two reasons for conducting a case study on the complement verb *dao*. The quantitative analysis has shown that this verb has the highest frequency and most collocates for both the NSs and learners. More importantly, *dao* as a complement verb fulfills multiple roles. As a complement verb it can indicate either directionality or result. *Dao* is also one of the directional complements, as analyzed in the previous chapter. In the present chapter, the use of *dao* indicating ‘to succeed’ is analyzed. As mentioned earlier, *dao* in many RVCCs has been grammaticalized and is used as a grammatical particle with minimal lexical meaning. It is also worth mentioning that as a result of grammaticalization, *dao* shows varying degrees of grammaticality when collocated with different verbs and nouns. The grammaticalization of *dao* with activity verbs is lower than that of *dao* with state or achievement verbs. (Li, 1982; Che & Tang, 2010) In the former, the meaning of *dao* as a stand alone verb is brought into the compound, as in *zhao dao* ‘seek arrive’ (find) and *xue dao* ‘study arrive’ (learn). In the latter, *dao* functions as a grammatical particle and indicates the completion of an action. For instance, the compound *kan dao* ‘look arrive’ (see) cannot be literally understood as ‘succeed in looking’. The semantic function of *dao* in *kan dao* ‘look arrive’ is to add the completive information to the activity verb *kan* ‘look’, so that the compound denotes an achievement.
Table 5-9 lists all the collocations containing the complement verb *dao* that learners at the three proficiency levels produced. It can be seen that the number of collocations increases with the learners’ overall language proficiency. The LILs produced 14 collocations, the HILs 16, and the ALs 40. Although the LILs produced some collocations of *dao* with accomplishment and achievement verbs, ten out of fourteen were based on activities. The collocations produced by the HILs are mainly composed of activities and achievements. The collocations produced by the ALs are featured by a much diverse choice of activity and achievement verbs. Although different from the LILs and the HILs, the ALs also produced a collocation with an accomplishment verb.

Among the activity verbs, the ALs markedly increased the diversity of verbs that indicate one’s psychological or mental state, including *guancha* ‘observe’, *huiyi* ‘recall’, *lianxiang* ‘image’, *linglve* ‘realize’, *liaoyi* ‘guess’, *zhuyi* ‘notice’, *yishi* ‘realize’, *liaojie* ‘get to know’, *renshi* ‘realize’, and *kaolv* ‘consider’. The complement verb *dao* collocated with these verbs has a higher degree of grammaticality or conventionality than *dao* in compounds produced by the LILs or HILs.

Among the achievement verbs, the ALs also produced a large portion of compounds in which the grammatical *dao* is employed. It seems that *dao* develops as a content verb earlier than it does as a grammatical form. The more experienced a learner is, the more grammaticalized their use of *dao* becomes.

**Table 5-9: Collocations of the complement verb *dao* organized by V1 type**

<table>
<thead>
<tr>
<th>V1 Type</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>买到 <em>mai dao</em> ‘buy arrive’ (buy)</td>
<td>买到 <em>mai dao</em> ‘buy arrive’ (buy)</td>
<td>买到 <em>mai dao</em> ‘buy arrive’ (buy)</td>
<td></td>
</tr>
<tr>
<td>拿到 <em>na dao</em> ‘carry arrive’ (get)</td>
<td>拿到 <em>na dao</em> ‘carry arrive’ (get)</td>
<td>做到 <em>zuo dao</em> ‘do arrive’ (succeed)</td>
<td></td>
</tr>
<tr>
<td>找到 <em>zhao dao</em> ‘seek arrive’ (find)</td>
<td>找到 <em>zhao dao</em> ‘seek arrive’ (find)</td>
<td>找到 <em>zhao dao</em> ‘look-for arrive’ (find)</td>
<td></td>
</tr>
<tr>
<td>见到 <em>jian dao</em> ‘perceive arrive’ (see)</td>
<td>见到 <em>jian dao</em> ‘perceive arrive’ (see)</td>
<td>见到 <em>jian dao</em> ‘perceive arrive’ (see)</td>
<td></td>
</tr>
<tr>
<td>看到 kan dao ‘look arrive’ (see)</td>
<td>听到 ting dao ‘listen arrive’ (hear)</td>
<td>感到 gan dao ‘feel arrive’ (feel)</td>
<td></td>
</tr>
<tr>
<td>听到 ting dao ‘listen arrive’ (hear)</td>
<td>间到 wen dao ‘smell arrive’ (smell)</td>
<td>感受到 gan-shou dao ‘feel arrive’ (feel)</td>
<td></td>
</tr>
<tr>
<td>学到 xue dao ‘study arrive’ (learn)</td>
<td>想到 xiang dao ‘think arrive’ (think of)</td>
<td>提到 ti dao ‘mention arrive’ (mention)</td>
<td></td>
</tr>
<tr>
<td>帮到 bang dao ‘help arrive’ (help)</td>
<td>提到 ti dao ‘mention arrive’ (mention)</td>
<td>观察到 guan-cha dao ‘observe arrive’ (observe)</td>
<td></td>
</tr>
<tr>
<td>办到 ban dao ‘do arrive’ (succeed)</td>
<td>联系到 lian-xi dao ‘contact arrive’ (contact)</td>
<td>想到 xiang dao ‘think arrive’ (think of)</td>
<td></td>
</tr>
<tr>
<td>坐到 zuo dao ‘sit arrive’ (manage to find a vehicle)</td>
<td>回忆到 hui-yi dao ‘recall arrive’ (recall)</td>
<td>联想到 lian-xiang dao ‘associate arrive’ (associate with)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>料到 liao-dao ‘guess arrive’ (guess)</td>
<td>料到 liao-dao ‘guess arrive’ (guess)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>领略到 ling-lve dao ‘realize arrive’ (realize)</td>
<td>领略到 ling-lve dao ‘realize arrive’ (realize)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>明白到 ming-bai dao ‘understand arrive’ (understand)</td>
<td>明白到 ming-bai dao ‘understand arrive’ (understand)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>说到 shuo dao ‘speak arrive’ (speak of)</td>
<td>说到 shuo dao ‘speak arrive’ (speak of)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>体会到 ti-hui dao ‘understand arrive’ (understand)</td>
<td>体会到 ti-hui dao ‘understand arrive’ (understand)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>闻到 wen dao ‘smell arrive’ (smell)</td>
<td>闻到 wen dao ‘smell arrive’ (smell)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>注意到 zhu-yi dao ‘notice arrive’ (notice)</td>
<td>注意到 zhu-yi dao ‘notice arrive’ (notice)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>意识到 yi-shi dao ‘realize arrive’ (realize)</td>
<td>意识到 yi-shi dao ‘realize arrive’ (realize)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>了解到 liao-jie dao ‘get-to-know arrive’ (get to know)</td>
<td>了解到 liao-jie dao ‘get-to-know arrive’ (get to know)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>认识到 ren-shi dao ‘realize arrive’ (realize)</td>
<td>认识到 ren-shi dao ‘realize arrive’ (realize)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>考虑到 kao-lv dao ‘consider arrive’ (consider)</td>
<td>考虑到 kao-lv dao ‘consider arrive’ (consider)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>学到 xue dao ‘study arrive’ (learn)</td>
<td>学到 xue dao ‘study arrive’ (learn)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>吃到 chi dao ‘eat arrive’ (obtain certain food)</td>
<td>吃到 chi dao ‘eat arrive’ (obtain certain food)</td>
<td></td>
</tr>
</tbody>
</table>

**Achievement**

| 收到 shou dao ‘receive arrive’ (receive) | 收到 shou dao ‘receive arrive’ (receive) | 达到 da dao ‘reach arrive’ (succeed) |
| 订到 ding dao ‘book arrive’ (to book) | 碰到 peng dao ‘touch arrive’ (touch) | 获得到 huo-de dao ‘obtain arrive’ (obtain) |
| 得到 de dao ‘obtain arrive’ (obtain) | 受到 shou dao ‘receive arrive’ (suffer from) | 伤害到 shang-hai dao ‘hurt arrive’ (hurt) |
| 查到 cha dao ‘check arrive’ (find) | 连累到 lian-xi dao ‘contact arrive’ (contact) | 影响到 ying-xiang dao ‘influence arrive’ (influence) |
| *摔到 shuai dao ‘fall arrive’ | *接触到 jie-chu dao ‘contact arrive’ (contact) | 涉及到 she-ji dao ‘relate arrive’ (get related to) |
| *停到 ting dao ‘stop arrive’ | 接触到 jie-chu dao ‘contact arrive’ (contact) | 遭到 zao dao ‘suffer arrive’ (suffer) |
| | | 吸收到 xi-shou dao ‘absorb arrive’ (absorb) |
| | | 遇到 yu dao ‘encounter arrive’ (encounter) |

**Accomplishment**

| 经历到 jing-li dao ‘experience arrive’ (experience) |

**5.3.2 The case of wan**

The complement verb *wan* also occurs with high frequency in the NS and learner data, especially for the intermediate groups. Unlike *dao*, *wan* has distinctive lexical meaning that it brings into the RVCC compound. Hypothetically it should be collocated with activity verbs more easily and acquired by learners more readily. Table 5-10 lists the collocations produced by the learners with *wan*. Contrary to the complement verb *dao*, the number of collocations with *wan* decreased as learners’ overall language proficiency improved. The LILs produced 14 collocations, the HILs 6, and the ALs 5. The LILs not only produced the most collocations, but they also collocated *wan* with all four types of verbs. Their collocations with activity verbs are particularly diverse. The HILs also produced collocations with verbs of different types, but their overall
frequency decreased. The ALs produced very few collocations with \textit{wan}. The reason for the low frequency of \textit{wan} in the AL data may be due to the nature of the writing topics, and one should not assume that the lower production rate indicates the lack of lexical knowledge in producing compounds with \textit{wan}. It seems clear that the learners have mastered the use of \textit{wan} at an early stage of acquisition, as is demonstrated by the LILs’ productive use of \textit{wan}.

Table 5-10: Collocations of the complement verb \textit{wan} organized by V1 types

<table>
<thead>
<tr>
<th>Activity</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td>吃完 \textit{chi wan} ‘eat finish’ (finish eating)</td>
<td>吃完 \textit{chi wan} ‘eat finish’ (finish eating)</td>
<td>吃完 \textit{chi wan} ‘eat finish’ (finish eating)</td>
<td></td>
</tr>
<tr>
<td>看完 \textit{kan wan} ‘look finish’ (finish reading/watching)</td>
<td>看完 \textit{kan wan} ‘look finish’ (finish reading/watching)</td>
<td>看完 \textit{kan wan} ‘look finish’ (finish reading/watching)</td>
<td></td>
</tr>
<tr>
<td>写完 \textit{xie wan} ‘write finish’ (finish writing)</td>
<td>写完 \textit{xie wan} ‘write finish’ (finish writing)</td>
<td>写完 \textit{xie wan} ‘write finish’ (finish writing)</td>
<td></td>
</tr>
<tr>
<td>做完 \textit{zuo wan} ‘do finish’ (finish doing)</td>
<td>做完 \textit{zuo wan} ‘do finish’ (finish doing)</td>
<td>做完 \textit{zuo wan} ‘do finish’ (finish doing)</td>
<td></td>
</tr>
<tr>
<td>办完 \textit{ban wan} ‘do finish’ (finish handling)</td>
<td>办完 \textit{ban wan} ‘do finish’ (finish handling)</td>
<td>办完 \textit{ban wan} ‘do finish’ (finish handling)</td>
<td></td>
</tr>
<tr>
<td>洗完 \textit{xi wan} ‘wash finish’ finish washing</td>
<td>洗完 \textit{xi wan} ‘wash finish’ finish washing</td>
<td>洗完 \textit{xi wan} ‘wash finish’ finish washing</td>
<td></td>
</tr>
<tr>
<td>找完 \textit{zhao wan} ‘seek finish’ finish seeking</td>
<td>找完 \textit{zhao wan} ‘seek finish’ finish seeking</td>
<td>找完 \textit{zhao wan} ‘seek finish’ finish seeking</td>
<td></td>
</tr>
<tr>
<td>整理完 \textit{zheng-li wan} ‘arrange finish’ finish cleaning</td>
<td>整理完 \textit{zheng-li wan} ‘arrange finish’ finish cleaning</td>
<td>整理完 \textit{zheng-li wan} ‘arrange finish’ finish cleaning</td>
<td></td>
</tr>
<tr>
<td>走完 \textit{zou wan} ‘walk finish’ finish walking</td>
<td>走完 \textit{zou wan} ‘walk finish’ finish walking</td>
<td>走完 \textit{zou wan} ‘walk finish’ finish walking</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accomplishment</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td>考试完 \textit{kao-shi wan} ‘take-a-test finish’ finish taking a test</td>
<td>打完 \textit{kai-dao wan} ‘operate finish’ finish an operation</td>
<td>抽完 \textit{chou wan} ‘smoke finish’ finish smoking</td>
<td></td>
</tr>
<tr>
<td>上完（课） \textit{shang wan} ‘ascend finish’ finish classes</td>
<td>回完 \textit{hui wan} ‘return finish’ return</td>
<td>吸完 \textit{xi wan} ‘smoke finish’ finish smoking</td>
<td></td>
</tr>
<tr>
<td>试完 \textit{shi wan} ‘test finish’ finish a test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>考完 \textit{kao wan} ‘test finish’ (finish a taking a test)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.3.3 The case of individual learners

Individual learners are also found to demonstrate different degrees of development in acquiring the RVCCs. Here I will use longitudinal data from two students in the higher-intermediate group to show how they developed their knowledge of RVCCs. The data cover a time period of one academic semester (15 weeks), during which the students were periodically assigned eight essays with approximately one essay every two weeks. The students I focused on here are Wei and Lin, both of whom were third-year English-speaking Americans and have taken Chinese courses for four semesters. During the data collection, Wei produced six written essays while Lin produced eight.

Wei’s use of RVCCs with dao shows a linear development in accuracy and mastery. He produced sentence (2a) in essay #4, in which the verb kan ‘look’ was used without the complement verb. The omission of the complement verb here indicates a direct translation from the English verb ‘see’. However the Chinese verb kan is not the equivalent of the English verb ‘see’, because ‘see’ in English is an achievement verb, whereas kan ‘look’ in Chinese is a stative verb. The complement verb dao ‘arrive’ is required because the compound kan dao ‘look arrive’ (see) is an achievement verb phrase, the equivalent of the English verb ‘see’. In essay #8, Wei correctly produced the compound kan dao ‘look arrive’ (see). He also correctly produced zhao dao ‘seek arrive’ (find), another compound with dao. All this shows his improved mastery of the RVCCs ending with dao ‘arrive’.

