EXPRESSIONS OF DIFFERENT-TRAJECTORY CAUSED MOTION EVENTS IN CHINESE

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI‘I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

EAST ASIAN LANGUAGES AND LITERATURES (CHINESE)

MAY 2013

By

Jing Z. Paul

Dissertation Committee:

Tao-chung Yao, Chairperson
Hsin-I Hsieh
Song Jiang
Luca Onnis
Cynthia Ning
To my father
ACKNOWLEDGEMENTS

On the journey of completing this dissertation, I am truly not walking alone. I am grateful to all the assistance and support I received from my teachers, friends and family.

First of all, I am deeply indebted to my advisor, Professor Tao-chung Yao. He gave me tremendous support throughout the whole process of completing this dissertation. He read through my drafts at different stages and offered detailed and constructive suggestions from all possible aspects. His positive attitude and encouraging spirit kept me motivated during my most stressful period of writing. I am grateful that I have such a professional, caring and open-minded mentor. I am also truly grateful to Professor Hsin-I Hsieh, who led me to the fascinating world of Cognitive Semantics. It was in his graduate seminar “Chinese Syntax and Semantics” that I developed my keen interest in the epoch-making theory of cognitive semantics proposed by Professor Leonard Talmy. I am thankful to him for numerous interactions in class and outside the classroom, which deepened my interest in the interface and interaction between Chinese syntactic structure and Chinese semantic structure. My heart-felt thanks also go to Professor Song Jiang, whose sound guidance and critical feedback made a considerable contribution to this dissertation. I would also like to extend my sincere gratitude to Professor Luca Onnis. I learned a great deal about research design from him. His insightful comments helped improve the quality of this dissertation. I would also wish to express my gratitude to Professor Cynthia Ning. In particular, I would like to thank her for helping me develop a teaching project with videos, during which I discovered my interests in using motion
events in teaching. I would also like to thank my editor Carl Polley for his editing and helpful comments. All errors, of course, remain mine.

My heart-felt thanks also go to my classmates and friends. I would like to thank Chuan Lin, Xue Xia, Qiaona Yu, Hui-ju Chuang, Stephen Tschudi, Karl Neergaard and Annie McCrea for their assistance and encouragement at various stages of writing this dissertation. Especially, I would like to thank Chuan Lin for her emotional support. I would also like to show my gratitude to Xue Xia, Annie McCrea and Karl Neergaard for helping me retrieve advanced L2 Chinese learners. I am also grateful to Professor Xionghua Song and his graduate student Yinhua Du for assisting me in retrieving participants and administrating the study at the South-Central University of Nationalities in China.

And also, I would like to thank my family in China, who have always had faith in me and believed in me.

Last, but not least, I would like to thank my husband and my best friend, Edward Paul, for showing me that not all good things have to be hard to do. Without his patience, love and support, I would not be able to complete this dissertation in a timely manner. My thanks also go to my two beautiful daughters, Ivy and Apple. Thanks to Ivy for watching her baby sister during my writing, and thanks to Apple for being such an easygoing baby.
ABSTRACT

We perform motion events in all aspects of our daily life, from walking home to jumping into a pool, from throwing a frisbee to pushing a shopping cart. The fact that languages may encode such motion events in different fashions has raised intriguing questions regarding the typological classifications of natural languages in relation to expressions of motion events.

Talmy (1985) classifies all natural languages into two distinct categories: verb-framed or satellite-framed. The classification of Chinese under Talmy’s system, however, has provoked much controversy. Specifically, Chinese has been classified as satellite-framed (Talmy, 1985), simultaneously satellite-framed and verb-framed (Ji, Hendriks, & Hickman, 2011) or equipollently-framed (Slobin, 2004). Slobin (2004) claims that not all natural languages fit into Talmy’s (1985) bipartite classification; rather, serial verb languages such as Chinese are “equipollently-framed”, which means that both the Manner (e.g., walking, flying) and the Path (e.g., to, into) of the moving entity are encoded in equally significant verbs.

In the context of this debate, this dissertation compares expressions of different-trajectory motion events in Chinese to those of English, and, on the basis of this analysis, it investigates the influence of English on the learning of expressions of different-trajectory caused motion events in Chinese.

The findings reported in this dissertation show that, like English, Chinese is satellite-framed in describing different-trajectory motion events. Nonetheless, despite such similarity, English learners of Chinese display two major problems in describing
different-trajectory motion events. The first problem is that they do not encode the Path component in Chinese as frequently as native Chinese speakers do. The second problem is that they do not employ the disposal construction as frequently as native Chinese speakers do in their verbal descriptions. Previous studies have focused mainly on the acquisition of a typologically different second language. This dissertation shows that the differences between two typologically similar languages can also create substantial problems for second language learners.

It is hoped that this dissertation will not only yield insights into the typological classification of Chinese in encoding different-trajectory caused motion events, but will also shed light on the acquisition of typologically similar languages.
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS ................................................................................................. iii

ABSTRACT .................................................................................................................... v

LIST OF TABLES ........................................................................................................ xi

LIST OF FIGURES ....................................................................................................... xii

ABBREVIATIONS ...................................................................................................... xiv

CHAPTER 1. INTRODUCTION ...................................................................................... 1

1.1 Background ........................................................................................................... 1

1.2 Previous studies and their problems ................................................................. 3

1.3 Dissertation research objectives ...................................................................... 8

1.4 Organization of the dissertation ...................................................................... 11

CHAPTER 2. EXPRESSIONS OF MOTION EVENTS IN LANGUAGES .............. 13

2.1 Introduction ......................................................................................................... 13

2.2 Motion events .................................................................................................... 13

2.3 Inter-typological differences ............................................................................. 16

2.3.1 Verb-framed languages ............................................................................... 16

2.3.2 Satellite-framed languages ........................................................................ 18

2.4 Intra-typological differences ............................................................................ 20

2.5 Empirical studies ............................................................................................... 23

2.6 Typological classifications of Chinese ............................................................. 24

2.7 Main verb status in Chinese ............................................................................ 29

2.8 Summary .......................................................................................................... 37
CHAPTER 3. THE CHINESE DISPOSAL CONSTRUCTION .......................................... 38

3.1 Introduction ........................................................................................................ 38
3.2 Grammaticalization of the disposal construction .............................................. 38
3.3 The BA construction ......................................................................................... 42
3.4 The JIANG construction .................................................................................... 51
3.5 The Chinese BEI construction ......................................................................... 53
3.6 Disposal construction and expressions of DT caused motion events .......... 56
3.7 Summary ............................................................................................................. 60

CHAPTER 4. THINKING-FOR-SPEAKING AND THE ACQUISITION OF MOTION EVENTS ........................................................................................................... 61

4.1 Introduction ........................................................................................................ 61
4.2 Thinking-for-speaking ....................................................................................... 61
4.3 Acquisition of L2 motion events ....................................................................... 65
4.4 Thinking-for-speaking in two typologically similar languages ..................... 67
4.5 Summary ............................................................................................................. 69

CHAPTER 5. A STUDY ON DIFFERENT-TRAJECTORY CAUSED MOTION EVENTS ........................................................................................................... 70

5.1 Introduction ........................................................................................................ 70
5.2 Research questions ............................................................................................ 71
5.3 Stimuli ............................................................................................................... 71
5.4 Participants ........................................................................................................ 74
5.5 Procedure .......................................................................................................... 76
5.6 Coding ................................................................................................................. 77
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6.1</td>
<td>Coding of semantic constituents</td>
<td>79</td>
</tr>
<tr>
<td>5.6.2</td>
<td>Coding of syntactic constructions</td>
<td>82</td>
</tr>
<tr>
<td>5.7</td>
<td>Results</td>
<td>84</td>
</tr>
<tr>
<td>5.7.1</td>
<td>Overall distribution</td>
<td>84</td>
</tr>
<tr>
<td>5.7.2</td>
<td>Re-coding the data</td>
<td>88</td>
</tr>
<tr>
<td>5.7.3</td>
<td>Boundary-crossing and non-boundary-crossing</td>
<td>92</td>
</tr>
<tr>
<td>5.7.4</td>
<td>Boundary-crossing motion events: Across or Into</td>
<td>96</td>
</tr>
<tr>
<td>5.7.5</td>
<td>Re-coding non-boundary-crossing and boundary-crossing events</td>
<td>101</td>
</tr>
<tr>
<td>5.7.6</td>
<td>Re-coding Across events and Into events</td>
<td>104</td>
</tr>
<tr>
<td>5.7.7</td>
<td>Use of disposal constructions</td>
<td>107</td>
</tr>
<tr>
<td>5.7.8</td>
<td>Path and sentence structures</td>
<td>114</td>
</tr>
<tr>
<td>5.8</td>
<td>Summary</td>
<td>122</td>
</tr>
</tbody>
</table>

CHAPTER 6. DISCUSSION, CONCLUSION AND IMPLICATIONS | 124 |
| 6.1     | Introduction | 124 |
| 6.2     | Discussion and conclusion | 124 |
| 6.2.1   | Typological classification of Chinese | 124 |
| 6.2.2   | Thinking-for-speaking between English and Chinese | 127 |
| 6.3     | Pedagogical implications | 133 |
| 6.4     | Contributions of this dissertation | 138 |
| 6.5     | Limitations of this dissertation | 139 |
| 6.6     | Summary | 139 |

APPENDICES | 141 |
| Appendix A: Consent form for native English speakers | 141 |

ix
Appendix B: Consent form for native Chinese speakers ........................................ 143
Appendix C: Consent form for L2 Chinese learners ........................................ 145
Appendix D: Background questionnaire for native English speakers .................. 147
Appendix E: Background questionnaire for native Chinese speakers .................. 148
Appendix F: Background questionnaire for L2 Chinese learners ....................... 150
Appendix G: Native English speakers’ background information ....................... 151
Appendix H: Native Chinese speakers’ background information ....................... 152
Appendix I: Advanced L2 Chinese learners’ background information ............... 153
Appendix J: Descriptions of the test items in English .................................... 154
Appendix K: Descriptions of the test items in Chinese .................................. 155
Appendix L: Selected still images of a test item: Down .................................... 157
Appendix M: Selected still images of a test item: Across ............................... 158
Appendix N: Selected still images of a test item: Into .................................... 159
Appendix O: Native English speakers’ data: One sentence per participant .......... 160
Appendix P: Native Chinese speakers’ data: One sentence per participant .......... 170
Appendix Q: L2 Chinese learners’ data: One sentence per participant ............... 180
Appendix R: Use of action verbs in Chinese .................................................. 191

REFERENCES ........................................................................................................ 192
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Classification of V-framed and S-framed Languages</td>
<td>15</td>
</tr>
<tr>
<td>2.2</td>
<td>Talmy’s and Slobin’s Interpretations of Verb Relations</td>
<td>25</td>
</tr>
<tr>
<td>5.1</td>
<td>Manner Encoding Across Motion Events</td>
<td>106</td>
</tr>
<tr>
<td>6.1</td>
<td>Stages of Learning DT Caused Motion Events</td>
<td>135</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Syntactic mapping of the macro-event in verb-framed languages</td>
<td>16</td>
</tr>
<tr>
<td>2.2</td>
<td>Syntactic mapping of the macro-event in S-framed languages</td>
<td>19</td>
</tr>
<tr>
<td>5.1</td>
<td>Motion information expressed overall as a function of language</td>
<td>85</td>
</tr>
<tr>
<td>5.2</td>
<td>Semantic constituents for Path encoding</td>
<td>86</td>
</tr>
<tr>
<td>5.3</td>
<td>“Satellital” coding of Cause, Path and Manner for the three groups</td>
<td>89</td>
</tr>
<tr>
<td>5.4</td>
<td>“Verbal” coding of Cause, Path and Manner for the three Groups</td>
<td>90</td>
</tr>
<tr>
<td>5.5</td>
<td>Distribution of non-boundary-crossing events: Up and Down</td>
<td>92</td>
</tr>
<tr>
<td>5.6</td>
<td>Distribution of boundary-crossing events: Across and Into</td>
<td>95</td>
</tr>
<tr>
<td>5.7</td>
<td>Distribution of boundary-crossing events: Across</td>
<td>99</td>
</tr>
<tr>
<td>5.8</td>
<td>Distribution of boundary-crossing events: Into</td>
<td>100</td>
</tr>
<tr>
<td>5.9</td>
<td>“Satellital” coding of non-boundary-crossing events: Up and Down</td>
<td>101</td>
</tr>
<tr>
<td>5.10</td>
<td>“Verbal” coding of non-boundary-crossing events: Up and Down</td>
<td>102</td>
</tr>
<tr>
<td>5.11</td>
<td>“Satellital” coding of boundary-crossing events: Across and Into</td>
<td>103</td>
</tr>
<tr>
<td>5.12</td>
<td>“Verbal” coding of boundary-crossing events: Across and Into</td>
<td>103</td>
</tr>
<tr>
<td>5.13</td>
<td>“Satellital” coding of boundary-crossing events: Across</td>
<td>104</td>
</tr>
<tr>
<td>5.14</td>
<td>“Verbal” coding of boundary-crossing events: Across</td>
<td>104</td>
</tr>
<tr>
<td>5.15</td>
<td>“Satellital” coding of boundary-crossing events: Into</td>
<td>105</td>
</tr>
<tr>
<td>5.16</td>
<td>“Verbal” coding of boundary-crossing events: Into</td>
<td>105</td>
</tr>
<tr>
<td>5.17</td>
<td>Frequency of using disposal constructions: All</td>
<td>107</td>
</tr>
<tr>
<td>5.18</td>
<td>Frequency of using disposal constructions: Up and Down</td>
<td>109</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.19</td>
<td>Frequency of using disposal constructions: Across and Into</td>
<td>110</td>
</tr>
<tr>
<td>5.20</td>
<td>Frequency of using disposal constructions: Across</td>
<td>111</td>
</tr>
<tr>
<td>5.21</td>
<td>Frequency of using disposal constructions: Into</td>
<td>112</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>AD</td>
<td>Anno Domini</td>
<td></td>
</tr>
<tr>
<td>ASSOC</td>
<td>Associative (-de)</td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td>bǎ</td>
<td></td>
</tr>
<tr>
<td>B.C.</td>
<td>Before Christ</td>
<td></td>
</tr>
<tr>
<td>BEI</td>
<td>bèi</td>
<td></td>
</tr>
<tr>
<td>CLA</td>
<td>Classifier</td>
<td></td>
</tr>
<tr>
<td>CRS</td>
<td>Currently Relevant State (le)</td>
<td></td>
</tr>
<tr>
<td>DT</td>
<td>Different Trajectory</td>
<td></td>
</tr>
<tr>
<td>DUR</td>
<td>Durative aspect (zai)</td>
<td></td>
</tr>
<tr>
<td>E-framed</td>
<td>Equipollently-framed</td>
<td></td>
</tr>
<tr>
<td>EXPE</td>
<td>Experiential aspect (-guo)</td>
<td></td>
</tr>
<tr>
<td>INS</td>
<td>Instrumental</td>
<td></td>
</tr>
<tr>
<td>JIANG</td>
<td>jiāng</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Loc</td>
<td>locative marker</td>
<td></td>
</tr>
<tr>
<td>LR</td>
<td>Left to right</td>
<td></td>
</tr>
<tr>
<td>NP</td>
<td>Noun Phrase</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>Other grammatical devices</td>
<td></td>
</tr>
<tr>
<td>PERF</td>
<td>Perfective aspect (-le)</td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>Plural</td>
<td></td>
</tr>
<tr>
<td>POT</td>
<td>Potential marker (de)</td>
<td></td>
</tr>
<tr>
<td>PN</td>
<td>Personal name</td>
<td></td>
</tr>
<tr>
<td>RL</td>
<td>Right to left</td>
<td></td>
</tr>
<tr>
<td>RVC</td>
<td>Resultative Verb Compound</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Source</td>
<td></td>
</tr>
<tr>
<td>S-framed</td>
<td>Satellite-framed</td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>Same Trajectory</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Verb</td>
<td></td>
</tr>
<tr>
<td>V-framed</td>
<td>Verb-framed</td>
<td></td>
</tr>
<tr>
<td>ZHE</td>
<td>zhe</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 1. INTRODUCTION

1.1 Background

A motion event is one of the most basic of events in our lives, involving the movement of an entity from one location to another (Johnson, 1987). As human beings, we perform motion events and talk about them frequently. Interestingly, linguists have also given much attention to the relationship between space and language typology, which has often been discussed in relation to expressions of motion events (e.g., Talmy 1983, 1985, 1991, 2000; Slobin 1998, 2004, 2006; Ji, Hendriks, Iakovleva & Soroli, 2010).

In a motion event the moving entity, or Figure, takes a trajectory to travel from one location to another in space. This trajectory is also called the Path. Based on how the Path is linguistically encoded, Talmy (1985, 1991) classifies all languages into two distinct categories: verb-framed (V-framed) or satellite-framed (S-framed). In a verb-framed language, the Path of the Figure is encoded in a main verb. In a satellite-framed language, the Path of the Figure is encoded in a satellite, which is in a subordinate position to the main verb, such as English prepositions to, across and into. Typically, Spanish is a V-framed language, and English is a S-framed language. However, this binary classification has also generated fairly heated debates over the years. For example, researchers have suggested that not all languages fit in the two typological categories proposed by Talmy (e.g., DeLancey, 1989; Slobin & Hoiting, 1994; Zlatev & Yangklang, 2004). In particular, serial verb languages such as Mandarin Chinese have been described
as neither V-framed nor S-framed, but equipollently-framed (E-framed) (Slobin, 2004, 2006). Slobin (2004) claims that, in an E-framed language, both the Manner (e.g., walking, flying) and the Path of the Figure are encoded in equally significant verbs. More recently, new empirical evidence has shown that voluntary and caused motion event types also play an important role in the classification of Chinese (Ji et al., 2011).

Specifically, when expressing voluntary motion events, Chinese displays characteristics of S-framed languages (Ji, Hendriks & Hickman, 2009; Ji et al., 2010). When expressing caused motion events, however, Chinese simultaneously displays V- and S-framed properties. Therefore, Chinese is both V- and S-framed with a “parallel” system (Ji et al., 2011, p.1041, quotation marks were added in the original paper). Thus, Chinese has been classified variously as S-framed (Talmy, 1985, 1991), E-framed (Slobin, 2004, 2006) and simultaneously V- and S-framed (Ji et al., 2011).

The typological classification of languages has also brought up an important question in the field of second language acquisition (SLA): to what extent do typological similarities and differences affect the learning of motion events for second language (L2) learners? Existing SLA studies along this line have mainly investigated the learning of typologically different languages. Furthermore, results from empirical studies have not yet shown a consistent answer to this question (Cadierno, 2004; Cadierno & Ruiz, 2006; Navarro & Nicoladis, 2005).

On the one hand, they have shown that a typologically different first language (L1) clearly interferes with learners’ acquisition of a typologically different L2 in expressing motion events (Cadierno, 2008). On the other hand, no difference has been

---

1 Hereafter, “Chinese” is used to refer “Mandarin Chinese” unless otherwise specified.
found between L2 learners with typologically different L1 (Cadierno & Ruiz, 2006). Thus, it remains unknown whether knowing learners’ L1 can predict the linguistic utterances they produce in a typologically similar or different L2.

1.2 Previous studies and their problems

It is clear from the discussion in the previous section that no consensus has been reached regarding the typological classification of Chinese in relation to expressions of motion events. Furthermore, more research is needed before we understand to what extent typological similarities and differences affect the learning of motion event expressions for second language (L2) learners. This dissertation intends to fill these gaps. To this end, it is important to examine problems existing in previous studies.

In particular, three major problems exist in previous studies. First, the major arguments in relation to the typological classification of Chinese in theoretical studies have focused on the grammatical status of Verb2 (V2) in a “Verb1 + Verb2” (“V1 + V2”) construction, that is, whether V2 is in an equal or subordinate position to V1. This approach is fundamentally problematic due to the fact that Chinese does not have the morphological complexity necessary to clearly distinguish a verb and a satellite (Ji et al., 2011). Specifically, a serial verb construction in Chinese “allows for at least two verb slots in a single clause” (Chen & Guo, 2009, p. 1751), including a Manner verb and a Path verb. Morphological marking that does exist, such as aspect, does not explicitly indicate which verb has the main verb status in Chinese. Because of this, no consensus has been reached among Chinese linguistics. If a decision were to be made solely based on the grammatical status of V2, it would be inevitably uninformative. This dissertation
avoids this problem by extending the examination of typological features of Chinese from theoretical status of V2 to language use. More specifically, it examines “the selection and distribution of spatial information over the entire utterance” (Ji et al., 2011, p. 1044). This method provides more information on the linguistic distribution of motion event expressions in actual language use, which can in turn help to show the typological properties of Chinese.

Second, caused motion events have not been thoroughly explored in investigations of the typological properties of Chinese (e.g., Chen 2005; Chu 2009; Chen & Guo, 2009; Ji et al., 2011). As noted by Fausey & Boroditsky (2011), caused events are complex events that demand more cognitive construal for speakers than do simple events. Classical studies pertaining to expressions of motion events (e.g., Slobin, 1996a) have mainly focused on voluntary events that consist of the movement of one entity in a single event, whereas a caused motion event contains at least two entities (viz. a causer and a causee), involving a minimum of two single events on an event chain (namely, an event of the causer’s action on the causee and an event of the causee’s movement). In order to fully grasp the influence of event types on linguistic descriptions and distributions, it is important to examine complex motion events in more detail.