(2)

a *我看了她泪眼汪汪所以说了“你泪眼汪汪的样子，一定很可怜。” (Essay #4)
Wo *kan* le ta lei-yan-wang-wang suoyi shuo le ‘ni lei-yan-wang-wang de yang-zi, yiding hen ke-lian.’
I *look* LE her tearing so say LE ‘Your tearing look, must very pitiful.’
I *saw* her tearful look and said, ‘You must be very sad.’

**c** 吃这个东西的时候，女朋友看到了他。(Essay #8)
Chi zhe ge dongxi de shihou, nv pengyou *kan dao* le ta.
Eat this CL thing DE time, girl friend *look arrive* LE him
While eating this (cake), his girlfriend *spotted* him.

**b** 不过，他饿的时候找到了女朋友做的蛋糕。(Essay #8)
Bu-guo, ta e de shihou *zhao dao* le nv pengyou zuo de dangao.
But, he hungry DE time *seek arrive* LE girl friend make DE cake
But when he was hungry he *found* the cake his girlfriend had made.

Unlike Wei who showed clear linear development in forming compounds with *dao*, Lin’s development of RVCCs was characterized by fluctuation, stagnation and even regression.

Consider the two forms of *dao* produced by Lin. The first, *kan dao* ‘look arrive’ (find), given in (3a) from essay #5, is correctly produced. However in (3b) from essay #7, Lin used the stative verb *kan* ‘look’ without the complement verb *dao* ‘arrive’. On an earlier occasion Lin produced the compound correctly, but in a later occasion he inappropriately omitted the complement verb.

In (3c) from essay #8, Lin again produced the correct compound. Fluctuation and regression can be seen in Lin’s use of the compound *kan dao* ‘look arrive’ (see). Another example is Lin’s use of the potential forms of RVCs. It is apparent from (3d) that Lin did not have a good understanding about the potential forms. In this sentence, the potential form was used mistakenly as a perfective aspect. The target form should be *zhao dao* ‘seek arrive’ (seek arrive) followed by the perfective aspect particle *le*.

Both (3e) and (3g) are from essay #5. In (3e) the potential form was used correctly because the intended meaning is the likelihood of finding the frog in the room. In (3g) the potential form was used erroneously because the intended meaning was the intentionality of the persons rather than the likelihood of an action. The fact that the potential form is used correctly in one occasion and erroneously in the other in the same essay indicates Lin’s erratic development.
of the potential form. In his later essays, no erroneous instance of the potential forms was identified. The only potential form that Lin produced in his later essays is (3g), in which the potential form of a RVCC was appropriately used. This shows Lin’s improved control over the potential forms.

(3)

看到 kan dao ‘look arrive’ (see)

a 他去看青蛙，才看到青蛙太太，还有青蛙孩子。(Essay #5)
Ta qu kan qingwa, cai kan dao qingwa you qingwa taitai, hai you qingwa hai-zi.
He go look frog, just look arrive frog have frog wife, also have frog children
He went to see the frog, and saw that the frog has a wife and children.

b *这个小孩子看了这两筐梨子，看了农夫在摘，不管了他的筐子。(Essay #7)
Zhe ge xiao hai-zi kan le zhe liang kuang li-zi, kan le nongfu zai zhai, bu-guan le ta-de kuangzi.
This CL little child look LE these two CL pear, look LE farmer ZAI pick, regardless LE his basket
This child saw two baskets of pears and the farmer picking pears without paying attention to his pears.

c 他到他们的家，看到了 ba ba 在吃孩子的 dan gao。(Essay #8)
Ta dao tamen-de jia, kan dao le ba ba zai chi hai-zi de qiu de dan gao.
He arrive their home, look arrive LE daddy ZAI eat child DE dan gao
He arrived at their house, and saw that daddy was eating children’s cake.

Potential forms

d *（我）找得到一个公寓，连找得到工作。(Essay #1)
(w) Zhao de dao yi ge gongyu, lian zhao de dao gongzuo.
(I) look DE arrive one CL apartment, even look DE arrive job
I was able to find an apartment and even a job.

e 在他的房子里面青蛙找不到。(Essay #5)
Zai ta-de fangzi limian qingwa zhao bu dao.
At his room inside frog look BU arrive
The frog cannot be found in his room.

f *他们一起去外面要找得到青蛙。(Essay #5)
Tamen yiqi qu waimian yao zhao de dao qingwa.
They together go outside will seek DE arrive frog
They went outside to look for the frog.
He distracted and didn’t see clearly, so he was knocked by the rock.

The case studies of Wei and Lin’s developing mastery of the RVCCs support a view of language development as a dynamic process. (Larsen-Freeman, 1997, 2002, 2006; Herdina & Jessner, 2002; Ellis & Larsen-Freeman, 2006; de Bot, Verspoor, & Lowie, 2007; de Bot, 2008; de Bot, Lowie & Verspoor, 2011; de Bot & Larsen-Freeman, 2011). The intra-individual and inter-individual variation (de Bot, 2008; Larsen-Freeman & Cameron, 2008; Verspoor, Lowie, & van Dijk, 2008) provides evidence for the understanding that L2 development is not always linear and stage-like, but is in many ways characterized by fluctuation, variation, and even regression (Larsen-Freeman, 2006).

5.4 Deviations of RVCCs

In order to investigate the sources of difficulty in acquiring DVCs, in this section I present the findings from error analysis. The inappropriate use of RVCCs is grouped into four categories: omission, misuse, overuse, and others. Omission is further examined in terms of V1 omission and V2 omission. Misuse is categorized as the inappropriate use of V1, V2, or the entire compound. In terms of overuse, only instances of V2 overuse are identified in the corpus. Potential form related errors refer to those that are due to the inappropriate use of the potential forms of RVCs. The ‘other’ category includes those pertaining to ordering, negative forms and object omission.

Table 5-11 summarizes the distribution of error types in the corpus. With regard to language proficiency, the LILs produced the most errors in total and also in V2 omission and
potential forms. The HIL produced fewer errors. The ALs produced the fewest errors. This forms a contrast with the error distribution of the DVCs, in which the HILs produced the most errors. Different error types show different patterns. The V2 omission, the most common errors among all of the non-NS groups, persisted among the intermediate and advanced learners, although the number of errors decreased markedly in the advanced learners. Errors related to the potential forms only occurred with intermediate learners, and were successfully overcome when the learners reached advanced language proficiency. This type of error becomes more conspicuous as the learners’ overall proficiency improves. In what follows, I will focus on the three error types that feature prominently in the acquisition process: omission and overuse of the V2, misuse, and potential form related deviations.

Table 5-11: Inappropriate use of RVCCs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Omission</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1 omission</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>V2 omission</td>
<td>45</td>
<td>41</td>
<td>18</td>
</tr>
<tr>
<td>V2 redundant</td>
<td>11</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td><strong>Misuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1 misuse</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>V2 misuse</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Compound misuse</td>
<td>4</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td><strong>Potential form related</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Order related</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Negative form related</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Object omission</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>109</td>
<td>89</td>
<td>47</td>
</tr>
<tr>
<td><strong>Accuracy rate</strong></td>
<td>56%</td>
<td>73%</td>
<td>87%</td>
</tr>
</tbody>
</table>
5.4.1 Omission or overuse of the V2

V2 related deviations constitute a large part of the errors in learners’ use of RVCCs, among which V2 omission is the most common error type. The V2s that tend to be overused by learners are discussed as well.

**V2 omission**

The omission of complement verbs is found to be mainly due to differences in verb types between the learners’ first language, English, and the target language, Chinese. Table (4) contains some instances of V2 omission produced by the learners. In (4a), the target form should be *kan dao* ‘look arrive’ or *kan jian* ‘look perceive’, which is the equivalent of the English verb ‘see’. The learner used the Chinese verb *kan* ‘look’ because it can be a direct translation of the English verb ‘see’. However the Chinese verb *kan* is atelic, thus cannot be the equivalent of the English verb ‘see’. Similarly, in (4b) the target form should be *zhao dao* ‘seek arrive’, in which the manner verb *zhao* ‘seek’ indicates the action and the complement verb *dao* ‘arrive’ indicates the completion of the action. The learner used the verb *zhao* ‘seek’ alone based on an understanding that *zhao* ‘seek’ is the equivalent of the English verb ‘find’, a telic verb. Example (4c) is a different case in which the complement verb *hao* is omitted. Because *hao* brings lexical meaning to the compound, it omission makes the sentence semantically incomplete. In (4d) the target form should be *ka zhu* ‘block stay’. The learner produced the verb *ka* ‘block’ based on a misunderstanding that *ka* is the English equivalent of ‘block’, whereas the Chinese equivalent of ‘block’ is *ka zhu*, a compound composed of an action verb and a resultative verb complement.

(4)
a  *然后他看一个女孩子骑自行车。
   Ranhou ta *kan yi ge nvHai-zi qi zixingche.*
   Then he *see one CL girl ride bicycle*
   Then he *saw a girl riding a bicycle.*
b *人类的生存问题解决之后，他们第二本领是找办法更好生活。
Renlei de shengcun wenti jiejue zhì hòu, tamen di-er benling shi zhào banfa gèng-hào shenghuo.
Human DE survival problem solve after, their second skill is seek method better live
After human beings solve the problem of survival, their second skill is to find ways to live better.

d *小狗把他的脑袋在瓶子裏卡了！
Xiao gou ba ta de naodai zai pingzi li ka le!
Little dog BA his head at bottle inside block LE
The puppy had his head stuck at the bottleneck.

c *先我会把我的衣服洗，再把我的衣服挂上。
Xian wo hui ba wo de yifu xi, zai ba wo de yifu gua shang.
First I will BA my clothes wash, then BA my clothes hang on
First I will wash my clothes and then hang them up.

I summarized all the target V2s that were erroneously omitted by the learners, which are listed in Table 5-12. The number in brackets indicates the token frequency of the compounds. It indicates that almost all cases in which the complement verb dao is omitted are due to the typological differences between English and Chinese with regard to verb types and lexical aspect. Such examples include kan ‘look’, zhao ‘seek’, ting ‘listen’, xue ‘study’, jian ‘perceive’, mai ‘buy’, shou ‘suffer’, de ‘get’, and zuo ‘do’. The learners’ omission of the complement verbs hao ‘good’, zhu ‘stay’ and cheng ‘succeed’ is most likely due to a lack of lexical knowledge and uncertainty about which complement verb to use.

Table 5-12: A list of omitted target V2s

<table>
<thead>
<tr>
<th>Learner produced forms</th>
<th>Target forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>到 dao ‘arrive’</td>
<td></td>
</tr>
<tr>
<td>看 kan ‘look’ (look) (40)</td>
<td>看到 kan dao ‘look arrive’ (see)</td>
</tr>
<tr>
<td>找 zhao ‘seek’ (seek) (17)</td>
<td>找到 zhao dao ‘seek arrive’ (find)</td>
</tr>
<tr>
<td>听 ting ‘listen’ (listen) (14)</td>
<td>听到 ting dao ‘listen arrive’ (hear)</td>
</tr>
<tr>
<td>学 xue ‘study’ (learn) (4)</td>
<td>学到 xue dao ‘study arrive’ (learn)</td>
</tr>
<tr>
<td>见 jian ‘perceive’ (perceive) (4)</td>
<td>见到 jian dao ‘perceive arrive’ (see)</td>
</tr>
</tbody>
</table>
There are a good number of cases in which the V2 is inappropriately overused. Several such cases also involve the complement verb *dao*. The following are some examples. In (5a) the target form should be *zhao* ‘seek’, because the past future tense was used to indicate intentionality. The complement verb *dao* ‘arrive’ is not required in this case since the complement verb implies completive aspect, which is incongruent with the intentionality of the speaker in the context. In (5b) the learner used the compound *kan dao* ‘look arrive’ (see), which is inappropriate because the intended meaning is ‘to watch’. The target form should be *kan* ‘watch’. In (5c) the intended
meaning is that my letter was read by my mom. In this case, the complement verb \textit{wan} ‘finish’ is not necessary, because the verb \textit{kan} ‘read’ alone can indicate the fact that my letter was read by my mom. It is not necessary to add the information about whether my mom finished reading the letter.

(5)
\begin{enumerate}
\item a. *我有一次去了一家小商店，想找到一张Etwas的光碟。
   \textit{Wo you yi ci qu le yi jia xiao shangdian, xiang zhao dao yi zhang Etwas de guangdie.}
   I have one CL go LE one CL small store, want \textit{seek arrive} one CL Etwas De disk
   Once I went to a small store to \textit{look for} a disk of Etwas.

\item b. *我看到了很多美国文艺片。
   \textit{I \textit{kan dao} le hen duo meiguo wenyi pian.}
   I \textit{look arrive} LE very many American drama movie
   I \textit{watched} many American drama movies,

\item c. *那時候，我的信被我媽媽看完了！
   \textit{Na shihou, woOde xin bei wo mama \textit{kan wan} le!}
   That time, my letter BEI my mom see \textit{finish} LE
   By then, my mom has \textit{finished reading} my letter!
\end{enumerate}

I summarized the compounds in which the V2s are overused. It is observed that the overuse to a large extent resulted from a confusion in understanding the meaning of the main verbs and the corresponding verb compound. For instance, students confused the pairs: \textit{zhao} (seek) versus \textit{zhao dao} (find), \textit{kan} (watch, read or visit) versus \textit{kan dao} (see), \textit{de} (get; receive) versus \textit{de dao} (get), \textit{zuo} (do) versus \textit{zuo dao} (succeed), \textit{mai} (buy) versus \textit{mai dao} (manage to buy something with efforts).
Table 5-13: A list of overused V2s

<table>
<thead>
<tr>
<th>Learner-produced form</th>
<th>Target form</th>
</tr>
</thead>
<tbody>
<tr>
<td>到 dao ‘arrive’</td>
<td></td>
</tr>
<tr>
<td>找到 zhao dao ‘seek arrive’ (seek) (8)</td>
<td>找 zhao ‘seek’ (seek)</td>
</tr>
<tr>
<td>看到 kan dao ‘look arrive’ (see) (7)</td>
<td>看 kan ‘look’ (watch)</td>
</tr>
<tr>
<td>得到 de dao ‘get arrive’ (get) (3)</td>
<td>得 de ‘get’ (get)</td>
</tr>
<tr>
<td>做到 zuo dao ‘do arrive’ (accomplish) (2)</td>
<td>做 zuo ‘do’ (do)</td>
</tr>
<tr>
<td>买到 mai dao ‘buy arrive’ (manage to buy) (2)</td>
<td>买 mai ‘buy’ (buy)</td>
</tr>
<tr>
<td>帮到 bang dao ‘help arrive’ (help) (1)</td>
<td>帮 bang ‘help’ (help)</td>
</tr>
<tr>
<td>完 wan ‘finish’</td>
<td></td>
</tr>
<tr>
<td>看完 kan wan ‘look finish’ (finish reading/watching) (1)</td>
<td>看 kan ‘look’ (read)</td>
</tr>
<tr>
<td>成 cheng ‘succeed’</td>
<td></td>
</tr>
<tr>
<td>变成 bian cheng ‘change become’ (change into) (1)</td>
<td>变 bian ‘change’ (change)</td>
</tr>
</tbody>
</table>

5.4.2 Misuse

The misuse of RVCCs is worth investigating because, unlike the other types of errors, it is one that persists across all learner groups. The ALs are even found to have made more errors of this type than the intermediate learners. In what follows, I will look at the misuse of the V2, the V1, and the compound separately.

V2 misuse

The misuse of V2s is found to occur when the main verb is able to take different complement verbs, and the consequent compounds form semantically synonymous pairs. Due to limited of knowledge of the fine-tuned differences between the synonyms sharing the same main verb, learners produced the compounds that are semantically inappropriate for the relevant
context. For instances, in (6a) the intended meaning is that the speaker has obtained a visa. The appropriate form should be ban hao ‘do good’ (achieve successfully). The learner used a synonym of ban hao, i.e. ban dao ‘do arrive’ (achieve). The two compounds differ in the complement verb. The compound with dao implied ‘to succeed in something after overcoming difficulties’. The compound with hao implied that something is well settled. In this particular context, hao is semantically more appropriate than dao. In (6b) the intended meaning is whether finding a writing job is a good option. To express ‘find’, the compound that expresses ‘to find’ is zhoao dao ‘seek arrive’ (find). Zhoao wan ‘seek finish’ (finish searching) does not fit the context. In (6c) the compound zhoao dao is inappropriate, because it implies ‘succeed at something after overcoming difficulties’. In the context zhoao chu is a semantically better choice that denotes ‘do something’.

(6)

a *你办了签证吗？我已经办到le。
   Ni ban le qianzheng ma? Wo yijing ban dao le.
   You apply LE visa QUES? I already apply arrive LE
   Have you applied for visa? I have got mine.

b *我不知道如果我找完一个写的工作，因为我也要有钱。
   Wo bu zhidao ruguo wo zhoao wan yi ge xie de gongzuo, yinwei wo ye yao you qian.
   I not know if I find finish one CL writing DE job, because I also need have money
   I don’t know if I should find a writing job, because I also need money.

c *暑假放三个月，可能做到什麼事出來呢？
   Shu jia fang san ge yue, keneng zhoao dao shenme shi chulai ne?
   Summer break have three CL month, possibly do arrive what thing come-out QUES
   In the three months’ summer break, what can one possibly do?

V1 misuse

There are not many instances of V1 misuse in the corpus. The few instances that do occur are found to involve synonyms that share the same complement verbs. These synonyms can be
similar in form but different in meaning. They can also be similar in meaning but different in connotation. For instance, in (7a) de dao ‘get arrive’ (obtain) is not appropriate because it means ‘to obtain something with effort’. In receiving gifts, one does not need to make painstaking efforts. Therefore the target form should be shou dao ‘receive arrive’ (receive). Example (7b) is incorrect, because the compound de dao ‘get arrive’ (obtain) implies making an effort to obtain something good or beneficial. Fines are not usually construed as a positive occurrence, so one cannot collocate de dao (obtain) with fakuan ‘fines’. The correct form should be shou dao ‘suffer arrive’, which is a synonym of de dao ‘get arrive’ (obtain) but has a derogatory meaning.

(7)

a  *我也 得到很多礼物。
   Wo ye de dao hen duo liwu.
   I also get arrive very many gift
   I also received many gifts.

b  *在公共场所抽烟的人 得到的罚款是理所当然的。
   Zai gonggong changsuo chouyan de ren de dao de fakuan shi lisuodangran de.
   At public site smoke DE people get arrive DE fine is necessary DE
   It is granted that those who smoke in public should get fined.

**Compound misuse**

The compound misuse is found to refer to the inappropriate collocation between the compound and the object noun/adjective phrase due to semantic constraints, stylistic concerns, or simply conventionality. For instance, in (8b) the compound qi dao ‘rise arrive’ (effect) cannot be collocated with the noun phrase youhai de yingxiang (harmful influence), because the compound qi dao ‘rise arrive’ has a positive connotation that is usually collocated with positive influences. The target form should chan sheng ‘effect’, which has a neutral connotation and can collocate with either positive or negative influences. In (8a) the compound de dao ‘get arrive’ (get) is
collocated with shenghuo ‘life’. It is inappropriate for the reason that de dao usually collocate with something substantial whose possession can be transferred, while shenghuo ‘life’ is not a transferrable object. The appropriate compound for shenghuo ‘life’ is guo shang ‘live ascend’ (start to live a certain kind of life). Moving to (8c), the English verb ‘find’ can collocate with the noun ‘difference’, but in Chinese what is conventionally collocated with the noun qubie ‘difference’ is faxian ‘discover’.

(8)
a  *这个和尚都想靠别人生活，从别人的工作得到一个富有的生活。
    Zhe ge heshang dou xiang kao bieren shenghuo, cong bieren-de gongzuo de dao yi ge fuyou de shenghuo.
    This CL monk all want rely others live, from others work get arrive one CL rich DE life
    These monks all want to get a rich life through others’ hard work.

b  *这对环境也起到了有害的影响。
    Zhe dui huanjing ye qi dao le youhai-de yingxiang.
    This to environment also rise arrive LE harmful influence
    This has also had harmful influence on environment.

c  *不过，你如果现在来他们俩比一比，你难以找到什么大的差别。
    Buguo, ni ruguo xianzai lai tamen lia bi yi bi, ni nanyi zhang dao shenme da-de chabie.
    But, you if now come them two compare one compare, you hardly seek arrive what big difference.
    But if you compare the two of them, you can hardly find any differences.

5.4.3 Potential form related deviations

Intermediate learners showed limited understanding about the potential forms of RVCCs. The potential forms of RVCCs indicate the possibility of an event or action. The positive potential form requires a ‘potential’ prefix –de- between the V1 and the V2, and the negative potential form requires a ‘potential’ prefix –bu- between the V1 and the V2. The potential form indicates the ability or inability of the agent to realize the state denoted by the V2 by conducting the action denoted by the V1. It is not compatible with the future tense, past tense, or perfective
aspect. Intermediate learners seem to be unclear about the semantic function of the potential forms. They produced sentences that combine the use of potential forms with the future or past tense. For instance, in (9a) the sentence refers to a future event indicated by the future tense marker *yao* ‘will’. However the learner used the form *zhao de dao* ‘seek de arrive’ (able to find), which essentially expresses whether the action of ‘find’ is possible or not. Item (9b) refers to an action that has taken place. Therefore, the correct form should be *zhao dao* ‘find arrive’ (found). The learner erroneously used the potential form instead of the perfective aspect marker *le*.

Similarly, the interrogative question in (9c) refers to a past event, which requires the use of the aspect marker *le*. Example (9d) is a case in which the potential form is missing in obligatory occasions. What the learner produced is a literal translation of the English expression ‘cannot help laughing’. The target form should be *ren bu zhu xiao* ‘bear but stay laugh’. The inappropriate forms related to the potential forms indicate that intermediate learners find it difficult to understand the difference between the completive aspect denoted by the RVCCs and the potential use of RVCCs. The fact that no inappropriate use of potential forms is found in the ALs shows that the type of error may be overcome as learners’ overall language proficiency improves.

(9)

a *他要幫我找得到機票。
Ta yao bang wo *zhao de dao* ji piao.
He will help me *seek DE arrive* airplane ticket
He will help me to find an airplane ticket.

b *上個星其我把便宜的機票找得到。
Shang ge xingqi wo ba pianyi de ji piao *zhao de dao*.
Last CL week I BA cheap DE airplane ticket *seek DE arrive*
Last week I *found* a cheap airplane ticket.

c *他請鼹鼠和貓頭鷹‘你看不看到青蛙？’
Ta qing yanshou he *mao tou ying* ‘ni *kan bu kan dao* qingwa?’
He invite mole and owl ‘you look BU look arrive frog?’
He invited mole and owl, ‘Can you *see* a frog?’

d *看到那張照片我總是無法忍住笑！
He will help me *seek DE arrive* airplane ticket
He will help me to find an airplane ticket.
Kan dao na zhang zhaopian wo zongshi wufa ren zhu xiao!
See arrive that CL photo I always cannot bear stay laugh
I always cannot help laughing when seeing that photo!

5.5 Summary

In this chapter I analyzed the acquisition of RVCCs by CFL learners of the intermediate and advanced proficiency levels. The quantitative analysis shows that the LILs had surprisingly good lexical knowledge of RVCCs. They produced a good number of RVCCs as well as distinct RVCCs, which even outnumbered the HILs. Still a conspicuous difference is found in lexical diversity between the learners and the NSs. Compared with DVCs, the acquisition of RVCCs seems to be mastered earlier in the learning process.

Empirical data shows that RVCCs followed by noun phrases is the predominant structure used by the learners and the NSs. Other structures that are also moderately represented in the learner and NS data include bare RVCCs and RVCCs followed by clauses. There are very few instances of RVCCs followed by adjectives or in BA/BEI structures. Learners started to use different syntactic patterns at an early stage and showed similar distribution of syntactic patterns to the NSs, indicating that the choice of syntactic structures is not difficult for these young adult L2 learners. RVCCs in BEI structures are not represented in the LILs data, which can be explained by the fact that the BEI structure was not formally introduced to the learners until the third year of their formal instruction. RVCCs followed by adjectives are rare in the NS and learner data. No such instance was found among the intermediate learners, indicating that this pattern occurred later in the acquisition process.

The analysis of the lexical aspect shows that the most frequent V1 type is activity verbs. The learners displayed similar patterns of V1 types to the NSs. The analysis of sentential aspect shows that RVCCs more often than not occur without the perfective markers le or guo. The co-
occurrence of RVCCs and le is not rare, because of their different semantic roles in a sentence. The learners, especially the intermediate learners, produced a fair amount of inappropriate use in relation to sentential aspect. They are found to have omitted le on obligatory occasions or misused the potential forms for the perfective aspect marker. Their over use of le is found to occur in the negative, interrogative and potential forms of RVCCs, with which the perfect marker le is not semantically compatible.

The qualitative analysis makes it clear that different complement verbs are acquired to different degrees. The case studies of dao and wan show that complement verbs with distinctive content meanings are acquired earlier by the learners. The grammaticalized use of the complement verbs takes longer to be acquired and there is a clear difference in the use of these particles between the less experienced and the more experienced learners. The case study of two individual learners in acquiring the complement verb dao and the potential forms of RVCCs supports the view that rather than linear development, the acquisition of RVCCs is a process of progression, stablization, fluctuation and regression.

The accuracy rate of these learners steadily improved with their improved language proficiency, which is justifiable due to relatively closed set of the RVCS complements. The most frequently committed errors are the omission or overuse of the V2, misuse, and errors related to the potential forms of RVCCs. The omission and overuse of V2s are found to arise from the same source: confusion about the verb forms with or without the complement verbs, and their L1 English transfer. Deviations of this type are identified not only in the intermediate learners but in the advanced learners, and constitute a large part of all instances of deviations. The misuse of the V1, V2 or the compound is found to be about synonyms and verb-noun collocations. The synonyms refer to compounds sharing the same V2 or compounds with the same V1. The verb-noun collocations refer to the semantic constraints, stylistic concerns, or conventionality in collocating a RVCC with a noun or adjective phrase. The majority of the misused cases can be
explained by the L1 English transfer. Such errors persisted among the intermediate and advanced learners, showing that this is a difficult feature to control. Deviations related to the potential forms are found to have only existed among the intermediate learners, suggesting that such errors are more readily overcome as the learners’ overall language proficiency improves.
Chapter 6

CFL Learners’ Acquisition of Result-State Resultative Verb Complements (RVCSs)

This chapter explores the acquisition of the RVCSs by CFL learners. I will present the overall distribution of RVCSs in the corpus, and analyze learners’ use of RVCSs from three perspectives: lexical diversity, syntactic patterns and sentential aspect. I will then discuss the deviations in RVCSs, which sheds light on the sources of difficulty in acquiring RVCSs. This chapter is concluded with a summary of the findings.

6.1 Distribution of RVCSs

Due to differences in essay length and size of the datasets, the distribution of RVCSs is measured through three indices: the total number of RVCSs, the average number RVCSs in each essay, and the average number of RVCSs for every 1000 Chinese characters. For each index, both the type and token counts are provided. The type count refers to the number of unique RVCSs; the token count refers to all instances of RVCSs. Table 6-1 presents the descriptive statistics for the distribution of RVCSs in the corpus. In the table, the number of types (i.e. unique RVCSs) is specified followed by the number of tokens in brackets. Figure 6-1 and 6-2 are the graphic presentations of the type and token measures.
Table 6-1: Distribution of RVCSs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td># of RVCSs</td>
<td>27 (63)</td>
<td>49 (100)</td>
<td>65 (142)</td>
<td>120 (199)</td>
</tr>
<tr>
<td># of RVCSs per essay</td>
<td>0.07 (0.15)</td>
<td>0.24 (0.49)</td>
<td>0.38 (0.83)</td>
<td>1.20 (1.99)</td>
</tr>
<tr>
<td># of RVCSs per 1000 Chinese characters</td>
<td>0.29 (0.67)</td>
<td>0.74 (1.51)</td>
<td>0.98 (2.13)</td>
<td>1.37 (2.28)</td>
</tr>
</tbody>
</table>

Figure 6-1: Distribution of unique RVCSs
Both the type and token measures show a clear positive relationship between the frequency of RVCSs and the learners’ overall language proficiency. A steady increase is observed in both measures from the less experienced to the more experienced learners. The NSs greatly outnumbered all learner groups in both measures, especially in the number of unique RVCSs. Since the number of distinct RVCSs is a good indicator of productivity in RVCSs, the descriptive statistics indicate that the learners’ productivity in RVCSs improves as their overall language proficiency improves. On the other hand, the gap between the learner and the NSs shows that the advanced learners still have not achieved target-like frequency and diversity in RVCSs.
6.2 Learners’ choice of RVCSs

I analyze learners’ use of the RVCSs from the perspectives of lexical diversity, syntactic patterns and sentential aspect. The lexical diversity of the components of RVCSs will shed light on how productively learners use the RVCSs. The distribution of the different syntactic patterns of RVCSs will show how learners develop their mastery of RVCS related patterns over time. The analysis of sentential aspect will provide insights into learners’ understanding of the semantic functions of each component and the semantic relationship between RVCSs and other aspect markers in Chinese.

6.2.1 Lexical diversity

A RVCS has two components: a main verb indicating the action (referred to as V1) and a complement verb indicating the completion of the action (referred to as V2). I compare learners’ choice of each component respectively and their component diversity by measuring the ratio of V1 to V2.