Furthermore, to date, only one type of caused event, in which the Agent and the Object take the same trajectory (ST), has been examined for Chinese. In particular, the ST motion events being examined in the current literature possess the following characteristics:

a. (T)hese caused motion events are translocative rather than locative in that an object’s basic location shifts from one point to another in space; b. (E)ach caused motion event under discussion involves an agent and an object. The object’s motion is provoked by an external force exerted on it by the agent, rather than
spontaneous or voluntary; c. (T)he agent’s continued action is necessary for the object’s motion and the two follow the same trajectory in the course of their movement (Ji et al., 2011, p. 1042).

The description above shows that the Agent and the Object take the same Path in a ST motion event. Once more, only this particular type of motion event has been investigated in relation to the typological features of Chinese. It is thus legitimate to ask whether or not the uninvestigated types of motion events may generate different typological features in Chinese. In this context, this dissertation aims to add to the existing research by examining different-trajectory (DT) caused motion events.

Specifically, the DT caused motion event type under discussion employs the following three characteristics. First, each event involves two entities: an Agent and an Object. Second, the Agent and the Object have a causer-causee relationship. In particular, the Agent exerts an external force on the Object, which causes the Object to move from the original locative point to another in space. Third, the Agent’s continued action is not necessary for the Object’s motion. Specifically, the Agent stays at the original place throughout the course of exerting an external force on the Object, while the Object changes its location to a different locative point due to the external force. For example: a man (Agent) threw a ball (Object) into a swimming pool. The man (Agent) stays at the original place (i.e., a point outside of the swimming pool), but the Object travels to a different locative point (i.e., inside the swimming pool) due to the Agent’s action of throwing.

Another question one might ask is why to choose DT caused motion events over other event types. Below I explain the importance of investigating DT caused motion events in detail. Ji et al. (2011) claims that Chinese equally frequently displays S- and V-
framed properties in describing ST caused motion events. In particular, native speakers of Chinese equally use the 把 (bā, BA) construction and the 着 (zhe, ZHE) construction in their study (Ji et al., 2011). The argument is that the BA construction is associated with S-framed properties, whereas, the ZHE construction displays V-framed characteristics. In Chinese, the BA construction is composed of a resultative verb compound (RVC) (e.g., 推进 tuī-jìn, push-enter).² A RVC consists of two elements, in which the former refers to an action and the latter refers to a result caused by the action (Li & Thompson, 1981). For example, in the Chinese RVC 推进 (tuī-jìn, push-enter), the first element 推 (tuī, to push) encodes Manner and the second element 进 (jìn, to enter) encodes Path. This is similar to how Manner and Path are encoded in English, which is S-framed. For example, in “run across”, the verb “run” (the first element) encodes Manner and the satellite “into” (the second element) encodes Path.

Different from the BA construction, the ZHE construction depicts two simultaneous actions, in which the ongoing background action is marked by ZHE, while the main action is encoded in the main verb.³ For example, in the sentence 他推着车进房

² Resultative Compound Verbs (RCVs) may also be used to represent the RVC structure (Li, 2006). Despite the different labels, they represent essentially the same grammatical structure in Chinese.

³ One may argue that the ZHE construction can also display S-framed properties while employing the structure: “V + ZHE + RVC” (推着车走进山洞 tuī zhe chē zòu-jìn shān dòng, push-ZHE cart walk-enter cave). In this case, the first element (i.e., 走 zǒu, to walk) in the RVC construction (i.e., 走进 zòu-jìn, push-enter) encodes Manner, and the second element encodes Path (i.e., 进 jìn, to enter). Ignoring the ongoing action verb marked by ZHE, the RVC construction is the same as that in a BA construction in terms of how Manner and Path are encoded. However, Ji et al. (2011) treated the RVC as a main clause in the ZHE construction, and the emphasis was placed on the ongoing background action.
间 (tā tuī-zhe chē jìn fāngjiān, he push-ZHE cart enter room), 推着车 (tuīzhechē, push-ZHE-cart, pushing cart) is the background action for the main action 进房间 (jìn fāngjiān, enter-room, to enter a room) This construction fits in situations where the Agent and the Object move simultaneously from one location to another, and in which the Agent functions as the source of the external force. In this construction, the Path is encoded in the main verb, i.e., 进 (jìn, to enter), displaying a property of V-framed languages (Ji et al., 2011).

However, in a DT caused motion event, the ZHE construction is generally, if not always, inappropriate. This is because the Agent exerts the external force before the Object moves along the trajectory in a DT caused motion event. Consequently, there is no ongoing action along with the Object’s movement. Therefore, Chinese would exclusively display S-framed properties for such event types, because only the BA construction is appropriate in describing such events. In fact, Ji et al. (2011) accept that the expressions elicited in their study “might not fully illustrate the diversity of options available for expressing caused motion events” (p. 1070). Therefore, investigating DT caused motion events would help reveal more about the typological properties of Chinese. It is believed that, by doing so, we can gain a more comprehensive understanding of typological properties of Chinese in relation to expressions of caused motion events.

The last concern pertains to studies on L2 Chinese in relation to expressions of motion events. In a broader context, empirical studies on expressions of motion events in L2 acquisition are still scarce (Cadierno, 2008). There is a need for more research before we can fully understand the challenges and difficulties L2 learners encounter in this domain (Ortega, 2009). Furthermore, L2 researchers tend to focus more on languages that
are typologically different. Among the different proposals of classifying Chinese, L2 researchers have chosen to treat Chinese as E-framed in comparison with English. For example, Wu (2011) treated Chinese as E-framed in investigating how English learners of Chinese use directional complements. Similarly, Spring (2010) treated Chinese as E-framed when examining event conflation of L2 English by L1 Chinese learners. The major problem with these existing studies is that they employed a certain theoretical classification of Chinese without providing empirical evidence for such a framework. In the meantime, no effort has been made to probe the problems and difficulties that English learners of Chinese have from the perspective of learning a typologically similar L2.

Taken together, these problems caution against making a conclusion about the typological classification of Chinese before a finer-grained analysis is conducted. Obviously, only if the typological features of Chinese are supported with empirical evidence can the related theoretical framework be employed to uncover potential issues in L2 Chinese learning pertaining to expressions of motion events.

1.3 Dissertation research objectives

This dissertation has two major objectives. The first objective is to provide evidence for the taxonomy of typological classification for Chinese in relation to DT caused motion events. This is particularly important because of the unique features of Chinese in comparison to other languages. In particular, Chinese displays different typological characteristics with respect to different types of motion events. The existing literature has only pinpointed the dichotomy of voluntary and caused motion events in
event expressions (e.g., Ji. et al. 2010), yet the possible differences within caused motion events have not been explored. Moreover, to date, only accompanied caused motion events have been investigated. This dissertation aims to fill this gap by extending the examination of motion events to unaccompanied caused motion events, i.e., DT caused motion events.

Following Ji et al. (2011), this dissertation expands the examination of motion events from a focus on the grammatical status of verbs to an examination of the distributions of key information components for motion events. It also takes an unbiased approach by analyzing data from a position that adopts both Talmy’s (1985, 1991) and Slobin’s (2004, 2006) theoretical perspectives. Namely, the data are analyzed twice, once by following Talmy’s classification of Chinese (i.e., as an S-framed language) and once by following Slobin’s classification of Chinese (as an E-framed language). Furthermore, it scrutinizes the possible differences between boundary-crossing and non-boundary-crossing motion events. The reason for differentiating between these two types of events is as follows. Chinese is claimed to possess V-framed properties (Ji et al., 2011). Whether or not a motion event is boundary-crossing decides the intra-typological differences in V-framed languages (Cadierno, 2010). In order to explain the characteristics of V-framed languages fully, it is important to take into consideration the boundary-crossing constraint (Aske, 1989; Slobin & Hoiting, 1994). For example, in Spanish, the conflation of Motion and Manner into the main verb can only appear in non-boundary-crossing contexts (e.g., *Ella corrió hasta la casa*, She ran up to the house [without entering]). In boundary-crossing contexts, Manner must be expressed in a separate constituent (e.g. *Ella entró a la casa corriendo*, She entered the house running). Therefore, teasing apart boundary-
crossing and non-boundary-crossing events when analyzing such expressions in Chinese can help disclose any potential differences in event categorization, if Chinese indeed possesses V-framed properties. If, however, no difference is found between these two types of motion events, we would know that the V-framed properties displayed by Chinese may be conditional.

The second objective of this dissertation is to probe the difficulties and problems that English-speaking L2 Chinese learners have when expressing DT caused motion events. Existing L2 studies that investigate learners’ expressions of motion events have mainly focused on typologically different languages. Such a focus has inevitably created biases in the selection of typological classifications when more than one theoretical proposal is available. For example, Chinese has been treated as E-framed in L2 studies that investigate expressions of motion events of both English-speaking L2 Chinese learners (e.g., Wu, 2011) and Chinese-speaking L2 English learners (e.g., Spring 2010). Studies like these indeed further our understanding of problems and difficulties L2 learners have in learning L2 motion events. However, it would be more convincing and informative if empirical evidence were provided to support the selection of a certain proposal. Furthermore, no effort has been made to probe the problems and difficulties that English learners of Chinese have from the perspective of learning a typologically similar L2. This dissertation aims to fill these gaps by doing the following. First, it employs the existing theoretical perspectives as guidelines, but provides reliable empirical evidence on the typological classification of Chinese in relation to expressions of motion events. More specifically, it provides empirical evidence on the typological properties of Chinese in describing DT caused motion events. On the basis of this, the L2
Chinese learners’ verbal production data is analyzed from different perspectives, i.e., the use of semantic constituents, syntactic constructions and sentence structures. In practice, the three groups’ verbal expressions of DT caused motion events (i.e., native English speaker group, native Chinese speaker group and advanced L2 learner group) are compared qualitatively and quantitatively in order to elucidate any existing similarities and differences among these three groups. All of these, consequently, provide suitable pedagogical implications for teaching DT caused motion events to English-speaking L2 Chinese learners.

1.4 Organization of the dissertation

The organization of this dissertation is as follows. As an introduction, chapter 1 sets the stage for the entire dissertation. Chapter 2 gives a detailed overview of the existing typological studies in relation to expressions of motion events, with an emphasis on the unsolved typological status of Chinese. Chapter 3 deals with the Chinese disposal construction in the context of motion event expressions. It details the forms and functions of the Chinese BA, JIANG and BEI constructions and their relations to expressions of DT caused motion events. Then chapter 4 discusses the theoretical orientation of expressing motion events in SLA. Specifically, it gives a review of Slobin’s (2004, 2006) thinking-for-speaking hypothesis in investigating expressions of L2 motion events. Chapter 5 reports the results of a study on how native Chinese speakers and advanced L2 Chinese learners express DT caused motion events, compared with native English speakers’ data. Finally, chapter 6 concludes this dissertation with a discussion and
conclusion regarding pedagogical implications for the teaching of DT caused motion
events in Chinese. It also discusses the contributions and limitations of this dissertation
and provide recommendations for future studies.
CHAPTER 2. EXPRESSIONS OF MOTION EVENTS IN LANGUAGES

2.1 Introduction

As noted in Chapter 1, this dissertation mainly examines the expressions of motion events. In this chapter, I will first illustrate the basic elements of motion events and their relation to typological classifications of natural languages. Next, I will discuss existing studies of inter-typological and intra-typological differences. Then, I will talk about the current status of the typological classification of Chinese in relation to expressions of motion events. In particular, I will present how this discussion is related to the status of the main verb in a serial verb construction. Finally, I will present debates on the status of main verbs in the field of Chinese Linguistics.