Component diversity

I counted the number of V2s and V1s respectively and calculated the ratio of V1 to V2. (Table 6-2) A noticeable increase in the numbers of unique V2s and V1s is observed from the learners to the NSs and from the intermediate learners to the advanced learners. The V1/V2 ratios did not change much from the learners to the NSs, or from the less experienced to more experienced learners. Figure 6-3 compares the V1/V2 ratios of the three types of RVCSs. It clearly shows that the component diversity of RVCSs is much lower than DVCs and RVCCs for all groups. Unlike the DVCs and RVCCs which showed a steady increase, the component diversity
of RVCSs barely changed. This might be due to the much lower frequency of the RVCSs in the corpus. Therefore despite the fact that RVCCs are the only type that has an open class of members for both the V1s and V2s, due to its lower frequency in discourse, the component diversity of RVCCs is not as high as it should be.

**Table 6-2: Component diversity of RVCSs**

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of V2</td>
<td>12</td>
<td>17</td>
<td>31</td>
<td>53</td>
</tr>
<tr>
<td>Number of V1</td>
<td>23</td>
<td>41</td>
<td>46</td>
<td>90</td>
</tr>
<tr>
<td>V1/V2</td>
<td>1.91</td>
<td>2.41</td>
<td>1.48</td>
<td>1.70</td>
</tr>
</tbody>
</table>

V1/V2 = Average number of V1s that a V2 co-occurs with

**Figure 6-3: V1/V2 ratios of the three types of RVCs**

*The complement verb (V2)*

As discussed in the literature chapter, most adjectives and some verbs can occupy the V2 slot. The numbers of V2s are respectively 12 for the LILs, 17 for the HILs, 31 for the ALs and 53
for the NSs. Table 6-3 lists the V2s that occurred in the corpus for at least three times (the number indicates the unique RVCSs with the same V2, and that in brackets indicates the token frequency). As language proficiency improves, the number of unique V2s increased, which indicates an increasing lexical diversity in the choice of the V2s. Besides adjectives, verbs are also used by both learners and NSs. Some examples are kai ‘open’, dong ‘understand’, diao ‘fall’, diao ‘fall, and zou ‘walk’.
Table 6-3: A list of V2s produced by the learners and NSs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>V2</th>
<th>#</th>
<th>HILs</th>
<th>V2</th>
<th>#</th>
<th>ALs</th>
<th>V2</th>
<th>#</th>
<th>NSs</th>
<th>V2</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>好 hao</td>
<td>好 hao</td>
<td>8 (18)</td>
<td>死 si ‘dead’</td>
<td>死 si ‘dead’</td>
<td>8 (23)</td>
<td>大 da</td>
<td>大 da</td>
<td>2 (20)</td>
<td>开 kai</td>
<td>开 kai</td>
<td>11 (28)</td>
</tr>
<tr>
<td>2</td>
<td>好 hao</td>
<td>好 hao</td>
<td>5 (14)</td>
<td>倒 dao ‘fall’</td>
<td>倒 dao ‘fall’</td>
<td>4 (19)</td>
<td>好 hao</td>
<td>好 hao</td>
<td>15 (16)</td>
<td>清 qing</td>
<td>清 qing</td>
<td>5 (16)</td>
</tr>
<tr>
<td>3</td>
<td>懂 dong</td>
<td>懂 dong</td>
<td>2 (8)</td>
<td>走 zou ‘walk’</td>
<td>走 zou ‘walk’</td>
<td>10 (15)</td>
<td>少 shao ‘little; few’</td>
<td>少 shao ‘little; few’</td>
<td>1 (16)</td>
<td>会 hui</td>
<td>会 hui</td>
<td>2 (13)</td>
</tr>
<tr>
<td>4</td>
<td>坏 huai</td>
<td>坏 huai</td>
<td>4 (7)</td>
<td>坏 huai</td>
<td>坏 huai</td>
<td>5 (8)</td>
<td>会 hui</td>
<td>会 hui</td>
<td>1 (13)</td>
<td>满 man</td>
<td>满 man</td>
<td>8 (13)</td>
</tr>
<tr>
<td>5</td>
<td>开 kai</td>
<td>开 kai</td>
<td>1 (7)</td>
<td>开 kai</td>
<td>开 kai</td>
<td>2 (5)</td>
<td>高 gao</td>
<td>高 gao</td>
<td>1 (9)</td>
<td>好 hao</td>
<td>好 hao</td>
<td>6 (12)</td>
</tr>
<tr>
<td>6</td>
<td>动 dong</td>
<td>动 dong</td>
<td>1 (3)</td>
<td>好 hao</td>
<td>好 hao</td>
<td>2 (4)</td>
<td>掉 diao</td>
<td>掉 diao</td>
<td>4 (8)</td>
<td>亮 liang</td>
<td>亮 liang</td>
<td>2 (12)</td>
</tr>
<tr>
<td>7</td>
<td>破 po</td>
<td>破 po</td>
<td>1 (4)</td>
<td>坏 huai</td>
<td>坏 huai</td>
<td>3 (5)</td>
<td>会 hui</td>
<td>会 hui</td>
<td>3 (5)</td>
<td>走 zou</td>
<td>走 zou</td>
<td>6 (9)</td>
</tr>
<tr>
<td>8</td>
<td>掉 diao</td>
<td>掉 diao</td>
<td>2 (3)</td>
<td>开 kai</td>
<td>开 kai</td>
<td>3 (5)</td>
<td>会 hui</td>
<td>‘open’</td>
<td>3 (5)</td>
<td>尽 jin ‘end’</td>
<td>尽 jin ‘end’</td>
<td>7 (7)</td>
</tr>
<tr>
<td>9</td>
<td>懂 dong</td>
<td>懂 dong</td>
<td>1 (3)</td>
<td>错 cuo ‘wrong’</td>
<td>错 cuo ‘wrong’</td>
<td>2 (4)</td>
<td>近 jin</td>
<td>近 jin</td>
<td>2 (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>满 man</td>
<td>满 man</td>
<td>1 (3)</td>
<td>低 di</td>
<td>低 di</td>
<td>1 (4)</td>
<td>大 da ‘big’</td>
<td>大 da ‘big’</td>
<td>5 (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>走 zou</td>
<td>走 zou</td>
<td>4 (4)</td>
<td>紧 jin ‘tight’</td>
<td>紧 jin ‘tight’</td>
<td>4 (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>升 sheng</td>
<td>升 sheng</td>
<td>4 (4)</td>
<td>破 po</td>
<td>破 po</td>
<td>4 (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>断 duan</td>
<td>断 duan</td>
<td>1 (3)</td>
<td>伤 shang</td>
<td>伤 shang</td>
<td>4 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>强 qiang</td>
<td>强 qiang</td>
<td>2 (3)</td>
<td>醒 xing</td>
<td>醒 xing</td>
<td>4 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>坏 si ‘dead’</td>
<td>坏 si ‘dead’</td>
<td>3 (3)</td>
<td>透 tou</td>
<td>透 tou</td>
<td>3 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>倒 dao ‘fall’</td>
<td>倒 dao ‘fall’</td>
<td>3 (3)</td>
<td>透 tou</td>
<td>透 tou</td>
<td>3 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>掉 diao</td>
<td>掉 diao</td>
<td>3 (3)</td>
<td>透 tou</td>
<td>透 tou</td>
<td>3 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>丢 diu</td>
<td>丢 diu</td>
<td>1 (3)</td>
<td>透 tou</td>
<td>透 tou</td>
<td>3 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>碎 sui</td>
<td>碎 sui</td>
<td>2 (3)</td>
<td>透 tou</td>
<td>透 tou</td>
<td>3 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to Zhang (1999), RVCS compounds composed of a verb and an adjective based on the semantic entailment of the adjectives. For instance, adjectives such as hao ‘good’ and qiang ‘strong’ indicate a clear positive entailment, adjectives such as tou ‘transparent’ or xing ‘awake’ are neutral in their semantic entailment, and adjectives such as si ‘dead’ have negative
entailments. Following Zhang (1999), I categorized the V2s into four types: adjectives with positive entailments, adjectives with neutral entailments, adjectives with negative entailments, and verbs. Table 6-4 summarizes the different types of V2s and Figure 6-4 is its graphic presentation.

Table 6-4: Distribution of V2 types

<table>
<thead>
<tr>
<th>V2 types</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>8 (30%)</td>
<td>5 (10%)</td>
<td>26 (40%)</td>
<td>9 (8%)</td>
</tr>
<tr>
<td>Neutral</td>
<td>3 (11%)</td>
<td>11 (22%)</td>
<td>17 (26%)</td>
<td>72 (60%)</td>
</tr>
<tr>
<td>Negative</td>
<td>12 (44%)</td>
<td>19 (39%)</td>
<td>10 (15%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>Verb</td>
<td>4 (15%)</td>
<td>14 (29%)</td>
<td>12 (18%)</td>
<td>24 (20%)</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>49</td>
<td>65</td>
<td>120</td>
</tr>
</tbody>
</table>

V2 types

<table>
<thead>
<tr>
<th>V2 types</th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6-4: Distribution of V2 types

In agreement with Zhang’s (1999), the NS data shows that the most frequently used adjectives are neutral. In contrast, the learners tend to prefer adjectives with either positive or
negative entailments. The intermediate learners, LILs and HILs alike, produced more adjectives with negative entailments, while the advanced learners produced more adjectives with positive entailments. This suggests that unlike the NSs, the learners are more biased in their semantic preferences when selecting adjective complements. The higher frequency of adjectives with a negative entailment by the LILs and HILs might be related to the input they received. A survey of the textbooks shows that they introduced a larger number of V2s with a negative entailment, such as hao ‘good’, huai ‘bad’, si ‘dead’, cuo ‘dead’, po ‘broken’, and gan jing ‘clean’. Indeed, these V2s are found to be of high frequency in the LILs’ and HILs’ data. The slightly higher frequency of adjectives with a positive entailment by the ALs might be due to the nature of the writing and the specific writing tasks. Because the ALs wrote the essays in taking the HSK test, learners may tend to use adjectives with a positive entailment to describe their life experiences or express a positive attitude. Some examples are jia qiang ‘add strong = strength’, biaoxian hao ‘behave good = behave well’, gai zheng ‘change correct = correct’, nong hao ‘get good = repair’.

To show how the learners improve their lexical diversity in RVCS compounds, I listed the RVCS compounds of the adjective hao ‘good’ produced by the LILs and ALs in Table 6-5. LILs tend to use a general verb for each semantic reference. For instance, they used the verbs fang ‘put’, xue ‘study’, wan ‘play’, and shui ‘sleep’. The ALs were able to use synonyms for the same semantic reference using by employing synonyms. For instance, to express ‘to educate well’ the ALs produced the following synonyms jiao hao ‘teach good’, guanjiao hao ‘discipline good’, jiaoyu hao ‘educate good’, and jiaodao hao ‘educate good’. To express ‘to do something well’, the ALs produced zuo hao ‘do good’, dali hao ‘manage good’ and shixing hao ‘carry out good’. These words have similar connotations but differ in their denotations and consequently collocate with different subjects and objects. The use of the different verbs shows a developed mastery of the various RVCS compounds with the same complements.
Table 6-5: RVCSs with the complement hao ‘good’

<table>
<thead>
<tr>
<th>好</th>
<th>hao</th>
<th>‘good’</th>
<th>(well; to a desirable result)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LILs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>放好</td>
<td>fang hao</td>
<td>‘put good’</td>
<td>(put in place)</td>
</tr>
<tr>
<td>挂好</td>
<td>gua hao</td>
<td>‘hang good’</td>
<td>(hang something to a desirable result)</td>
</tr>
<tr>
<td>接好</td>
<td>jie hao</td>
<td>‘fetch good’</td>
<td>(safely take something to a place)</td>
</tr>
<tr>
<td>玩好</td>
<td>wan hao</td>
<td>‘play good’</td>
<td>(play to one’s heart’s content)</td>
</tr>
<tr>
<td>考好</td>
<td>kao hao</td>
<td>‘take.exam good’</td>
<td>(perform well in an exam)</td>
</tr>
<tr>
<td>睡好</td>
<td>shui hao</td>
<td>‘sleep good’</td>
<td>(sleep well)</td>
</tr>
<tr>
<td>学好</td>
<td>xue hao</td>
<td>‘study good’</td>
<td>(study to a desirable result)</td>
</tr>
<tr>
<td>准备好</td>
<td>zhunbei hao</td>
<td>‘prepare good’</td>
<td>(prepare to a desirable result)</td>
</tr>
<tr>
<td>ALs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>学好</td>
<td>xue hao</td>
<td>‘study good’</td>
<td>(study to a desirable result)</td>
</tr>
<tr>
<td>做好</td>
<td>zuo hao</td>
<td>‘do good’</td>
<td>(do something to a desirable result)</td>
</tr>
<tr>
<td>当好</td>
<td>dang hao</td>
<td>‘be good’</td>
<td>(perform to a desirable result)</td>
</tr>
<tr>
<td>想好</td>
<td>xiang hao</td>
<td>‘think good’</td>
<td>(think well)</td>
</tr>
<tr>
<td>打好</td>
<td>da hao</td>
<td>‘hit good’</td>
<td>(do something to a desirable result)</td>
</tr>
<tr>
<td>弄好</td>
<td>nong hao</td>
<td>‘make good’</td>
<td>(make something to a desirable result)</td>
</tr>
<tr>
<td>教好</td>
<td>jiao hao</td>
<td>‘teach good’</td>
<td>(teach someone to a desirable result)</td>
</tr>
<tr>
<td>睡好</td>
<td>shui hao</td>
<td>‘sleep good’</td>
<td>(sleep well)</td>
</tr>
<tr>
<td>管教好</td>
<td>guanjiao hao</td>
<td>‘discipline good’</td>
<td>(discipline to a desirable result)</td>
</tr>
<tr>
<td>教育好</td>
<td>jiaoyu hao</td>
<td>‘educate good’</td>
<td>(educate to a desirable result)</td>
</tr>
<tr>
<td>整好</td>
<td>jiaodao hao</td>
<td>‘educate good’</td>
<td>(educate to a desirable result)</td>
</tr>
<tr>
<td>铺好</td>
<td>pu hao</td>
<td>‘lay.bed good’</td>
<td>(lay bed to a desirable result)</td>
</tr>
<tr>
<td>表现好</td>
<td>biaoxian hao</td>
<td>‘perform good’</td>
<td>(perform well)</td>
</tr>
<tr>
<td>打理好</td>
<td>dali hao</td>
<td>‘clean good’</td>
<td>(clean something to a desirable result)</td>
</tr>
<tr>
<td>实行好</td>
<td>shixing hao</td>
<td>‘carry.out good’</td>
<td>(carry something out to a desirable result)</td>
</tr>
</tbody>
</table>

**The main verbs (V1)**

With the complement verb in a RVCS indicating the resulting state of an action, the V1 slot is usually filled by a verb and sometimes by an adjective. Table 6-6 lists the V1s that are used more than once in the corpus. The number indicates the unique RVCSs. It shows that the NSs
have the most diversity and the highest frequency. The learners gradually improve their diversity of V1 verbs. In comparison with the NSs, the verbs used by the learners are mostly general verbs, such as *da* ‘hit’, *nong* ‘make’, *na* ‘carry’, *zuo* ‘do’, and *xue* ‘study’. The NSs, in contrast, used specific verbs, such as *ran* ‘dye’, *ba* ‘pull’, *ci* ‘stab’, *zan* ‘dip’, *zhen* ‘vibrate’, etc.

<table>
<thead>
<tr>
<th>LILs</th>
<th>HILs</th>
<th>ALS</th>
<th>NSs</th>
<th>V2</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>打 <em>da</em> ‘hit’</td>
<td>打 <em>da</em> ‘hit’</td>
<td>2</td>
<td>打 <em>da</em> ‘hit’</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>累 <em>lei</em> ‘tired’</td>
<td>摔 <em>shuai</em> ‘fall’</td>
<td>2</td>
<td>改 <em>gai</em> ‘correct’</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>弄 <em>nong</em> ‘make’</td>
<td>摔 <em>diao</em> ‘fall’</td>
<td>2</td>
<td>加 <em>jia</em> ‘add’</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>听 <em>ting</em> ‘listen’</td>
<td>拿 <em>na</em> ‘carry’</td>
<td>2</td>
<td>看 <em>kan</em> ‘look’</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>叫 <em>xia</em> ‘frightened’</td>
<td>想 <em>xiang</em> ‘think’</td>
<td>2</td>
<td>减 <em>jian</em> ‘decrease’</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>故 <em>jiao</em> ‘teach’</td>
<td>科 <em>kai</em> ‘drive’</td>
<td>2</td>
<td>吹 <em>chui</em> ‘blow’</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>故 <em>nong</em> ‘make’</td>
<td>找 <em>na</em> ‘carry’</td>
<td>2</td>
<td>加 <em>jia</em> ‘add’</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>提 <em>ti</em> ‘life’</td>
<td>学 <em>xue</em> ‘study’</td>
<td>2</td>
<td>翻 <em>fan</em> ‘turn’</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>增 <em>zeng</em> ‘add’</td>
<td>长 <em>zhang</em> ‘grow’</td>
<td>2</td>
<td>赶 <em>gan</em> ‘drive’</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>做 <em>zuo</em> ‘do’</td>
<td>2</td>
<td>割 <em>ge</em> ‘cut’</td>
<td>2</td>
<td>划 <em>hua</em> ‘scratch’</td>
</tr>
<tr>
<td>11</td>
<td>落 <em>luo</em> ‘fall’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>搞 <em>nong</em> ‘make’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>摔 <em>shuai</em> ‘fall’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>睡 <em>shui</em> ‘sleep’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>望 <em>wang</em> ‘look’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>沾 <em>zhan</em> ‘dip’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>找 <em>zhao</em> ‘look’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>震 <em>zhen</em> ‘shake’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>走 <em>zou</em> ‘walk’</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
As discussed in the literature chapter, the two components of the RVCSs have distinctive semantic roles in conveying event structures. The action verb expresses the manner of an action; the complement verb expresses the resulting state of the action. Following Vendler’s (1967) categorization of verb types, Smith (1991, 1997) states that the types of verbs that fill the V1 slot in RVCSs can be activity, achievement, accomplishment, and stative. Here I categorized the V1 into 5 types: activities, achievements, accomplishments, statives and adjectives.

Table 6-7: Distribution of V1 types

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accomplishment</td>
<td>1 (4%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Achievement</td>
<td>6 (22%)</td>
<td>21 (43%)</td>
<td>16 (25%)</td>
<td>45 (38%)</td>
</tr>
<tr>
<td>Activity</td>
<td>13 (48%)</td>
<td>21 (43%)</td>
<td>45 (69%)</td>
<td>70 (58%)</td>
</tr>
<tr>
<td>Stative</td>
<td>0</td>
<td>0</td>
<td>1 (2%)</td>
<td>0</td>
</tr>
<tr>
<td>Adjective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjective</td>
<td>7 (26%)</td>
<td>7 (14%)</td>
<td>3 (5%)</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>49</td>
<td>65</td>
<td>120</td>
</tr>
</tbody>
</table>

V1 types

Figure 6-5: Distribution of V1 types
Table 6-7 summarizes the distribution of V1 types and Figure 6-5 is a graphic representation. Both the NSs and learners primarily used ACT and ACH as V1s, with ACT being the most frequent. The distributions of ACT and ACH show different patterns of development. The frequency of ACT steadily improved from the intermediate to the advanced learners, while that of ACH reached its peak in the HILs and dropped in the ALs. The other types including ACC, STA and ADJ are scarcely used by the NSs and learners.

6.2.2 Syntactic complexity

Syntactically, a RVCS can occur alone or be followed by a noun phrase, adjective phrase, or a clause. RVCCs can also be used in the disposal construction, the BA sentence, and the passive structure, the BEI sentence, to indicate what happens to the entity referred to by the BA/BEI noun phrase. (Li and Thompson, 1981) Thus, there are six syntactic patterns that a RVCS can take: RVCSs, RVCSs with noun phrases (both object NPs and place NPs), RVCSs with adjective phrases, RVCSs with clauses, RVCSs in the BA construction, and RVCSs in the BEI construction.

Table 6-8 shows the distribution of RVCS structures by token frequencies, and Figure 6-6 represents this information graphically. The NSs’ distribution of different syntactic patterns shows that the most prominent structure of RVCSs is RVCSs followed by postverbal object NPs, which accounts for more than half of all occurrences. The second most frequent pattern produced by the NSs is RVCSs used alone, accounting for 22% of all instances. Other syntactic patterns are less representative in the NSs’ data, each of which constitutes less than 10% of all instances. In a word, the NSs’ distribution of RVCS structures seems to indicate that the most representative syntactic pattern is RVCSs followed by postverbal object NPs.
Table 6-8: Distribution of RVCS structures (token measure)

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVCSs</td>
<td>28 (44%)</td>
<td>56 (56%)</td>
<td>56 (39%)</td>
<td>43 (22%)</td>
</tr>
<tr>
<td>RVCSs with Object NP</td>
<td>7 (11%)</td>
<td>11 (11%)</td>
<td>71 (50%)</td>
<td>117 (59%)</td>
</tr>
<tr>
<td>RVCSs with Place NP</td>
<td>0 (0%)</td>
<td>1 (1%)</td>
<td>0 (0%)</td>
<td>8 (4%)</td>
</tr>
<tr>
<td>RVCSs with Clauses</td>
<td>4 (6%)</td>
<td>1 (1%)</td>
<td>4 (3%)</td>
<td>14 (7%)</td>
</tr>
<tr>
<td>RVCSs in BA construction</td>
<td>24 (38%)</td>
<td>17 (17%)</td>
<td>6 (4%)</td>
<td>8 (4%)</td>
</tr>
<tr>
<td>RVCSs in BEI construction</td>
<td>0 (0%)</td>
<td>14 (14%)</td>
<td>5 (4%)</td>
<td>9 (5%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>63</td>
<td>100</td>
<td>142</td>
<td>199</td>
</tr>
</tbody>
</table>

Figure 6-6: Syntactic patterns of RVCSs (token measure)

The distribution of the syntactic patterns in the learners’ data shows quite a different picture. The LILs produced a much higher percentage of RVCSs used alone, which accounts for 44% of all instances. RVCSs followed by postverbal object NPs, the most representative pattern in the NSs’ data, are far less represented in the LILs’ data (11%). The LILs produced a surprisingly high frequency of RVCSs in the BA construction, which accounts for 38% of the LILs’ data. Therefore, the representative patterns for the LILs seem to be RVCSs used alone and RVCSs in the BA sentence.
A closer look at the instances of RVCSs produced by the LILs shows that a good portion of syntactic patterns containing a RVCS are similar from learners to learners, many of which closely mirrored the textbook input they are exposed to. The high percentage of RVCSs in the BA sentence can be explained by the fact that the LILs were given formal instruction on the pattern at the beginning of data collection, and several places in the textbook explicitly called for the combined use of the syntactic pattern. For instance, in (1a) the learner used the RVCS compounds fang hao ‘put good’ and zhuang hao ‘install good’, which are from the textbook input shown in (1b). The learner also used the BA sentence twice connected by the sequential adverbs xian ‘first’ and zai ‘then’, which are also from the textbook input shown in (1c).

(1)

a 我先把我的书放好，再我再把我的电脑装好。
Wo xian ba wode shu fang hao, zai wo ba wode diannao zhuang hao.
I first BA my book put good, then I BA my computer install good
‘I first put my books in place, and then installed my computer.’

b 我负责把行李搬下来，放好，我也会把电脑装好。(from the Language in Use in Chinese Link Level 2 Part 1, p. 7)
Wo fuze ba xingli ban xia lai, fang hao, wo ye hui ba diannao zhuang hao.
I be.responsible BA luggage move descend hither, put good, I also will BA computer install good
‘I am responsible for moving the luggage downstairs, put them in place, and install the computer.’

c 我先把我的车开走，你再把车开过来。(from the Language in Use in Chinese Link Level 2 Part 1, p. 7)
Wo xian ba wode che kai zou, ni zai ba che kai guo lai.
I first BA my car drive walk, you then BA car drive cross hither
‘I will drive my car away first, and you then drive your car over.’

The distribution of syntactic patterns of the HILs is similar to that of the LILs. They produced a high percentage of RVCSs used alone. Their production of the RVCSs in the BA sentence is also higher than that of the NSs, although lower than that of the LILs. A noticeable difference between the HILs and the LILs is that the HILs produced quite a few instances of
RVCSs in the BEI sentence, accounting for 14% of all instances. The choice of RVCSs in the BEI sentence among the HILs and its absence among the LILs is due to the fact that the construction is not introduced to learners formally until the third year of instruction. The ALs showed a very similar pattern to the NSs. The most representative pattern for the ALs is RVCSs followed by postverbal object NPs (50%) followed by RVCSs used alone (39%). Similar to the NSs, the ALs produced very few instances of RVCSs in the BA or BEI sentences, suggesting that these are not representative structures of RVCSs.

6.2.3 Aspect

As stated in Smith (1991; 1997) and Xiao & McEnery (2004), RVCSs are an important means to indicate completive aspect in Chinese. Other frequently used, and widely documented, aspect markers in Chinese include the perfective marker le and the experiential marker guo. Le spans the initial and final endpoints of an event, while guo extends beyond the final endpoint of a situation. (Smith, 1991; 1997) Here I analyze the interaction between RVCSs and the two aspect markers at the sentential level to determine how the RVCSs independently or collaboratively contribute to aspect marking. I also distinguish the target-like and non-target-like instances in the learners’ data to determine the extent to which learners approached the NS patterns of use. Table 6-9 presents the distribution of the sentential aspect; Figure 6-7 is a graphic representation of the same data.
Table 6-9: Distribution of the sentential aspect (token measure)

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
<th>NSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVCSs without <em>le</em></td>
<td>34 (54%)</td>
<td>31 (31%)</td>
<td>109 (77%)</td>
<td>127 (64%)</td>
</tr>
<tr>
<td>Targetlike</td>
<td>31 (49%)</td>
<td>22 (22%)</td>
<td>106 (75%)</td>
<td></td>
</tr>
<tr>
<td>Non-targetlike</td>
<td>3 (5%)</td>
<td>9 (9%)</td>
<td>3 (2%)</td>
<td></td>
</tr>
<tr>
<td>RVCSs with <em>le</em></td>
<td>29 (46%)</td>
<td>69 (69%)</td>
<td>33 (23%)</td>
<td>72 (36%)</td>
</tr>
<tr>
<td>Targetlike</td>
<td>27 (43%)</td>
<td>67 (67%)</td>
<td>30 (21%)</td>
<td></td>
</tr>
<tr>
<td>Non-targetlike</td>
<td>2 (3%)</td>
<td>2 (2%)</td>
<td>3 (2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63</strong></td>
<td><strong>100</strong></td>
<td><strong>142</strong></td>
<td><strong>199</strong></td>
</tr>
</tbody>
</table>

Figure 6-7: Distribution of the sentential aspect

The NSs’ data shows that RVCSs more often occur alone without the perfective aspect marker *le*. In comparison, RVCSs co-occurring with *le* constitutes 36% of the data. The intermediate learners are found to have produced fewer instances of RVCSs without *le* (the LILs 54% and the HILs 31%) and more instances of RVCSs with *le* (the LILs 46% and the HILs 69%). The ALs showed a similar pattern to the NSs in the distribution of the grammatical means of sentential aspect. No instance of RVCSs co-occurring with the experiential aspect marker *guo* is observed in either the learners’ or the NSs’ data.
Unlike the RVCCs, there are not many instances of non-target-like forms for both categories. The non-target-like use of RVCSs is marked by the lack of *le* in obligatory occasions. Below are some examples from the learners’ data. In (2a), the sentence final particle *le* is missing, making the sentence incomplete. A primary function of the sentence final particle *le* is to indicate a currently relevant state. (Li and Thompson, 1981) In (2a), the sentence final particle *le* is required to indicate that ‘I am now in a state of being busy’. In (2b), the postverbal *le* is missing. It is obligatory in this particular context because it contributes to the completive meaning of the event of ‘having learned to be independent’. Construction (2c) and (2d) are instances in which *le* is used but not required in the context. In (2c), the *le* after the RVCS compound *bian huai* ‘change bad’ (become bad) is not acceptable because the sentence used a model verb *you keneng* ‘be likely’, making the event a prediction rather than a reality. A sentence in this modality is not compatible with either the postverbal or the sentence final *le*. In (2d), the *le* after the RVCS compound *gua duan* ‘hang broken’ (hang up) is inappropriate because the RVCS compound is modified by the temporal adverbial *yizhi* ‘always’, which is not compatible in time reference with the perfective aspect marker *le*.

(2)

RVCSs without *le*

a  *现在我在写信可是我忙死!*  
   Xianzai wo zai xie xin keshi wo mang si!  
   ‘Now I am writing a letter, but I am extremely busy.’

b  *我跟西方人长时间生活在一起,而且我也把我姐夫的独立论学会.*  
   Wo gen xifang ren chang shijian shenghuo zai yiqi, erqie wo ye ba wo jiefu de dulilun xue hui.  
   ‘I lived together with westerners for a long time, and I learned to be independent from my brother-in-law.’