2.2 Motion events

A motion event is one of the most basic events in our lives, involving an entity moving from one location to another (Johnson, 1987). In natural languages, a motion event typically consists of the following semantic components (Talmy, 1985):

- Figure: the object that undergoes a location change
- Ground: the reference object for Figure
- Path: the trajectory taken by Figure
- Manner: a type of distinct motion

Examples (1) and (2) illustrate motion events in English and in Chinese:

(1) John walked into the room.
    Figure: John; Ground: room; Path: into; Manner: walking
(2) 一头牛跑进了院子。

*Yì tóu niú pǎo-jìn le yuànzi.*

one CLA cow run-enter PERF yard
A cow ran into the yard.

**Figure:** 一头牛 (*yì tóu niú*, a cow)
**Ground:** 院子 (*yuànzi*, yard)
**Path:** 进 (*jìn*, to enter)
**Manner:** 跑 (*pǎo*, to run)

Path is considered to be the most essential component of a motion event (Ji et al., 2011; Talmy, 2000). Specifically, it covers both Path and site, without which a motion event cannot exist. Other components of a motion event are not as essential as Path to the motion event. For example, either Figure or Ground can occur independently. Likewise, Manner, which is not always encoded in a motion event, is an optional component. Due to the significance of Path in a motion event, the typological classification of languages is essentially based on how Path is encoded.

According to Talmy (2000), a motion is a “macro-event” that consists of two simpler events: a framing event and a co-event (p. 213). The framing event, which is also the main event, includes four components: Figure, Ground, Activating Process and Association Function. The Activating Process can be considered as a transition that initiates the dynamism to the event. The Association Function shows the relationship between Figure and Ground, which is the most important component because either the Association Function alone or together with Ground can be viewed as the core schema. The co-event provides support for the framing event, which bears a subordinate or an equal relationship to the framing event. More specifically, the Activating Process constitutes motion. The Association Function, which relates Figure to Ground, constitutes
Path. The co-event, in support of the framing event, may bear a variety of relations to the framing event, such as Cause, Manner and Purpose. In typologically different languages, the macro-event is mapped onto different syntactic structures.

Table 2.1 Classification of V-framed and S-framed languages

<table>
<thead>
<tr>
<th>Classification</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-framed:</td>
<td>Romance, Semitic, Japanese, Tamil, Polynesian,</td>
</tr>
<tr>
<td>main verb (Path) +</td>
<td>most Bantu, most Mayan, Nez Perce, and Caddo</td>
</tr>
<tr>
<td>subordinate verb (Manner)</td>
<td></td>
</tr>
<tr>
<td>S-framed:</td>
<td>Most Indo-European (excluding Romance),</td>
</tr>
<tr>
<td>verb (Manner) + satellite (Path)</td>
<td>Finno-Ugric, Chinese, Ojibwa, and Warlpiri</td>
</tr>
</tbody>
</table>

Based on how the macro-event is mapped onto syntactic structures in languages, Talmy (1985, 2000) proposed two typologically distinct patterns for the expressions of motion events: V-framed and S-framed. Accordingly, all natural languages are classified into these two categories based on “where they characteristically express the schematic core of the event complex” (Talmy, 2000, p. 213). The “schematic core” here refers to Path, which again is considered to be the most essential to a motion event (Talmy, 2000). Table 2.1 illustrates the classification of V-framed and S-framed languages based on this distinction (Talmy, 1991).

Clearly, Table 2.1 has indicated that most Indo-European languages (excluding Romance) are S-framed and Romance languages are V-framed. As a member of the Indo-European language family, English is S-framed. As a Romance language, Spanish is V-framed. Chinese is clearly listed as S-framed. With regard to Talmy’s (1991)
classification, different opinions have arisen in the last decade, which will be discussed in sections 2.4 and 2.6.

2.3 Inter-typological differences

2.3.1 Verb-framed languages

In V-framed languages, the core schema is mapped onto the verb to form a framing verb. Languages with such a characteristics include Romance, Semitic, Japanese, Tamil, Polynesian, most Bantu, most Mayan, Nez Perce, and Caddo (Talmy, 1991).

Figure 2.1 illustrates the mapping in a V-framed language, using Spanish as an example. As we can see from Figure 2.1, Spanish is V-framed, in which the Association Function (i.e., the core schema) *entro* is positioned and combined with the Activating Process *MOVE*.

<table>
<thead>
<tr>
<th>Framing Event</th>
<th>Support</th>
<th>Co-event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure</td>
<td>Activating Process</td>
<td>Association Function</td>
</tr>
<tr>
<td>La botella</td>
<td><em>MOVE</em>, <em>entro</em></td>
<td><em>entro</em></td>
</tr>
</tbody>
</table>

* Italics indicate Talmy’s postulations and non-italics indicate actual lexical and phrasal expressions.

**Figure 2.1** Syntactic mapping of the macro-event in verb-framed languages

More specifically, in a V-framed language, Path is encoded in the main verb or verb root (e.g., *entrar, salir*, “go in, go out” in Spanish), but Manner, if not omitted, is encoded by a separate semantic constituent such as a gerund (e.g., *caminado*, “walking”
There are a large amount of verbs that conflate motion and Path, but a
Manner verb and a Path verb cannot be combined into a single expression. For instance,
“La botella salió de la cueva flotando” in Spanish literally means “the bottle exited from
the cave, floating.” The main verb salió (exited) encodes motion and Path while the
subordinate verb “flotando, floating” encodes Manner. In fact, a large amount of main
verbs conflate motion and Path in V-framed languages. Because of this, a separate verb
clause is required for each Path component, which may result in the encoding of
relatively less information concerning Path (Slobin, 1996b). Additionally, Manner is
usually expressed in a separate constituent, which is encoded only when it is at issue
(Cadierno, 2010). This phenomenon, according to Slobin (2004, 2006), results from the
selection process of a simpler structure. In particular, adding a Manner constituent would
potentially create a heavier processing load in comprehension and production. Thus,
when Manner is not at issue, speakers may opt for a simpler structure, in which only the
most essential semantic constituent, i.e., Path, is linguistically encoded.

Furthermore, prepositions in V-framed languages function differently from those
in S-framed languages. In S-framed languages such as English, prepositions (e.g., across
or into) provide clear information about Path. However, prepositions in V-framed
languages give minimal specification concerning Path. Thus, Path information in Spanish
is normally inferred in given contexts, and interlocutors use their general world
knowledge to obtain such information. When the information cannot be inferred, a static
outline of related information is provided, from which the Path information can be
extracted (Slobin, 1996a). Below the two examples demonstrate.
Example (3) clearly shows the Path of the frog in English by using two prepositions (i.e., down into). Conversely, the Path of the frog is rather ambiguous in example (4). Note that both sentences are generated from the same event. As illustrated in example (4), the Spanish sentence gives general static locative information (i.e., that was below) instead of a clear description of the Path (i.e., down into), which may be confusing to non-native speakers of Spanish. However, native Spanish speakers have developed this habitual ability to infer Path information within the given context.

2.3.2 Satellite-framed languages

In S-framed languages, the core schema “Path” is mapped onto the satellite to form a framing satellite. According to Talmy (1985), a satellite is syntactically in a subordinate position to its main verb, such as a preposition. Talmy (2000) further extended Path elements in S-framed languages to adpositional phrases that introduce Ground information.

As shown in Table 2.1, S-framed languages include most Indo-European (excluding Romance), Finno-Ugric, Chinese, Ojibwa, and Warlpiri. Figure 2.2 illustrates how the core schema Path is mapped in an English sentence.

As we can see from Figure 2.2, the co-event by floating instead of the core schema into is moved to the position of Activating Process MOVE and combine with it.
Clearly, the main action and Manner are conflated. The core schema Path is not encoded in main verbs or verb roots but rather in satellites and verb particles in S-framed languages.

<table>
<thead>
<tr>
<th>Framing Event</th>
<th>Support</th>
<th>Co-event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure</td>
<td>Activating Process</td>
<td>Association Function</td>
</tr>
</tbody>
</table>

The bottle *MOVE*, floated *into* the cave *by floating*

```
Satellite
```

* Italics indicate Talmy’s postulations and non-italics indicate actual lexical and phrasal expressions.

**Figure 2.2 Syntactic mapping of the macro-event in S-framed languages**

Latinate Path verbs such as “to descend, to ascend” can be found in English, but they are not used very frequently. It is instead the English prepositions (e.g., *across* and *into*) that provide clear Path information. For example, the English sentence “she is jumping into the ocean” includes a main verb (i.e., *jumping*) that describes the Manner and form of motion, while the Path is described by a preposition (i.e., *into*).

Furthermore, Path elements (i.e., satellites, verb particles and adpositional phrases) in S-framed languages can be packed within one clause, which makes it easy to provide additional Path information in S-framed languages (Slobin, 1996b).

---

4 Brown and Gullberg (2010) challenge this view, showing that Japanese (V-framed) speakers packed more Path information within a clause than English speakers did in their data. The Path information included in the verb clause is more than commonly predicted for V-framed languages.
Differences also exist within a given V-framed or S-framed language group. First, one language may display different typological properties. As we know, Spanish is a V-framed language. However, an important intra-typological difference in V-framed languages is that, depending on whether or not Path is associated with the crossing of a spatial boundary (i.e., into/out of/over a boundary), this type of language displays different typological properties. In particular, the conflation of Motion and Manner into the main verb can only appear in non-boundary-crossing contexts (e.g., *Ella corrió hasta la casa*, She ran up to the house [without entering]). In boundary-crossing contexts, Manner must be expressed in a separate constituent (e.g. *Ella entró a la casa corriendo*, She entered the house running). As we can see, non-boundary-crossing events actually display S-framed properties in V-framed languages.

Slobin (1997) explains that crossing a spatial boundary is “a change of state, and (that) state changes require an independent predicate…” (p.441). Particularly, in V-framed languages such as Spanish, this kind of state change is marked by Path verbs (e.g., *salir*, to exit; *subir*, to go up and *bajar*, to go down). Therefore, the boundary-crossing constraint plays a role in the typological features in V-framed languages such as Spanish. In S-framed languages, however, the conflation of Motion and Manner in the main verb can be used in both boundary- and non-boundary-crossing contexts (e.g., *She ran into the*...)