RVCSs with *le*
c *如果父母本身的行為已經是很差，那他們的孩子也很有可能變壞了。
Ruguo fumu benshen de xingwei yijing shi hen cha, na tamen de haizi ye hen you keneng bian huai le.
If parent themselves DE behavior already be very bad, then they DE child also very be possibility change bad SFP
‘If their parents’ behavior is very bad, then their children are very likely to become bad too.’

d *我好幾天要給小美打電話，可是她一直掛斷了，讓我很擔心。
Wo hao ji tian yao gei Xiaomei da dianhua, keshi ta yizhi gua duan le, rang wo hen danxin.
I good CL day intend to Xiaomei hit telephone, but she always hang broken SFP, let I very worried
‘For a good several days I tried to call Xiaomei, but she didn’t answer, which worried me.’

6.3 Deviations of RVCSs

To probe into the sources of difficulty in acquiring DVCs, I present the findings from an error analysis in this section. The inappropriate use of RVCSs is grouped into four categories: omission, misuse, overuse, and others. Omission is further examined in terms of V1 and V2 omission. Misuse is categorized as the inappropriate use of V1, V2, or the entire compound. In terms of overuse, no instance of V1 overuse was identified, and hence only instances of V2 overuse are included. The ‘other’ category includes deviations in the potential form and ordering. Table 6-10 summarizes the distribution of errors in the corpus. The LILs produced the least errors. The HILs produced the most errors and the ALs produced more errors than the LILs. The two prominent error types are misuse and omission, both of which are also found to increase as learners’ overall language proficiency improves.
Table 6-10: Inappropriate use of RVCSs

<table>
<thead>
<tr>
<th></th>
<th>LILs</th>
<th>HILs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Omission</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1 omission</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>V2 omission</td>
<td>0</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td><strong>Overuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V2 redundant</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>Misuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1 misuse</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>V2 misuse</td>
<td>4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Compound misuse</td>
<td>2</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential form</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>related</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Order related</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td><strong>Accuracy rate</strong></td>
<td>85%</td>
<td>74%</td>
<td>78%</td>
</tr>
</tbody>
</table>

**Accuracy rates of different types of RVCs**

Figure 6-8: Accuracy rates of different types of RVCs

Figure 6-8 compares the accuracy rates of the three types of RVCs. RVCs of different types show different patterns of development. The DVCs showed a clear tendency of decrease in the number of deviations with improvement in language proficiency. The RVCCs reached a peak in the HILs but sharply decreased in the ALs. The RVCSs are found to start with a relatively low error rate in the LILs and increased considerably in the HILs. Although the error rate dropped
slightly in the ALs, it still presented a much higher rate in comparison with the DVCs and RVCCs.
The profile of deviations in RVCSs shows that it is a more sustainable type of pattern that incurs
more errors than the DVCs or RVCCs. As language proficiency improves, the chance of making
mistakes in using RVCSs does not decrease. It remains unclear, if, and at which acquisition stage,
learners overcome these difficulties. It might be due to the characteristics of RVCSs, especially
with regard to its flexibility and productivity in selecting V1s and V2s, and the challenges these
pose for learners in producing a variety of appropriate verb and complement collocations. It
seems that although RVCS is the least frequent pattern in the learners’ and NSs’ production, it is
found to incur the most frequent deviations in learners’ language production, thus calling for
pedagogical attention even among experienced learners.

In what follows, I will focus on the two error types that feature prominently in the
acquisition process: misuse and omission, and explore the nature of these deviations and the
source of difficulty in acquisition.

6.3.1 Misuse

The misuse of RVCSs is worth investigating because, unlike the other types of errors, this
type of errors persisted and increased from the less experienced to the more experienced learners.
The misuse of the V2, the V1, and the compound are found to increase steadily across the learner
groups.

V1 misuse

Altogether 13 instances of V2 misuse are identified in the learners’ data, among which
the HILs and ALs committed 6 deviations respectively. V2 misuse is found to be due to a general
verb being used as a specific verb. Below are some examples. In (3a), the appropriate verb should be *cha* ‘wipe’ because it appropriately describes the activity of wiping the pear. *Nong* ‘make’ is a general verb which is not appropriate in indicating the specific action in the context. In (3b), the general verb *na* ‘take’ is used together with the result-state complement verb *diao* ‘fall’ to describe the action of taking out one’s tonsil. However the appropriate verb should be a specific verb *zhai* ‘pick’. Item (3c) is a different case, in which the verb *zuo* ‘do’ cannot collocate with the NP *ziji de zhongren* ‘one’s responsibility’. The appropriate verb to collocate with the noun ‘responsibility’ is *chengdan* ‘undertake’. Therefore the appropriate RVCS in the sentence is *chengdan hao* ‘undertake good’.

(3)

*a* *他用手巾弄干净这个梨子。
Ta yong shoujin nong ganjing zhe ge lizi.
He use handkerchief make clean this CL pear
‘He cleaned the pear using a handkerchief.’

*b* *医生说我应该动手术把我的扁桃腺拿掉。
Yisheng shuo wo yinggai dong shoushu ba wode biant aoxian na diao.
Doctor say I should move operation BA my tonsil take fall
‘My doctor said that I should have an operation to take off my tonsil.’

c *父母們若能夠做好自己的重任，相信孩子們在日後發展上一定能夠有驚人的成績。
Fumu men ruo nenggou zuo hao ziji de zhong ren, xiangxin haizi men zai rihou fazhan shang yiding neng you jingren de chengji.
Parent PL if can do well themselves DE heavy responsibility, believe children PL at later development on definitely can have surprising DE score
‘If parents can fulfill their responsibility well, children will surely make high achievements in their future.’

**V2 misuse**

Altogether there are 17 instances of V2 misuse. These relate either to the verbs or adjectives in the V2 position that are similar phonetically or orthographically but convey slightly different connotations in RVCS compounds, or to the learners’ choice of verb or adjective that
denotes something other than the resulting state of the action, such as manner or completion. For instance, in (4a), *jiao dui* ‘teach right’ by itself is a legitimate compound that indicates the approach one takes in parenting. However, in the given context, emphasis is on the result of parenting, which should be on the scale of being *hao* ‘good’ or *huai* ‘bad’. Therefore the appropriate compound should be *jiao hao* ‘teach good’, which implies if parents teach their children to a desirable result, their children will not go astray. In (4b), the complement verb *qu* ‘take’ is not appropriate because the verb *na* ‘take’ already denotes the action. What is needed here is the resulting state of the action. Therefore the correct complement verb is *zou* ‘walk’, which indicates that the result of the action *na* ‘take’.

(4)

a *如果父母把孩子教对了，孩子才不会走错条路。*
   Ruguo fumu ba haizi *jiao dui* le, haizi cai bu hui zou cuo tiao lu.
   If parent BA children *teach right* SFP, children then no will walk wrong CL road
   ‘If parents *teach* them *right*, their children will not go astray.’

b *他已經發現了一筐梨子被拿取了。*
   Ta yijing faxian le yi kuang lizi bei *na qu* le.
   He already find PERF one CL pear BEI *take fetch* SFP.
   ‘He already found that a basket of pears was *taken away*.’

**Compound misuse**

The misuse of compounds results from inappropriate collocations between the RVCS and the agent, patient or experiencer. In (5a), the RVCS phrase *shuai dao* ‘fall collapse’ can only describe animated entities such as persons or animals. The learner used *shuai dao* to describe what happened to the pears, which is unanimated and thus cannot be described as *shuai dao*. In (5b), the RVCS compound *na zhou* ‘take walk’ modifies *ziyou* ‘freedom’. However *na zhou* ‘talk walk’ can only modify concrete objects. Freedom is an abstract cultural concept; it has to be modified by a specific verb phrase *bo duo* ‘deprive’. In (5c), the RVCS phrase *zhang da* ‘grow
big’ appeared in the time phrase ‘while I grew up’. Here the learner meant the process of growing up. However, the RVCS phrase *zhang da* ‘grow big’ denotes the activity of growing and the resulting state of ‘being big’. Its English equivalent is ‘to grow up’. The appropriate form in the context is *chengzhang* ‘grow’, which denotes a durative process of growing.

(5)

a *都的梨子摔倒而散了。
Dou de lizi *shuai dao* er san le.
All DE pear *fall collapse* and-so scatter SFP
‘All the pears fell off and scattered on the ground.’

b *抽烟的人会感得这重规定象是把他们的自由拿走了。
Chouyan de ren hui gan de zhe zhong guiding xiang shi ba tamende ziyou *na zou* le.
Smoke DE person will feel get this CL regulation seem be BA their freedom *take walk* SFP
‘People who smoke will feel that such regulations seem to *take* their freedom *away.*’

c *在我长大德时间宗教也很重要。
Zai wo *zhang da* de shijian zongjiao ye hen zhongyao.
At I *grow big* DE time religion also very important
‘While I *grew up*, religion is also very important.’

6.3.2 Omission

V2 omission

The instances of V2 omission seem to be largely due to L1 transfer because the English equivalents tend to aggregate the activity verb and the result-state verb in Chinese. For instance, in (6a), the English translation of *xia* is ‘frighten’, which refers both to the activity and the result of the activity. However, the Chinese verb *xia* alone cannot express both meanings. A complement verb or adjective is required. The appropriate form here is *xia huai* ‘frighten bad’, in which the verb *xia* denotes the action and the adjective *huai* ‘bad’ denotes the resulting state of the action. Similarly in (6b) the learner produced the verb *xue*, which is at best the English
equivalent of ‘study’. It does not imply the result of studying. To denote the result of the activity ‘study’, a complement verb hui ‘know’ is needed. Therefore the appropriate form in (6b) should be xue hui ‘study know’.

(6)

a  *然後貓頭鷹嚇了男孩子, 讓他跌從樹到土。
   Ranhou maotouying xia le nahaizi, rang ta die cong shu dao tu.
   ‘Then the owl frightened the boy, which made him fall from the tree to the floor.’

b  *所以看著父母親用嘴巴溝通就也xue話。
   Suoyi kan zhe fumuqin yong zuiba goutong jiu ye xue shuohua.
   ‘So see Dur parents use mouth communicate then also study speak’

V1 omission

There are six instances of V1 omission, which mostly occurred with intermediate learners. There is only one instance by advanced learners. The lack of V1 is either due to a yet undeveloped knowledge of the verb and complement compound, which separately refer to the activity and the resulting state, or to a lack of appropriate lexical knowledge about what is needed in the context. In (7a), the learner used the adjective po ‘broken’ to describe the activity and the resulting state of hitting on a mirror and breaking it. The learner omitted the verb da ‘hit’, thus leaving the activity incomplete. Similarly in (7b) the activity verb is missing as well. The learner only produced the resulting verb chu ‘eliminate’ without a verb indicating the activity.

(7)

a  *我小心可是我po過鏡子。
   Wo xiaoxin keshi wo po guo jingzi.
   ‘I was careful but I broke a mirror.’
6.4 Summary

In this chapter I analyzed the acquisition of RVCSs by CFL learners of the intermediate and advanced proficiency levels. The distribution of RVCSs shows a clear positive relationship between the token number of RVCSs and learners’ overall language proficiency. Still, compared with the NSs the learners produced much fewer RVCS tokens and distinct RVCSs. In comparison with the other types of RVCs (DVCs and RVCCs), RVCSs are the least frequently used by both the NSs and learners. The numbers of unique RVCSs are found to be similar to those of the RVCCs. The analysis of learners’ lexical choices of RVCSs shows that the varieties of V1s and V2s steadily improved as their language proficiency improved. The V2s are found to be more diverse than the V1s. For the V2s, unlike the NSs, who produced predominantly neutral adjectives, the learners mostly produced adjectives with either positive or negative entailments. For the V1s, the advanced learners used more specific verbs, whereas the less experienced learners used mostly general verbs. Among the different types, the learners showed similar patterns of distribution to the NSs. They both chose activity or achievement verbs as main verbs. The distribution of syntactic patterns reveals that learners’ choices differ from the NSs. The representative structure for the NSs is RVCSs followed by postverbal object NPs. In contrast, the intermediate learners produced more RVCSs used alone or RVCSs in the BA/BEI construction. The ALs showed a similar pattern of distribution to the NSs in their choice of syntactic patterns. The interaction between RVCSs and other aspect particles shows that the intermediate learners tended to use RVCSs together with the perfective aspect particle le. The ALs are found to be
more like the NSs in their choice of sentential aspect. All learner groups produced very few non-target-like forms.

Different from both DVCs and RVCCs, the error rates of RVCSs were low in the LILs, peaked in the HILs, and continued to be quite high in the ALs. In other words, the accuracy rate of the RVCSs achieved its highest in the LILs, drastically dropped in the HILs, and only improved mildly in the ALs. Combined with the frequencies of RVCSs, this suggests that the LILs produced RVCSs mainly based on the input, and their use of RVCSs showed very compositionality. The HILs began to use RVCSs more freely and experimented with creatively combining the V1 and V2, in which process made a sizeable number of creative but inappropriate combinations. Despite their much improved language proficiency, the ALs still struggled with producing appropriate RVCS compounds. The two frequently occurring deviations were misuse and omission. The misuse is mainly due to inappropriate lexical choices learners made for the V1, V2, or a mismatch between the RVCSs compound and the immediate context. The omission of the V2 seems to be largely due to L1 transfer because the English equivalents tend to aggregate the activity verb and the result-state verb. The omission of the V1 seems to be more idiosyncratic. Therefore, such errors can be summarized as a limited knowledge of L2 lexical and collocational knowledge.

All in all, the analysis shows that although RVCSs were less frequently used than the DVCs and RVCCs, the lexical complexity of RVCSs in both components posed a challenge for the learners, which is clearly revealed by the rather high errors rate among the HILs and ALs. Pedagogically, it is suggested to take a lexical approach, which focuses on the distinguishing of synonymous compound or compounds sharing the same V1 or V2. Additional pedagogical suggestions will be discussed in the Conclusions chapter.
Chapter 7

Conclusions

7.1 Summary of findings

The Chinese RVCs are an important yet challenging verb compound structure for English-speaking CFL learners. Although some research has been conducted on the acquisition order of directional complements and the event structure of RVCs, up to now no research has systematically investigated CFL learners’ lexical, syntactic and semantic choices of RVCs. Using written essays from a CFL learner corpus, this dissertation describes, analyzes and explains how CFL learners at the lower-intermediate, higher-intermediate and advanced levels acquire the Chinese RVCs. Specifically, it looks at the learners’ lexical, syntactic and semantic choices of the different types of RVCs, and identifies their sources of difficulty in acquiring the different types of RVCs.

It is found that the frequency of RVCs grew steadily as the learners’ overall language proficiency improved. Among the different types of RVCs, the token measure and the number of unique RVCs show that DVCs and RVCCs have markedly higher frequencies than the RVCSs. Compared with the NSs, all learner groups used considerably fewer numbers of RVCs in almost all three types, the only exception being that the ALs produced more RVCC tokens than the NSs. In a word, underuse of DVCs and RVCCs were observed among the learners, and a slight overuse of RVCCs was observed in the advanced learners. The underuse of DVCs and RVCSs can be explained by the complexity of the target structures, especially their lexical diversity and compositional constraints. The overuse of RVCCs by the ALs might be due to a limited vocabulary and discourse knowledge of the Chinese written genre by this group of learners. In
other words, compared with the NSs, the ALs in this study tended to write in a less formal and more spoken genre of Chinese.

The acquisition of the different types of RVCs reveals very different developmental patterns in terms of lexical diversity, syntactic complexity, semantic expressiveness, and linguistic accuracy. Different sources of difficulty in acquiring the different types of RVCs are identified.

In the development of lexical diversity of the two components, the token frequency and number of unique DVCs are characterized by a fast development from the LILs to the HILs followed by a mild increase from the HILs to the ALs. In their choices of syntactic patterns and semantic categories, the ALs started to show similar patterns to the NSs. The accuracy rate of DVCs dropped to the lowest point in the HILs and considerably improved in the ALs. Among the several types of DVC related deviations, the typical errors included omission of complements in obligatory occasions, misordering of the verb, complement and objects, and misuse of a component. The first two types of errors greatly decreased in the ALs, whereas the misuse of a component seemed to be more persistent. The recurrent errors are found to have originated from the subtle differences in space conceptualization between L1 English and L2 Chinese, and consequently their different linguistic representations. The complexity of the target Chinese structures also contributes to the acquisition difficulty.

Both the token frequency and number of unique RVCCs increased steadily from the intermediate learners to the advanced learners. Unexpectedly, the ALs produced more RVCCs than the NSs, suggesting that RVCCs might not be a frequent structure in Chinese formal writing and the learners tended to write in a spoken genre. The lexical diversity has improved steadily from the less experienced to the more experienced learners, but still shows a clear gap from the NSs’ performance. The learners’ syntactic and semantic choices of RVCCs display similar patterns to the NSs, suggesting that the syntactic and semantic features of RVCCs are not difficult for adult L2 learners to acquire as opposed to the lexical features. Different complements were
found to be acquired at different paces and to different degrees. The complements with distinctive content meanings are acquired earlier than those grammaticalized ones. The accuracy rate consistently improved from the less experienced to the more experienced learners. The most typical errors included the omission and overuse of the V2, misuse, and errors related to the potential forms of RVCCs. The persistent ones are found to be mainly due to L1 English transfer and the fact that Chinese and English have different lexical means to denote aspectual meanings or results of actions.

RVCSs are the least frequent among the three in both token frequency and number of unique RVCSs. The frequencies of RVCSs have steadily increased from the intermediate to advanced learners. In terms of the lexical diversity, there is a clear gap in the number of different V1s and V2s between the learners and the NSs, the less experienced and the more experienced learners. The choices of the V2s by the learners and NSs differ greatly. In their choices of V2 adjectives, the less experienced learners tended to use adjectives with negative entailments, the more experience learners produced more adjectives with positive entailments, while the NSs used mostly adjectives with neutral entailments. The ALs started to show similar patterns of syntactic and semantic choices of RVCSs to the NSs, whereas the LILs and HILs differed from the NSs or the ALs. The accuracy rate of RVCSs showed an interesting pattern: it started out quite high in the LILs, dropped to the lowest in the HILs and only slightly increased in the ALs. The two typical error types are misuse and omission, most of which can be attributed to the learners’ limited knowledge of L2 lexicons and collocations.
7.2 Implications

7.2.1 Theoretical implications

Although the three types of RVCs have developed differently in the learners, some important commonalities emerged from the analysis. Firstly, it suggests that the syntactic and semantic features of RVCs can be mastered with confidence when the learners reach a fairly advanced proficiency level. This runs counter to what was suggested by previous researchers. For instance, Yang (2003a, 2003b, 2004) concluded that the syntactic complexity of DVCs is the major difficulty for CFL learners, intermediate and advanced alike. In contrast, the lexical diversity of the RVCs produced by the advanced learners remained to be rather low compared with that of the NSs’. The error analysis also shows that the more persistent errors are mainly due to the lexical dimension of the RVCs, such as the lack of morpheme knowledge, and confusion about synonyms and collocations between verbs, nouns and complements.

This provides clear evidence that in the acquisition of the Chinese RVCs, the mastery of the lexical dimension is not developed hand in hand with that of the syntactic or semantic dimensions. The findings of this dissertation seem to suggest that the acquisition of the lexical dimension is much more challenging and takes longer to acquire than the syntactic or the semantic dimension. The mastery of RVCs is not achieved if the lexical diversity is not fully developed. Therefore even for advanced learners who have developed good mastery of the syntactic patterns and a full range of meanings of RVCs, they are still a step away from achieving target-like patterns in producing RVC compounds composed of a wide range of verb and complement morphemes.

The findings about Chinese RVCs highlight an important typological difference between the acquisition of English and Chinese grammar. The acquisition of grammatical constructions in
English is mainly about morphological changes, and for a certain grammatical construction, learners only need to master a small number of syntactic variations. The mastery of a grammatical construction in English is defined as the capability of producing the appropriate inflectional or syntactic forms. The acquisition of grammatical constructions in Chinese, however, depicts a very different picture. As is shown in this dissertation, RVCs is a compound structure, but in the meantime it takes on important grammatical functions and denotes important event structures. The acquisition of such verb compounds is defined as the developing mastery of several equally important aspects: the syntactic aspect, semantic aspect, lexical aspect, and discourse aspect. More importantly, the development of these aspects may not be synchronic. The case of RVCs shows that the mastery of the syntactic patterns seems to be straightforward, whereas the mastery of the lexical diversity of the grammatical constructions seems to be much more complicated and take much longer time. Many important Chinese grammatical structures reside in the lexical means. Therefore, the lexical dimension of Chinese grammar is essential to the development of the L2 grammar. Especially at the advanced level, learners need to boost up their lexical knowledge in order to appropriately use the grammatical structures.

This study also points to an important but much overlooked fact, i.e. the differences between the Chinese written genre and spoken genre. The NSs produced less RVCCs and more RVCSs out of a genre consideration, whereas the learners used more RVCCs but less RVCSs which shows their limited knowledge in genre and stylistic knowledge. This finding echoes Li’s (2010) paper in which she pointed out a lack of knowledge and an urgent need for written genre instruction among the advanced learners.
7.2.2 Pedagogical suggestions

This dissertation has significant implications to the teaching of RVCs in particular and CFL in general. Current pedagogical approaches of presenting the lexical dimension of RVCs can at best be described as a laundry list, by which I mean the complements are given a one-sentence definition and a list of RVC compounds are provided in a hope that learners will memorize these compounds by their own means. (See Chapter 2 Section 2.6 for a detailed discussion on the pedagogical presentations of RVCs) This renders learners frustrated and helpless, because it is almost impossible for learners to autonomously reach a scientific understanding of the complements and establish association of these compounds, let alone to apply such knowledge to produce novel compounds that are appropriate and acceptable. More often than not, learners have to memorize these compounds as fixed expressions, and make up random collocations if required. Therefore, pedagogical approaches that present RVCs in a more scientific and systematic manner are greatly expected.

A relevant approach to the instruction of RVCs is lexeme instruction. Lexeme instruction is a relatively new approach to teaching Chinese vocabulary. (Guo, 2004, 2006; H. Zhang, 2007, 2008; Shi, 2008; J. Zhang, 2010, 2011) It has been more and more realized that compounding is a primary means and also a highly productive way of word formation in Chinese. Statistics has shown that compound words make up more than 70% of the vocabulary of Chinese (Institute of Language Teaching and Research, 1986; Chen et al., 2009) The basic unit of compound words is lexemes, a large number of which are used recurrently in constructing new compound words. According to Yin (1984) and Yuan & Huang (1998), a single Chinese lexeme on average appears in about 17 compound words. The productivity of the compounds is decided by the semantic transparency of the lexemes. (McBride-Chang et al., 2008) It has been suggested that the more semantically transparent the lexemes are, the easier it is for learners to acquire. (Tan, 2010)
Words sharing the same lexemes can be easily associated and formed into a semantic network. (1) lists some compounds ending with the same lexeme *dao* ‘arrive’. Studies have shown that learners who received instruction on word association based on shared lexemes have longer-term retention of the vocabulary, and once they are aware of the lexemes, they can make use of the knowledge of recurrent lexemes to build associations among words. (Crow and Quigley, 1985; Nation, 2001; Mo, 2004; Fu, 2005) When it comes to the instruction of RVCs, the two constituents of RVCs, i.e. the main verb and the complement verb, can be respectively treated as lexemes. Word associations of the constituents can be introduced to the students, so that they will gradually accumulate knowledge on these constituents and eventually create novel compounds using their knowledge of word association.

(1)

<table>
<thead>
<tr>
<th>到</th>
<th>dao</th>
<th>arrive</th>
<th>‘arrive’</th>
</tr>
</thead>
<tbody>
<tr>
<td>来到</td>
<td>lai dao</td>
<td>come arrive</td>
<td>‘come to (a place)’</td>
</tr>
<tr>
<td>看到</td>
<td>kan dao</td>
<td>look arrive</td>
<td>‘see’</td>
</tr>
<tr>
<td>想到</td>
<td>xiang dao</td>
<td>think arrive</td>
<td>‘think of; recall’</td>
</tr>
<tr>
<td>买到</td>
<td>mai dao</td>
<td>buy arrive</td>
<td>‘buy (successfully)’</td>
</tr>
<tr>
<td>提高到</td>
<td>tigao dao</td>
<td>increase arrive</td>
<td>‘increase to (a level)’</td>
</tr>
</tbody>
</table>

Another potentially useful concept that shed light on presenting the RVCs is the radical category of words proposed by cognitive semantics. Cognitive semantics believes that the meaning of words, especially highly frequent words, is motivated and dependent on people’s experience with the external world and their immediate surroundings. (Boers and Lindstromberg, 2006, 2008) The non-arbitrary nature of language holds significant implications to second language learning and instruction, because if the motivation of grammar and lexicon is exploited and presented to learners in a principled way, it has the potential of facilitating students’ understanding of the target language and easier access to acquisition. According to Lakoff and his colleagues (Lakoff, 1987; Brugman & Lakoff, 1988), words represent radial categories. A radial
category is a conceptual category in which the range of concepts is organized in relation to a central or prototypical concept. The distinct senses of a lexical concept is organized: the prototypical senses are ‘closer’ to the central prototype, while less prototypical senses (peripheral senses) are ‘further from’ the prototype. The less prototypical senses are derived from more prototypical senses by general cognitive mechanisms that facilitate meaning extension, such as figure-ground configuration, conceptual metaphor, metonymy, and image schema transformation. These mechanisms result in the systematic extension of lexical categories, and give rise to polysemy: a semantic network for a single lexical item that consists of multiple related senses. Therefore, a semantic network consists of a number of distinct senses that are peripheral and thus not strictly predictable from the prototype, but which are somehow motivated by the application of general cognitive mechanisms. (Lakoff, 1987; Brugman & Lakoff, 1988, Tyler & Evans, 2003).

Through investigating corpus data from the Lancaster Corpus of Mandarin Chinese (LCMC), I tentatively mapped out the semantic network of the compounds which take shang, kai, and dao as complements. (Zhang, manuscript) My analysis shows that the complements of RVCs are cognitively motivated and the different senses form a coherent semantic network. For instance, the semantic network of the complement shang can be represented as in Figure 7-1.

![Figure 7-1: The semantic network of V-shang](image-url)
The semantic network of V-shang consists of six distinct senses. Each sense is shown as a dark circle which represents a node in the network. The central sense occupies a central position, indicating its status as the prototypical sense. Directions of arrows represent possible paths of derivation. It can be seen that the prototypical (central) sense of V-shang construction is the ‘upward movement’ sense. The other five distinct senses are either directly or indirectly related to the prototypical sense, thus forming a radial category of V-shang construction. Unlike the sense of ‘contact’, ‘improvement’, and ‘more’, the sense of the ‘initiation of a state’ is more directly related to the ‘movement’ sense. (Ibid.)

It is believed that the conceptual mapping of the semantic network of the RVC complements will facilitate learners’ understanding of the semantic construction, and expand the word association of the morphemes, making it systematic, principled, and predictable. Therefore better presentations of RVCs are expected so that learners will be informed of the conceptual structure of the important complements and apply this understanding to produce novel RVC compounds.

Since different sources of difficulty have been identified in the acquisition of the three types of RVCs, it is suggested to approach each type with slightly different foci so as to facilitate learners’ understanding and mastery of each type. For DVCs, it is suggested that the conceptual structures of individual DCs be mapped out and presented systematically to the learners, which schematize their directional, extended, metaphorical and aspectual meanings. For RVCCs, because the English L1 was found to have a strong influence on learners’ choices of RVCCs, explicit English-Chinese comparison of the corresponding forms are encouraged so that learners are able to see the different lexical realizations of similar meanings. For RVCSs, a lexical approach is desired that helps learners more effectively expand their lexical knowledge and lexeme repertoire. For more advanced learners, fine distinctions should be made between
synonyms that share the same V1s or V2s. The choices of RVCs appropriate for the required genre (written or spoken) should also be an indispensible part of instruction.

7.2.3 Methodological implications

Methodologically, this dissertation is among the first efforts in North America that have adopted a learner corpus approach to the investigation of CFL acquisition. Based on the construction of such a learner corpora, there are a few suggestions that I would like to offer to the compilation of CFL learner corpus and analysis of CFL learner data. Firstly, Chinese language has two writing systems, simplified characters and traditional characters. The current postgraduate institutions in the U.S. usually teach both systems and it is up to students to choose which one they want to use. Therefore, the original copies of students’ essays were in different writing systems: some in simplified characters, some in traditional characters, and some a mixture of both. As researchers, one needs to make up their mind about which writing system to adopt in the computerization of the learner data. In this current project, we decided to strictly transcribe whatever students wrote. This, however, could be a potential problem in the automatic processing of the corpus. For instance, the Chinese Lexical Analysis System developed by the Institute of Computing Technology at the Chinese Academy of Sciences, the most widely used automatic POS (Part-of-speech) tagging software of Chinese, can only process simplified characters. It will require extra manual work or programming to develop a solution that can process both simplified and traditional characters. Secondly, like all learner corpus, the computerization of learner data is not an easy matter. (Barlow, 2005) It is a difficult task to develop a scheme that accurately record students’ errors, such as the lack of strokes in characters, the misuse of a character that are phonologically similar to a target character, or simply what counts as errors and what does not. Thirdly, because the annotation and error-tagging schemes of RVCs were specifically developed
for the purpose of analyzing the use of RVCs, the annotation and error tagging have involved considerable manual work. The accuracy and reliability of these manually applied tags is another concern. With all this being said, it is argued that learner corpus analysis is an extremely powerful and useful method of investigating CFL acquisition and implies promising applications in the studies of CFL acquisition, due to its unprecedented advantages in large scale collection of naturally occurring data and convenience in automatic processing and analysis. CFL learner corpora, especially those documenting both cross-sectional and developmental language data, will have promising applications in future research on CFL acquisition.