---

5 According to Slobin (2004), only possible exception to this exists in the association of state change with independent predicate, that is, when high-energy motion verbs such as “to throw oneself” and “to plunge” are used to describe punctual and abrupt motion events. Interestingly, this kind of sudden force is often encoded in Manner verbs. For example, *El niño se sumergió en la piscine* (‘the child plunges into the swimming pool’) (Cadierno, 2010, p. 3). Cadierno (2010) notes that in a V-framed language like Spanish, the use of a manner-motion conflated main verb in a sudden boundary-crossing motion event also depends on the dimensionality of the Ground and how much knowledge the speaker has on the motion event being described.
house [boundary-crossing]; She ran up to the house [non-boundary-crossing]). Obviously, in order to explain the characteristics of V-framed languages fully, it is important to take into consideration of the boundary-crossing constraint (Aske, 1989; Slobin & Hoiting, 1994).

Second, languages within the same typological category may display different properties. With respect to Manner expressions, differences have also been found within S-framed languages. For example, native speakers of Russian (S-framed) are inclined to use Manner verbs more frequently than do native speakers of Chinese and Thai. In the meantime, native speakers of Chinese and Thai tend to use Manner verbs more frequently than do speakers of English, German and Dutch (Slobin, 2004, 2006). Cadierno (2010) explains that these differences stem from the morphosyntactic structures and the available lexical items of these languages. For example, Germanic languages encode Path in verb particles, while Slavic languages encode Path in prefixes. In serial verb languages such as Thai, Path and Manner are encoded by equally important verbs in a “V1 + V2” construction (Slobin, 2004). In terms of Path, speakers of three V-framed languages (i.e. Turkish, Basque and West-Greenlandic) elaborate more on path information than speakers of other prototypical V-framed languages such as Spanish (Özçalişkan & Slobin, 1998; Ibarretxe-Antuñano, 2004; Engberg-Pedersen & Trondhjem, 2004).

Finally, on the basis of intra-typological differences, researchers have challenged Talmey’s (1985) binary classification of languages. It has been claimed, for example, that a third typological classification, i.e., E-framed, should be added to represent serial verb languages. This is because serial verb languages do not fit well with either V-framed or S-framed typologies (e.g., Slobin, 2004; Zlatev & Yangklang, 2004). This will be
discussed in more detail in relation to Chinese in section 2.6. Below we will talk more about Manner.

Slobin (2004, 2006) has also proposed that languages should be classified based on a continuum of Manner salience instead of according to a rigid bipartite typology. This Manner salience is defined as ‘…the level of attention paid to manner in describing motion events’ (Slobin, 2006, p.64). Specifically, this Manner salience can be evaluated based on different criteria, such as how easy it is for native speakers to access Manner lexicons, how frequently native speakers encode Manner in their speech (natural and elicited), and how native speakers perceive Manner verbs in their own languages. More specifically, in high-manner-salient languages, the Manner constituents are easy to access. In low-manner-salient languages, the Manner constituents are in subordinate positions to the Path constituents, which may be more difficult to access. For example, S-framed languages and serial verb languages are high-manner-salient languages in which Manner is encoded in verbs. V-framed languages are low-manner-salient languages, and Manner is often encoded in a separate constituent other than the main verb. Apparently, a main verb is more salient than a separate constituent such as a gerund in a sentence, which makes the former easier to access.

As we can see from the points discussed above, intra-typological differences are closely associated with inter-typological differences. When intra-typological differences are salient enough, it is probably time to re-evaluate the existing taxonomy of typological classifications. In situations like this, in other words, it may be necessary to view so-called intra-typological differences instead as inter-typological differences.
2.5 Empirical studies

Even though these different proposals have been raised regarding the typological classifications of natural languages, Talmy’s (1985, 1991) binary classification has been supported by empirical evidence. Generally speaking, the existing empirical studies have shown that native speakers of V- and S-framed languages display contrasting patterns in expressing motion events (e.g., Berman & Slobin, 1994; Sebastián & Slobin, 1994; Slobin, 1996a, 1996b, 1997, 2000, 2003, 2004, 2006; Hickman, 2006). These two types of languages express motion events differently both in lexical and syntactical choices (Hohenstein, 2005).

More specifically, speakers of V-framed languages (e.g., Spanish and French) focus on Path of a motion, rarely giving information about Manner. For example Özçalişkan (submitted) showed that Turkish (V-framed) speakers used a high percentage of either Path verbs alone or Path verbs with subordinate Manner verbs. Meanwhile, speakers of V-framed languages tend to provide static scenes on where the motion events take place in lieu of expressing Path (e.g., to throw the boy) (Slobin, 1996a). Furthermore, they often use neutral motion verbs to describe movements, among which Manner is expressed only when communicatively important (Slobin, 2004). By contrast, speakers of S-framed languages (e.g., English) depict Path in more detail (e.g., threw over the cliff into a pond) (Slobin, 1996a). They tend to provide more tightly packaged Path information within a single clause and elaborate more on Manner. For example, Özçalişkan (submitted) showed that English (S-framed) speakers used Manner verbs more frequently than Turkish (V-framed) speakers in describing the same motion events.

Naigles, Eisenberg, Kako, Highter, and McGraw (1998) showed that English speakers
expressed Manner in 91% of their utterances, whereas Spanish speakers expressed Manner only in 33% of their utterances. With regard to expressions for boundary-crossing motion events, native speakers of a V-framed language (e.g., Turkish) included Manner information only in punctual boundary-crossing motion events, even though both Path and Manner were salient in the presentation of motion events (Özçalişkan, submitted). Findings like these are congruent with Slobin’s (2004) opinion that Manner information is included only when such information is at issue for V-framed languages.

Generally speaking, the findings of these empirical studies have been consistent with the nature of typological classifications for the languages being investigated (Berman & Slobin, 1994; Sebastián & Slobin, 1994).

2.6 Typological classifications of Chinese

According to Talmy (2000), Chinese “is a strongly satellite-framed language” (p. 272). Satellite verbs in Chinese are used to express different elements of a motion event such as “path, aspect, state change, some action correlation, and much realization” (p. 272). This classification is supported by diachronic evidence. Peyraube (2006) conducted a detailed analysis on Chinese from a diachronic perspective. He found that Archaic Chinese was V-framed, but it “has undergone, some ten centuries ago, a typological shift from a verb-framed language to a satellite-framed language” (p. 121). Specifically, in Archaic Chinese, Path was encoded by the main verb. Later, around the 5th century AD, the “verb + complement (satellite)” construction appeared, in which satellites started to encode Path. Around the 10th century, satellites became functional words when it simultaneously functioned as independent verbs. By the time it evolved to Mandarin
Chinese, the series verb construction “V1 + V2” has shifted from “main verb + main verb” to “verb + complement (satellite)” through grammaticalization (Peyraube, 2006). As a result, Peyraube (2006) concluded that Mandarin Chinese is a S-framed language. Apparently, such a finding supports Talmy’s (1991, 2000) classification of Chinese.

Table 2.2 Talmy’s and Slobin’s Interpretations of Verb Relations

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Classification</th>
<th>Verb relation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talmy (1991)</td>
<td>S-framed</td>
<td>verb (Manner) + satellite (Path)</td>
<td>跑进 pāo-jìn</td>
</tr>
<tr>
<td>Slobin (2004)</td>
<td>E-framed</td>
<td>verb #1 (Manner) + verb #2 (Path)</td>
<td>to run-enter</td>
</tr>
</tbody>
</table>

Other voices have arisen over the years regarding the typological classification of Chinese. Research studies have suggested that some languages do not fit well with any of the two typological categories (DeLancey, 1989; Slobin & Hoiting, 1994; Zlatev & Yangklang, 2004). Specifically, Slobin (2004, 2006) has proposed a third typological category, i.e., E-framed. He argues that both verbs in the expression of a motion event in Chinese are main verbs, rather than a main verb plus a satellite. Table 2.2 illustrates the difference between Talmy’s (1985, 1991) and Slobin’s (2004, 2006) opinions. Obviously, the main difference between their views lies in how they define the semantic constituent following the Manner verb. What Talmy (1985, 1991) has classified as a satellite is treated as a main verb by Slobin (2004, 2006), who attributes this to the fact that V2 can independently function as a full-fledged verb in a single verb construction (V0). As we can see from examples (5) and (6), the morpheme 进 (jìn, to enter) takes the V2 position, following the verb 走 (zǒu, to walk) in example (5), but it is in the V0 position in
example (6). According to Slobin (2004), V2 in example (5) should be treated as a main verb, just like its full-fledged verb counterpart V0 in example (6).

(5) 我走进公园。
    Wǒ zǒu-jìn gōngyuán.
    I walk-enter park
    I walk into the park.

(6) 我进了公园。
    Wǒ jìn le gōngyuán.
    I enter PERF park
    I entered the park.

Furthermore, V1 and V2, which are in a serial verb construction, are equally significant in force (Slobin, 2004). Consequently, both Manner and Path are encoded in equipollently significant verbs in Chinese. Therefore, he argues, Chinese is E-framed.

Following Slobin’s (2004) E-framed classification of Chinese, research studies have examined expressions of motion events in Chinese elicited spoken narratives and novels (Chen, 2005, 2007; Chen & Guo, 2009). It has been claimed that Chinese speakers display habitual description patterns similar to those of both Spanish speakers and English speakers in written discourse, which ultimately shows E-framed properties.

More specifically, Chen and Guo (2009) found that both “V1 + V2” and V0 constructions are frequently used in Chinese novels. In particular, among 520 motion verb constructions (selected from 9 Chinese novels), 324 of them (62.31%) take the “Manner + Path” construction; 77 (14.81%) take the “Manner only” construction; 115 (22.12%) take the “Path only” construction; and 4 (0.77%) take the “deictic only” construction. Chen and Guo (2009) argue that the results are consistent with the purported typological properties of E-framed languages, because “Chinese writers use a
significant number of manner only (14.81%) or path only (22.12%) verb constructions” (p. 1760). Clearly, whether or not the V0 construction is used in the written discourse was taken as the criterion for justifying the typological features of Chinese in this case. The underlying rationale was that if the V0 construction is frequently used in the written discourse, its counterpart “V2” in a “V1 + V2” construction consequently also takes the same independent role. In other words, if Manner verbs and Path verbs can independently function as main verbs in Chinese, their status in “V1 + V2” constructions stays the same, i.e., functioning as an independent verb.

Talmy (2009) responded to Slobin’s (2004) stance of classifying Chinese as E-framed by arguing against the V2’s status as a main verb. Using the morpheme 过(guò) as an example, he illustrated the differences between 过(guò) in its V2 and V0 positions, as shown in examples (7) and (8). Talmy (2009) said, the Chinese morpheme 过(guò) means “past/across” in example (7), where it does not function as a verb. In example (8), it is a full-fledged verb that means “to pass a place as part of a route”. Obviously, 过(guò) in example (7) functions differently from its V0 counterpart in example (8).

Additionally, 过 (guò) in the V2 position may also function as an experiential aspectual marker, as illustrated in example (9).

(7) 我跑过了操场。
    Wǒ pǎo guò le cāochǎng.
    I run past PERF playground
    I run past/across the playground.