7.3 Limitations

Although I have tried to take into consideration the development of individual learners, this dissertation is essentially a cross-sectional study, and regrettably the developmental trajectory of individual learners was not investigated in depth. Recent SLA studies have suggested that the development of a second language is a complex and dynamic system, in which the individual learners develop at different paces and undergo different paths. (de Bot, 2008; de Bot, Verspoor, & Lowie, 2007; Ellis & Larsen-Freeman, 2006; Larsen-Freeman, 1997, 2006) Further research that focuses on the inter- and intra-learner variability is expected to delineate a more comprehensive picture of the acquisition of RVCs.

Another limitation of this study is that due to realistic reasons, it was impossible to collect written data from learners who can represent advanced proficiency at the institution where the intermediate learners’ data were collected. A comprise I made in this study is that I used the written essays from the HSK Advanced as the AL data. However, the HSK data are not strictly comparable to the intermediate data. The LIL and HIL data were developmental, and the majority of the tasks were uncontrolled writing tasks. The HSK data were not developmental, and all the
tasks were controlled writing tasks given in a high-stake proficiency test. These differences in nature of the tasks, writing topics, and format of writing will definitely have an effect on learners’ language performance. Ideally, the AL data should be collected among a group of very advanced learners in a comprehensive university in the U.S. which shares similar curricular as the one where the LIL and HIL data were collected.

Lastly, this dissertation exclusively relied upon learners’ written data. As a matter of fact, all RVCs studies that have been conducted so far have based on the written production of learners. Data collected from a spoken genre are greatly desired to compensate current findings and see how learners use RVCs in oral communication.

7.4 Future directions

The view of language as a dynamic, complex system and language development as a dynamic process is receiving increasing attention from second language acquisition (SLA) researchers (de Bot, 2008; de Bot, Verspoor, & Lowie, 2007; Ellis & Larsen-Freeman, 2006; Larsen-Freeman, 1997, 2006). Research from this perspective has found that individual learners’ language development takes different routes and there is considerable inter-individual and intra-individual variability. Recent studies have shown that rather than being linear and stage-like, second language development is in many ways characterized by fluctuation, variation, and even regression (e.g., Larsen-Freeman, 2006; Larsen-Freeman & Cameron, 2008; Verspoor, Lowie, & van Dijk, 2008). To further our understanding about the acquisition of the Chinese RVCs, future research needs to be conducted to not only look at the group averages and general trends, but also explore the inter-level, inter-individual and intra-individual differences in the developing mastery of RVCs. How individual learners develop their mastery of the lexical, syntactic and semantic
features of the different types of RVCs will provide us with a more dynamic understanding about RVCs and CFL learners’ language development in general.

Pedagogically, as is discussed previously, RVCs sharing the same complement can be arranged into a semantic network based on the meaning association of these compounds. If such conceptual structures of the compounds are presented and taught explicitly to learners from the outset, the underlying semantic network of these compounds will be made accessible to learners in developing a systematic understanding of the lexemes or compounds. Therefore, novel pedagogical approaches of teaching RVCs are highly desired that incorporate lexeme instruction, cognitive semantics and insights from current theories on second language acquisition and pedagogical grammar.
Appendix A

Sample essay from the lower-intermediate learners

这个暑假是我最难忘的旅行。我去了香港和中国。我跟九个朋友从纽约的 JFK 机场坐飞机到香港。香港的天气非常热，每天都会超过一百度。可是，我都很喜欢香港。我有很多亲戚和朋友都在这儿。我们在香港住在我们的朋友的家。他的房子很不错，很大，可以住十个人。我们住了香港三个天。每天会吃饭，走路，和买东西。每个人都觉得好玩。

然后，我们去了南京。在南京，我们住在一个旅馆。我们在南京每天去一个学校教英文。我们教的同学是小孩子，他们很可爱。同学每天越来越精神。他们喜欢我们因为我们从美国来。很多我们教的同学没有很多钱。周末，我们去其他地方，比如上海，杭州，和扬州。我很喜欢去上海。这个城市有很多大楼，很好看。我们在上海吃了小笼包，太好吃了！中国真是一个经验的旅行。

三个星期以后，我的朋友全部都回去美国。我就回去香港做暑假工，我作了七个星期。我在一个卖股票的公司作。周末，我就跟我的朋友玩。
Appendix B

Sample essay from the higher-intermediate learners

在中国，我的经历笼统很好。可是有时候有一些很坏的经历因为我不体会了过中国的文化。一个很不好的经历有关累跟中国的火车制度。经过我最后的几天在中国。我在英山要回了上海，所以我看了火车班期。火车应该到了上海明天九点羊。虽然汽车应该比较快，就汽车到地铁开始以前，听以我选择坐火车。我没有那么多钱，所以我买了硬座票，一很不聪颖选择。在火车上，事情开始了很好—我认识很多热心的人。可是，时间越来越晚了，我开始累一点。我预期他们十一点关上灯，可是十一点过了，灯还关子。我试对睡觉，可是我被灯恼火了。愈加，我同路客继续说话。事情继续一样到一点。一点的时候我才知道在硬座包间，灯不被关了。所以那个火车乘我都睡不着。刚好我带了好多书，听以我可以读书，可是下天早上我到了上海很累。愈加，我们的火车延误点了两个小时，听以我看朋友的以前我连没有时间睡午觉。听以，我最后学到：小心跟中国的火车！
Appendix C

Sample essay from the advanced learners

吸烟对个人健康和公众利益的影响

在当今的社会不论贫富都有很多人喜欢吸烟。这种现象在亚洲更为严重。吸烟对人们身体健康上的危害是很大的。

吸烟者因吸烟可能导致的病是人人皆知的。吸烟者比非吸烟者更可能得一些呼吸道疾病，伤害到体内的器官，血液循环也可能发生问题。我自己原来也有一阵子喜欢吸烟。因为吸烟后确实能让我感到比较放松。可那时我明显的感觉到自己的胃口变差，脸色越来越黄。吸烟不仅改变了我的健康状况，也改变了我的形态。吸烟后身上还会留[B流]下很重的烟味，恶心极了！听说长期吸烟牙齿的健康也会受到影响，让人们的笑容不再是那么的灿烂。

吸烟者不仅是伤害了自己，也伤害了别人。一些人总是在公共场所边走边抽烟。他们呼出的二手烟污染了整个区域的空气。这样一来就造成了对公众利益的影响。伤害了自己同时伤害了别人，确实十分讨厌。

大家都开始对吸烟的危害有所认识。因此某市政府决定对在公共场合吸烟的人有所处罚。我认为这样做好极了！以免影响到别人并帮助青少年健康成长。

吸烟反映了社会的不良习惯。如果改掉这一点，我们的社会就又前进了一步。为了做到更完美，为了自己，也为了别人，请不要吸烟。它对人们的健康确产生的影响众所周知又为何要吸烟呢？
Appendix D

Sample essay from the Chinese native speakers

熟悉

生活如美人的脸，总是半遮半掩。没有人生来就对生活熟悉。我们在生活的小路上对事物总是由不熟悉继而变为熟悉。

人们常说，熟能生巧，我们就应该只掌握熟悉的，放弃一切新的事物而止步不前？答案是否定的，美好的生活应该是新鲜的，熟悉的事物只会让生活变得单调乏味。因此，让我们果断地放下熟悉的事，去挑战新的事物，去迎接新的自己。

以前的生活对于伊辛巴耶娃来说，可能再熟悉不过了。从小，这位俄罗斯女孩一心为了金牌，为了这梦想坚持不懈地去练体操，就在自己技艺很好的时候，一个残酷的现实等待着她接受——身高已不适合体操锻炼了。可她不放弃，从此改为撑杆跳运动员。时间一天天过去，原本对她很陌生的项目如今已是她的骄傲，一次又一次地刷新世界记录，让整个世界为之震撼！是她，是她放下熟悉的生活，挑战自己，终于取得成功。

又如美国现任总统奥巴马，在他之前，美国总统一向都是白色人种的领地，黑人总统别说没有，就是想也不敢想。这对于世人也许是再熟悉不过的事情了吧。可是，这位年轻的黑人小伙子偏偏不会就此罢休。凭借自己的努力，终于从著名大学——哥伦比亚大学获得学位，为将来竞选总统做了准备。生活总是爱喜欢挑战的人，他终于如愿，成为美国历史上目前唯一的一位黑人总统，为了打破这“熟悉”的社会现状，他终于成功了。

又如在早年时的孔子，一心从政，可是他却处处碰壁，终于没有成功。于是，孔子毅然地放弃从政的初衷，开始整理和收集古时名作佳篇，自己从中吸取知识。皇天不负有心人，因为孔子毅然放弃自己熟悉的从政之路，挑选了适合自己的文学大道。终于，孔子成为了一代宗师，成为了古今闻名的教育家、思想家，给中国乃至世界不小的影响。

没有人一生下来就对生活熟悉。渐渐地，我们所熟悉的事物越来越多。此时，不妨放下熟悉的事情，去挑战新的事物，让自己的人生不在熟悉而无味中度过，而描绘出自己不一样的多彩人生！
Appendix E

Informed Consent Form for Social Science Research
The Pennsylvania State University

Title of Project: Construct a written corpus of L2 English-speaking learners of Chinese

Principal Investigator: Jie Zhang, 305 Sparks Building, University Park, PA 16802, (814) 441-3774, juz125@psu.edu

Advisor: Prof. James P. Lantolf, 304 Sparks Building, University Park, PA, 16802 (814) 863-7035, jpl7@psu.edu

Other Investigator(s): Liana Chen, 326 Pond Building, University Park, PA 16802, (814) 867-326, luc12@psu.edu
Xiaofei Lu, 301 Sparks Building, University Park, 16802, (814) 865-4692, xxl13@psu.edu

1. Purpose of the Study: The purpose of this research is to construct a written corpus of L2 English-speaking learners of Chinese. The corpus will be a resource for researchers and teachers to conduct research on the acquisition of Chinese by L2 English-speaking learners.

2. Procedures to be followed: You will be asked to fill out a short questionnaire on your language background and also provide permission to the investigators to collect your written essays. We will collect your written essays from your assignments, tests, and make photocopies of your written essays. For some assignments that are submitted via ANGEL website, the electronic copies of these assignments will be collected.

3. Duration/Time: You will need to spend approximately 10 minutes to fill out the consent form and a questionnaire. Other than this, there is no added time required for the participation.

4. Statement of Confidentiality: Your participation in this research is confidential. At no time will any identifying information be used in any reporting of our findings. The photocopies of your written essays will be stored at the investigators' residence in a locked file cabinet. The electronic data will be stored on a password protected computer of the investigators. Only the principal investigator and the co-investigators will have access to the data.

5. Right to Ask Questions: Please contact Jie Zhang at (814) 441-3774 with questions. You can also call this number if you have concerns about this research.
6. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise. If you choose not to participate, your grade or relationship to your instructor will not be affected. However, non-participation does not excuse you from fulfilling the required course work. Since this is part of regular classroom instruction, everyone will receive the same instruction and assignments, regardless of whether you choose to participate in the research study or not.

**FERPA:**

The Family Educational Rights and Privacy Act (34 CFR 99) gives parents and/or eligible students (students over the age of 18) the right to consent to disclosure of personally identifiable information contained in student records. As an example, grades, assignments and test scores are considered part of the student record. These regulations require that signed consent be obtained and that the consent document states the purpose of the disclosure.

_________ I agree to allow my coursework and grades from the Chinese course to be released to the principal investigator and the research team of this study for the purpose of constructing a written corpus of L2 English-speaking learners of Chinese.

_________ I do not give permission to allow my coursework and grades from the Chinese course to be released to the principal investigator and the research team of this study for the purpose of constructing a written corpus of L2 English-speaking learners of Chinese.

You must be 18 years of age or older to consent to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this form for your records.

______________________________  ___________________ __
Participant Signature       Date

______________________________  ___________________ __
Person Obtaining Consent      Date
Appendix F

Participant Questionnaire

1. Name: __________________               2. Gender: M___ or F____
3. Age: __________________                 4. Academic Year: _________________
7. Semester: Fall/Spring/Summer ________
8. Course number: Chinese ______
9. Language experience:

(1) What is your first language?

(2) What other languages do you know?

(3) Including the current semester, how many semesters of Chinese have you studied at this university?

(4) Prior to taking Chinese at this university, have you ever taken a Chinese language class in any educational institution (high school, college, language school, etc)? If so, when, where, and for how long did you study Chinese?

(5) Have you lived in a Chinese speaking area or country (such as: a period of residence or school attendance, or study abroad)? If so, when, where and for how long?

(6) Do you have family members who regularly speak Mandarin Chinese with you? How is it used and how regularly is it used? If you speak a dialect of Mandarin, please indicate the dialect you speak.
BIBLIOGRAPHY


Someville, MA: Cascadilla Press.


Guo, S. (2004). The role of the morphemic meaning in foreign learners’ acquisition of the lexical meaning of Chinese compound words. Yuyan Jiaoxue yu Yanjiu (Language Teaching...


Benjamins.


Zhou, G. (1997). Hanzu ertong xide shubu jiegou zhuangkuang de kaocha (An inspection...


VITA

Jie Zhang

EDUCATION

2011  Ph.D. in Applied Linguistics, The Pennsylvania State University, University Park, USA
2004  M.A. in Applied Linguistics, Tsinghua University, Beijing, China
2001  B.A. in English, Shandong University, Jinan, China

TEACHING AND RESEARCH EXPERIENCE

Research Assistant in the Center for Advanced Language Proficiency, Education, and Research (CALPER), University Park, PA, 2007 – 2008
Instructor of ESL in the Department of Applied Linguistics at the Pennsylvania State University, Aug 2006 – Dec 2007

PRESENTATIONS


AWARDS AND FELLOWSHIPS

Research and Graduate Studies Office Dissertation Support Grant, The Pennsylvania State University, Fall 2010
Gil Watz Dissertation Fellowship, The Pennsylvania State University, Spring 2010
Gil Watz Outstanding Graduate Student in Applied Linguistics, The Pennsylvania State University, 2009