(8) 我过了操场。
    Wǒ guò le cāochǎng.
    I pass PERF playground
    I passed the playground. / I was observed to pass the playground as part of a long route.
Specifically, the morpheme 过 (guò/guo) in both examples (7) and (9) serves as a satellite to its respective verb, yet with different functions. In particular, it represents Path in example (7) but functions as an experiential aspectual marker in example (9). Therefore, Talmy (2009) concluded that the same morpheme that takes different positions in separate sentences may function differently or take divergent meanings. Consequently, using the existence of V0 to prove V2’s main verb status is invalid.

In addition to Slobin’s (2004, 2006) E-framed proposal, Chinese has also been classified as simultaneously V- and S-framed. Ji et al. (2010) argues that a language can be classified into different typological groups, depending on event types: voluntary or caused. When expressing voluntary motion events, Chinese displays more of the characteristics of S-framed languages (Ji et al., 2009, Ji et al., 2010). When expressing caused motion events, it displays both V- and S-framed properties, and it is both V- and S-framed with a “parallel” system (Ji et al., 2011, p. 1041). In fact, this line of research takes a different perspective from pure theoretical arguments. Instead of focusing on grammatical status of verbs, research along this line focuses on the selection and distribution of spatial information in actual language use.

More specifically, native Chinese speakers describe voluntary motion events in a similar fashion as do native English speakers. This is because both Manner and Path are expressed very frequently in Chinese and in English (Ji et al., 2009). When expressing ST

---

6 Quotation marks were added in the original paper.
caused motion events, Chinese equally frequently displays S- and V-framed properties (Ji et al., 2011). In particular, native speakers of Chinese equally used the 把 (bā, BA) construction (42%) and the 着 (zhe, ZHE) construction (58%). The BA construction is associated with S-framed properties, whereas the ZHE construction displays V-framed characteristics (see also section 1.2).

In sum, there are two major approaches regarding the typological classification of Chinese in relation to expressions of motion events: (a) an approach that focuses on the grammatical status of the Path component (i.e., verb or satellite), and (b) an approach that focuses on the selection and distribution of spatial information in language use. Regardless of which approach one takes, it is clear that no consensus has been reached with regard to the typological classification of Chinese. In fact, focusing on the Path word’s main verb status involves a range of theoretical arguments, as shown in the next section.

2.7 Main verb status in Chinese

Because of the unique features of Chinese, whether the V2 in a “V1 + V2” structure is a main verb has generated heated debates among Chinese linguists. Before discussing this topic in detail, it is important to clarify that the “V1 + V2” structures discussed in various contexts essentially manifest the same structural relationship. Talmy (1991) and Slobin (2004) simply employed “verb + satellite” or “main verb + main verb” to present the relationship between V1 and V2 in a “V1 + V2” structure. Chinese linguists, however, additionally used the following three linguistic terms: (a) RVC; (b) directional resultative verb compound (directional RVC); and (c) descriptive verb
compound (DVC). Below we will see that the structural relationship between V1 and V2 in these compounds is basically the same as that in a “V1 + V2” structure.

We have discussed the RVC in chapter 1 (see section 1.2). Example (10) consists of a RVC with a different surface structure “V1 + DE + V2”.

(10) 我跑得累。
    Wǒ pǎo de lèi
    I run POT tired
    I ran so that I am tired. / I am tired from running.

Example (11) consists of a directional RVC, because V2 进 (jìn, to enter) encodes direction. Example (12) consists of a DVC because V2 快 (kuài, fast) is descriptive of manner. Clearly, example (11) takes a “V1 + V2” structure, but examples (10) and (12) take the surface structure “V1 + DE + V2”. In fact, “V1 + DE + V2” is a potential form of “V1 + V2” (Li & Thompson, 1981). This potential form indicates that the Agent (the source of the action) has the potential to conduct such an activity.

(11) 我跳进游泳池。
    Wǒ tiào-jìn yóu yǒngchí.
    I jump-enter swimming pool
    I jumped into the swimming pool.

(12) 我跑得快。
    Wǒ pǎo de kuài.
    I run POT fast
    I can run fast/I run fast.

Example (13) consists of a directional RVC, because V2 进 (jìn, to enter) encodes direction. Example (12) consists of a DVC because V2 快 (kuài, fast) is descriptive of manner. Clearly, example (11) takes a “V1 + V2” structure, but examples (10) and (12) take the surface structure “V1 + DE + V2”. In fact, “V1 + DE + V2” is a potential form of “V1 + V2” (Li & Thompson, 1981). This potential form indicates that the Agent (the source of the action) has the potential to conduct such an activity.

(13) 我跳得进游泳池。
    Wǒ tiào de jìn yóu yǒngchí.
    I jump POT enter swimming pool
    I am able to jump into the swimming pool.

This structure can also be represented as “V1 + DE + complement”. This dissertation employs the surface structure “V1 + DE + V2”.

7
Li and Thompson (1981) state that all directional RVCs can occur in the potential form in Chinese. For instance, example (13) is the potential form of example (11).

Moreover, the “V1 + V2” structure in examples (5) and (7) in the previous section (see section 2.6) are also examples of the directional RVC construction, which can also occur in the potential form, as illustrated in examples (14) and (15).

(14) 我走得进公园。
    Wǒ zǒu de jìn gōngyuán.
    I walk POT enter park
    I am able to walk into the park.

(15) 我跑得过操场。
    Wǒ pǎo de guò cāochǎng.
    I run POT past playground
    I am able to run and past/ across the playground.

By the same token, the “V1 + DE + V2” structure, including the potential form of the directional RVC construction and the DVC construction, can occur in a “V1 + V2” structure. Examples (16) and (17) are the respective “V1 + V2” forms of the potential forms shown above in examples (10) and (12).

(16) 我跑累了。
    Wǒ pǎo lèi le
    I run tired PERF
    I ran and got very tired.

(17) 我跑快了。
    Wǒ pǎo kuài le.
    I run fast PERF
    I ran too fast. / I ran faster than before.

Obviously, the “V1 + V2” structure and the “V1 + DE + V2” structure essentially share the same structural relationship of V1 and V2, even though surface forms may be
different. It is clear that the structural relationship between V1 and V2 in these divergent surface forms stays the same.

Now let us turn to a discussion of V2’s status as a main verb. Chinese linguists have had extensive discussions on the status of the verbs in the serial verb construction in Chinese, among which two major views dominate. The traditional view is that V1 is the main verb (Mei, 1972, 1978; Chu, 1982; Huang 1982; Ross, 1984; Li, 1985). The other view is that V2 is the main verb (Chao, 1948, 1968; Tai, 1973; Tang, 1977; Huang & Mangione, 1985).

Advocators of the “V2 is the main verb” view have provided different reasons to support their arguments. Huang (1988) sums them up into three major categories: (a) The Chinese “A-not-A” question can only be inserted with V2 in a “V1 + V2” structure (Chao, 1968), so that V2 is the main verb; (b) Chinese 了 (le-suffixation) can only be inserted before V2 in a “V1 + V2” structure (Li & Thompson, 1978), so that V2 should be treated as the main verb; and (c) Treating V1 as the main verb will result in violating “Condition C of Chomsky’s 1981 binding theory” (Huang & Mangione, 1985), and consequently, V2 should be treated as the main verb.

In response to these three arguments, Huang (1988) first points out the invalidity of the key assumption underlying the first two assumptions, which are, only the main verb can take the “A-not-A” format and the 了 (le-suffixation). More specifically, Huang (1988) explains that where “A-not-A” occurs is “independent of the identification of the

---

8 The 了 (le-suffixation) construction has two functions: marker of either a perfective event or a Currently Relevant State. In fact, in certain situations, a 了 (le-suffixation) may “have the meaning of a perfective event that is a Currently Relevant State” (Li & Thompson, 1981, p. 296). In this chapter, the 了 (le-suffixation) refers to a perfective event.
main verb” (p. 284). Furthermore, where the 了 (le-suffixation) is inserted depends on whether or not the verb expresses a bounded event (Li & Thompson, 1981), which has no relation to a verb’s status as a main verb. As for the third argument, he argues that V1 and V2 can be seen as each having their own implicit subjects, a situation in which Chomsky’s binding theory assumption is not violated. Below are more detailed explanations.

(18)  

a. 我跑得快不快？
Wǒ pǎo de kuài-bu-kuài?
I run POT fast not fast
Do I run fast?

b. *我跑不跑得快？
Wǒ pǎo-bù-pǎo de kuài?
(Intended meaning: Can I run fast?)

(19)  

你 觉 得 他 喜欢 不 喜欢 你？
Nǐ juéde tā xǐhuan-bù-xǐhuan nǐ?
Do you think that he likes you or not?

First, “A-not-A” is not necessarily attached to the main verb. In example (18), V1 跑 (pǎo, to run) is the main verb, but “A-not-A” can only occur with V2 快 (kuài, fast).

Moreover, example (19) indicates that “A-not-A” can be inserted in an embedded clause. Second, the 了 (le-suffixation) can be attached to either a main verb or a subordinate verb, as shown in examples (20) and (21).

(20)  

小鸟飞进了教室。
Xiǎo niǎo fēi-jìn le jiàoshì.
little bird fly-enter PERF classroom

---

9 This sentence may be grammatical in some Chinese dialects, but it is unnatural in Mandarin Chinese.
The little bird flew into the classroom.

(21) 我听说小鸟飞进了教室。
Wǒ tīng shuō xiǎoniǎo fēi-jìn le jiàoshi.
I hear say little bird fly-enter PERF classroom
I heard that the little bird flew into the classroom.

Obviously, the 了(le-suffixation) is attached to V2 进(jin, to enter) in example (20). In example (21), the main clause is 听说(tīng-shuō, hear-say), and 小鸟飞进了教室(xiǎoniǎo fēi-jìn le jiàoshi, little-bird fly-enter PERF classroom) is the subordinate clause. As we can see, then, the 了(le-suffixation) is embedded in the subordinate clause in example (21). Thus, Huang (1988) states that where the 了(le-suffixation) occurs does not reveal a verb’s main verb status. Furthermore, the occurrence of the 了(le-suffixation) is only related to whether or not an event is bounded: It occurs with bounded events but not with unbounded events (Li & Thompson, 1981; Smith, 2006).

According to Radden and Dirven (2007), bounded events consist of four types: accomplishments, activities, achievements and acts. All of them can take place in the present or in the future in Chinese (Smith, 2006). Unbounded events are always durational (e.g., she is eating) (Radden & Dirven, 2007). Examples (22) and (23) illustrate that the “了 le-suffixation” can not be used with unbounded events.

(22) *他们喜欢了鸟。
Tāmen xǐhuān le niǎo.
they like PERF bird
(Intended meaning: they liked birds.)

(23) *我们在唱了歌。
Wǒmen zài chàng le gē.
we DUR sing PERF song
(Intended meaning: we were singing.)
Examples (22) and (23) are ungrammatical. This is because the main verb 喜欢 (xihuan, to like) in example (22) does not indicate the existence of an event, and the main verb 唱 (chàng, to sing) in example (23) is in a durational state, not in a bounded event. One might argue that the 了 (le-suffixation) can be placed after 唱歌 (chànggē, to sing song) in example (23). However, by doing so, the 了 (le-suffixation) is not inserted right after the main verb 唱 (chàng, to sing), which can not speak for its main verb status. More importantly, when 了 (le-suffixation) is placed at the end of the sentence, it signifies a change of state instead of a perfective event.

Third, it concerns whether “V1 as a main verb” violates the condition C of Chomsky’s (1981) binding theory. The binding theory is a structural principle that governs “the possibility and location of an antecedent for a given expression” (Huang, Li & Li, 2009, p.329). It deals with the distributions and interpretations of referential expressions: anaphors, pronouns (Heinat, 2002) and referential expressions (Huang, Li & Li, 2009).

In particular, anaphors (e.g., 自己 zìjǐ, oneself) need a linguistic antecedent in order to refer to entities other than themselves. Personal pronouns (e.g., 他 tā, he) can be used with or without antecedents. Referential expressions do not need a linguistic antecedent, such as 小王这个学生 (Xiǎowáng zhè ge xuéshēng, PN-this-CLA-student). This theory consists of three conditions: A, B and C. Condition C indicates that a referential expression is free. As noted earlier in this section, Huang and Mangione (1985) claim that treating V1 as a main verb violates condition C of the binding theory.
(24) 激动得他跳了起来。

He was so excited that he jumped up.

For instance, in example (24), 他 (tā, he), the logical subject of V1 激动 (jīdòng, excited), is also the subject of V2 跳 (tiào, to jump). However, the sentence shows that 他 (tā, he) is the overt subject of V2, not V1. If V1 激动 (jīdòng, excited) is the main verb, the subject is c-commanding its antecedent, which directly violates the rules of condition C because a referential expression should be free. According to Huang (1988), however, there is an implicit external cause that makes 他 (tā, he) excited in example (24). In example (25), 他 (tā, he) can be excited without an external cause. For this reason, example (25) can start a discourse without an explanation.

(25) 他激动得跳了起来。

He excited POT jump PERF up

Conversely, it would be unnatural to use example (24) to initiate a discourse without giving an explanation of the external cause. Thus, Huang (1998) argued that the empty subject preceding V1 in example (24) “is not coindexed” with the c-commanded overt subject 他 (tā, he) (p. 293). Therefore, C-command is not violated in sentences like (24).

In sum, the debates among Chinese linguists concerning the main verb status, just like the debates over the typological classification of Chinese, have not reached a consensus.
2.8 Summary

I started this chapter with an explanation of basic elements of motion events and presented their relationships to typological classifications of languages. Next, I discussed Talmy’s (1985, 1991) binary classification proposal and described inter-typological and intra-typological differences among languages. Then I talked about the current status of the typological classification of Chinese in relation to expressions of motion events, as well as how this discussion relates to main verb status in serial verb constructions. Finally, I presented debates concerning such main verb status among Chinese linguists.
CHAPTER 3. THE CHINESE DISPOSAL CONSTRUCTION

3.1 Introduction

As will be demonstrated in greater detail in Chapter 5, the expressions of DT motion events are closely associated with the Chinese disposal construction, which employs three forms: BA, JIANG and BEI. In this chapter, I will first define grammaticalization. Next, I will describe the grammaticalization process of the disposal construction in Chinese. Then, I will introduce the basic features of the disposal construction and discuss its three forms, i.e., BA, JIANG and the BEI, with an emphasis on the differences between these three forms. Finally, I will discuss the relation between the disposal construction and expressions of motion events in Chinese.

3.2 Grammaticalization of the disposal construction

Grammaticalization refers to two phenomena: (a) where a lexical item becomes a grammatical item; or (b) where a less grammatical element becomes a more grammatical one (Xu, 2008). It is a process in which a content word changes to a function word (Kurylowicz, 1965). During this gradual and continuous process, a more concrete word changes into a more abstract word, or a more objective one changes into a more subjective one (Traugott & Heine, 1991). This process is normally unidirectional (Tao, 2006), which often involves an overlapping categorical status during which both statuses

The singular term “disposal construction” in this dissertation refers to any or all constructions that convey the disposal effect.
co-exist, that is, the coexistence of both the content word and the function word.

In order to understand grammaticalization, it is important to clearly define “content words” and “grammatical words”. Content words or lexical words are open-class words that describe something. Function words or grammatical words or are close-class words, which are defined as follows (Hopper & Traugott, 1993):

[They] indicate the relationships of nominals to each other (prepositions), to link parts of a discourse (connectives), to indicate whether the identities and participants in a discourse are already identified or not (pronouns and articles), and show whether they are close to the speaker or hearer (demonstratives). (p. 4)

More specifically, content words include words like nouns, verbs, adjectives and most adverbs, and function words include prepositions, determiners, conjunctions and pronouns. Heine and Reh (1984) explained the process of grammaticalization as “an evolution whereby linguistic units lose in semantic complexity, pragmatic significance, syntactic freedom, and phonetic substance, respectively” (p. 15). Hopper and Traugott (1993) gave a more explicit definition of such a process as follows:

“[The] process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions.” (p. xv)

In general, the changed word may or may not keep its original concrete meaning in the course of grammaticalization. For example, the verb 到(dào, arrive/reach) has changed to a directional complement, but has kept its original meaning and function as a verb. However, the Chinese morpheme 把(bǎ, BA) is a different case. In Classical Chinese, BA functioned as a verb, which meant “to hold, to manipulate or to dispose”. Through grammaticalization, BA has become a preposition in Mandarin Chinese (Li & Thompson,
1981), which can no longer be used independently as a main verb.\textsuperscript{11} Below I will discuss the historical changes of the disposal construction in more detail.

As a serial-verb language, Chinese can take two verbs or two verb phrases in one sentence. The normal word order of Chinese is Subject + Verb + Object (SVO), but “Subject + BA + Object + Verb” also exists in Chinese (Li & Yip, 1979). As noted earlier in this section, the morpheme 把 (bǎ, BA) when used as a verb meant “to hold”. By the same token, the morpheme 将 (jiāng, JIANG) meant “to take”. Through grammaticalization, the first verb (BA or JIANG) in a serial-verb construction gradually evolved to an object marker (Zhu, 1957; Liu, Jiang, Bai & Cao, 1992).\textsuperscript{12}

Tian (2012) proposes an integrated theory of the grammaticalization process of the disposal construction. In particular, this construction originated from the YI construction in Archaic Chinese, which underwent the following pathway: “Pure Verb $\rightarrow$ Serial Verb $\rightarrow$ Preverbal Preposition” (p. 1414).\textsuperscript{13}

(26) 用望乘以羌自上甲。（甲骨文合集）\textsuperscript{14}

\textit{Yòng Wāngchéng yì Qiāng zì shàngjiā.}

Use PN\textsuperscript{15} honor PN from the-first-ten-days-of-the-month (They) sacrificed Wangcheng to honor Qiang at the beginning of the month. (Tian, 2012, p. 1414)

\begin{footnotesize}
\begin{enumerate}
\item The morpheme 把 (bǎ) may have kept its original meaning in fixed expressions in Mandarin Chinese, such as in 把门 (bǎ mén, to hold door). But 把 (bǎ) by itself is not used as a verb in Mandarin Chinese any more.
\item Mei (1990) holds that the Chinese disposal construction should be classified into three types, which originated from different sources.
\item Chen (1983) asserts that the YI disposal construction appeared as early as in the bronze script of Xizhou (1046BC – 771 BC).
\item In Tian (2012), NAME, instead of PN, is used to represent personal names.
\end{enumerate}
\end{footnotesize}
In example (26), YI functions as a full-fledged verb “to honor”. This verb can also be used in a serial verb construction with the latter verb functioning as the central verb in inscribed oracle bones (Tian, 2012). In fact, the 以 (yì, YI) construction demonstrated a sense of disposal in Archaic Chinese (Luo, 2007). Example (27) illustrates this.

(27) 以尔车来，以我贿迁。（诗经•卫风•氓）
Yī ěr chē lái, yǐ wǒ huì qiān.
YI you vehicle come, YI I dowry move
Come with your vehicle, and take my dowry.

Clearly, YI in example (27) serves as a pre-verbal object marker, which shares similarities with the later disposal construction in Mandarin Chinese.

It is worth noting that YI was used as an object marker when “the verb was followed by a spatial expression” (Chen, 1983, p. 1416), which appeared in the Late Han (25-220 AD) to the Southern Dynasties period (420-589 AD). Examples (28) and (29) illustrate.

(28) 家人常以琴置灵床上。（世说新语•伤逝）
 Jiārén cháng yǐ qín zhì língchuáng shàng.
family often YI lute place holy bed up
The family members often placed the lute on the bier.

(29) 以弟子一人投河中。（史记•滑稽列传）
Yī dìzi yī rén tóu hé zhōng.
YI disciple one person throw river inside
Throw a disciple into the river.

---

16 Sentence (27) is a line from 《诗经》 (Shijing, The Book of Songs), which is the earliest anthology of Chinese poetry. The anthology was probably collected between 1100 and 600 BC.
17 Sentence (28) is a line from 《世说新语》 (Shishuo xinyu, New Account of Tales of the World), which is a collection of dialogues and stories circulated by the literati of the Later Han (25-220 AD) to the Southern Dynasties (420-589 AD).
18 Sentence (29) is a line from 《史记》 (Shihiji, The records of the grand historian), which was written from 109 to 91 BC.
As noted by Tian (2012), YI in examples (28) and (29) function similar as BA. If we replace YI with BA, these two sentences are still grammatical and meaningful. This suggests that the YI construction “is the forerunner of the disposal construction” (p. 1417).

Now consider what a disposal construction really is. Specifically, the 处置式 (chǔzhì shì, disposal construction) “states how a person is handled, manipulated, or dealt with; how something is disposed of; or how an affair is conducted” (Wang, 1947, translated in Y.C. Li, 1974, pp. 200-201). In order to fulfill such a “disposal” function, the action described in this construction has to be a “purposeful” action taken on the direct object (Wang, 1947), and it has to refer to what happens to the direct object (Li & Thompson, 1981). Generally speaking, the disposal construction is associated with the BA construction, but the JIANG construction and the BEI construction also convey a disposal effect. In the sections that follow, I will discuss these three constructions in more detail.

3.3 The BA construction

The Chinese BA construction is “a much-discussed” (Li & Thompson, 1981, p. 463) yet “poorly understood linguistic phenomena” (Jing-Schmidt & Tao, 2009, p. 29).¹⁹

Now we first take a look at the function of the BA marker. In fact, the main function of BA is to function as an object marker, as illustrated in example (30a).

---

¹⁹ The BA construction takes different syntactic structures, but only structures related to motion events will be discussed here.
In example (30a), the subject 我 (wǒ, I) takes the role of the agent that performs the action. The direct object 水 (shuǐ, water) takes the role of the patient. The verb phrase 喝完 (hēwán, to finish drinking) describes the action and its consequences on the patient (Jing-Schmidt & Tao, 2009). Example (30b), however, is ungrammatical. To explore the reason why example (30b) is ungrammatical, Chinese linguists have taken four major approaches to explain the characteristics of the BA construction: the disposal approach, the transitivity approach, the causativity approach and the discourse dramaticity approach.

The most well known proposal describing the BA construction as the disposal function is offered by Wang (1947, 1980). In such a construction, the noun phrase (topicalized object) following BA is usually “definite, specific, or generic” (Li & Thompson, 1981), and the verb must be a transitive, anaphoric action verb (Li, 1974).

Specifically, both the speaker and the hearer must know the topicalized object. Often, such a noun phrase is marked by a demonstrative pronoun. However, if the information is shared by the speaker and the hearer in context (Li & Thompson, 1981), such as the noun phrase 水 (shuǐ, water) in example (30a), it does not have to take a
determiner. As indicated by Li and Thompson (1981), intransitive, non-anaphoric and non-action verbs cannot be used in a BA construction. Clearly, intransitive and non-anaphoric verbs cannot take a topicalized object, which consequently results in its disqualification of being used in a BA construction. Yet, the criterion of what constitutes “non-action” is more complicated. Non-action verbs, as listed in example (31), cannot handle, manipulate, deal with, or dispose a direct object.

(31) a. verbs of emotion (e.g., 爱 ài, to love)
    b. verbs of cognition (e.g., 理解 lǐjiě, to understand)
    c. verbs of perception (e.g., 看到 kàndào, to be able to see)
    d. verbs that imply no manipulation or attention to the direct object (e.g., 唱 chàng, to sing)

However, Li and Thompson (1981) argue that the concept of disposal can be inferred implicitly, during which the verbs listed above may convey a “disposal” effect, as illustrated in contrastive forms in examples (32-34).

As we can see, these “non-action” verbs in examples (32-34) can implicitly express the concept of disposal with an additional expression which, to a certain degree, creates an immaterial effect on the object (Li & Thompson, 1981). In sum, the disposal approach focuses on the effect the action verb has on the topicalized noun phrase. Nonetheless, not all Chinese linguists agree with such a proposal.

(32) a. *他把小猫爱。
    Tā bā xiǎomāo ài.
    He BA small-cat love
    (Intended meaning: He loves cats.)

20 In some cases, the noun phrase can be a specific entity that the speaker believes that the hearer knows or the speaker “has in mind but about which the hearer does not know” (Li & Thompson, 1981, p. 466).
b. 他把小猫爱得要死。
   Tā bǎ xiǎomāo ài de yào sǐ.
   He BA small-cat love POT want die
   He loves the kitten so much that he wants to die. (Li & Thompson, 1981, p. 469)

(33)  a. *他把那个问题理解。
   Tā bǎ nà ge wèntí lǐjiě.
   he BA that CLS problem understand
   (Intended meaning: He understands that problem.)

b. 他把那个问题理解得很透彻。
   Tā bǎ nà ge wèntí lǐjiě de hěn tòuchè.
   he BA that CLS problem understand very thoroughly
   He understands that problem very thoroughly.

(34)  a. *她把歌唱。
   Tā bǎ gē chàng.
   she BA song sing
   (Intended meaning: She sings.)

b. 她把歌唱得很动听。
   Tā bǎ gē chàng de hěn dòngtīng.
   she BA song sing POT very pleasant-to-listen-to
   She sings very well.

The second interpretation of the BA construction is Chao’s (1970) influential transitivity analysis. In this approach, BA is considered as a pretransitive verb in a serial verb construction. In this type of construction, BA does not carry any semantic content in relation to the action verb. Interestingly, the noun phrase following BA is definite even when being preceded by an indefinite determiner. Such a characteristics is illustrated in example (35).

(35) 她把个丈夫死了，可是不久又嫁了个丈夫。
    Tā bǎ ge zhàngfu sǐ le, kěshì bùjū yòu jià le ge zhàngfu.
    she BA CLA husband die PERF, but soon again marry PERF CLA husband
    She suffered her husband dying (on her), but before long she married another husband. (Jing-Schmidt, 2005, p. 82)
Chao (1970) argues that the action verb in the BA construction does not always carry the meaning of disposal. For example, the subject of sentence (35) is the experiencer who lacks control of the action of the topicalized object (i.e., the death of her husband) (Jing-Schmidt, 2005). Example (36) also illustrates the same point.

(36) 他把这儿的学校都进过了, 一个学校也没毕业。
*Tā bà zhèr de xuéxiào dōu jìn guo le, yī gè xuéxiào yě méi bìyè.*
He BA here ASSOC school all enter EXPE PERF, one CLA school even not graduate
He took and entered every school here, but did not graduate from any one of them. (Chao, 1970, p.344, original sentence and translation; Jing-Schmidt, 2005, glosses)

As Jing-Schmidt (2005) notes, the motion verb 进 (jìn, to enter) in example (36) cannot dispose of a school, yet the sentence in example (36) is perfectly acceptable. Chao (1970) also observes that not all motion verbs can be used in the BA construction, including 来 (lái, to come), 进 (jìn, to enter), 出 (chū, to exit) and 到 (dào, to arrive). In rare cases where these motion verbs do appear in a BA construction, such as in example (36), they do not convey the meaning of disposal.

Another observation Chao (1970) has made involves the polysyllabic nature of the second verb expression. When the pretransitive BA “advances the position of the object”, the second verb elaborates and provides more information than what can be conveyed in a single syllable (Chao, 1970, p. 346). We can see this feature from sentences in example (37).

(37)  a. 我恨这个人。
*Wǒ hèn zhè ge rén.*
I hate this CLA person
I hate this person.
Chao (1970) explains that the surface polysyllabic nature of the second verb manifests the necessity of supplying additional information to the second verb. A minimum addition is an aspect marker such as the durative 着 (zhe, ZHE) or the perfective 了 (le). The additional element following the second verb helps intensify the meaning conveyed in the verb. Using example (37c) to illustrate, the modal particle 了 (le) actually takes the hatred emotion to a higher intensity.\(^{21}\) Another possible formation of the polysyllabic verb phrase is to use a complement. In particular, predicative complements, resultative complements and potential complements can all fit in this position. Example (38) shows the use of a resultative complement in a BA construction.

(38) 我把球踢走了。
    Wǒ bā qiú tī zǒu le.
    I BA ball kick walk CRS
    I kicked away the ball.

In example (38), the resultative complement 走 (zǒu, to walk/to move away) results from the subject’s action described by the main verb 踢 (tī, to kick). Specifically, the

\(^{21}\) In a real context, matching intonation and accompanying hand gestures could help to signify the strong emotion carried in the sentence (Jing-Schmidt, 2005).
complement 走 (zǒu, to walk/to move away) conveys what happened to the object 球 (qiú, ball). In other words, what happened to the object is a result of the subject’s action.

Meanwhile, another way to form the polysyllabic verb phrase is to use an adverb-verb combination. For example, 把酒慢慢地喝 (bǎ jiǔ mànman de hē, BA-wine-slowly-drink, to slowly drink wine) is acceptable, but 把酒喝 (bǎ jiǔ hē, BA-wine-drink) is not. The combination of the adverb 慢慢地 (mànman de, slowly) with the verb 喝 (hē, to drink) makes the BA construction acceptable (Jing-Schmidt, 2005).

Chao’s (1970) transitivity analysis focuses on the descriptions of semantic elements within a BA sentence, which does not conflict with the disposal approach. The descriptions given in the transitivity analysis could also be applied to the sentences explained by the disposal approach. In general, the main difference between these two approaches lies in whether or not the motivation of using a BA construction is provided.

A third major interpretation of BA is the causativity approach, which was first raised by Chappell (1991), focusing on the unique intransitive BA construction. The BA construction discussed in this approach differs from those mentioned in support of the previous approaches in that it lacks an agent in the sentence-initial position, as illustrated in example (39).

(39) 把我累死了。
    Bā wǒ lèi sǐ le.
    BA I tire die ASP
    (It) made me extremely tired.

Example (39) lacks an agent in the sentence-initial position, and the verb 累 (lèi, to tire) is intransitive. The topicalized noun phrase 我 (wǒ, I) is the subject instead of the direct
object of the main verb. This type of sentence employs two typical structures: (a) “BA + Subject + Verb” (BA + S + V), as seen in example (39); and (b) Topic + BA + Subject + Verb” (T + BA + S + V), such as adding a topic 搬东西 (bān dōngxī, to move things) to the initial position of example (39). In both cases, the BA-noun-phrase is the experiencer.

Focusing on the “BA + S + V” structure, Chappell (1991) observes three subtypes of this structure under the notion of causativity. First, the intransitive BA describes the inattentive causation of an unpleasant feeling originating from the experiencer’s own actions (e.g., 站这儿把我站乏了 zhàn zhèr bā wǒ zhàn fá le, stand-here-BA-I-stand-tire-ASP, It made me tired from standing here). Second, it encodes inattentive causation of a temporary change of state the experiencer has gone through, such as in example (39).

Third, this structure describes the causation of the locative change for a person (e.g., 把他摔了个四脚朝天 bā tā shuāi le sìjiàocháotiān, BA-him-fall-ASP-CLA-four-foot-towards-sky, It made him fall sprawling). The focus of the causativity approach is thus on the intransitive BA construction, which does not fit in the descriptions of DT motion events. The reason for this is simple: all motion verbs in expressions of DT caused motion events must be transitive.

Finally, the fourth interpretation of the BA construction is the discourse dramaticity approach, proposed by Jing-Schmidt (2005). This approach defines the use of BA construction as required for dramatic discourse. This approach differs from the previous ones in that it focuses on the speakers’ communicative goals. More specifically, it analyzes the syntactic functions of the BA construction at the discourse level, whereas the previous approaches discuss it at the sentence level. Below I will explain the specifics of this approach.
Jing-Schmidt (2005) claims that the BA and non-BA constructions are different sentence types that correspond to different speech acts, showing consistency with Sadock and Zwicky’s (1985) claim that grammatical structures coincide with speech acts. In this approach, the BA construction is differentiated from the regular SVO sentences and “any order-entailed contrastive constructions” such as OSV and SOV sentences (Jing-Schmidt, 2005, p. 114). In her proposal, the BA construction occurs in high dramatic discourse, and the non-BA constructions occur in low dramatic discourse. Consequently, the BA construction is taken as a communication strategy to draw the listener’s attention to the information being conveyed, as shown in example (40).

(40)  

a. 妈，给我点钱！
   
Mā, gěi wǒ diàn qián!
   
mom give I bit money
   
Mom, give me some money.

b. 妈，把钱给我！
   
Mā, bǎ qián gěi wǒ!
   
mom, BA money give me
   
Mom, give me the money! (Jing-Schmidt, 2005, p. 119)

Sentence (40a) conveys the speaker’s demand for an unspecific amount of money, whereas (40b) delivers a clear message to demand a definite entity (e.g., the amount of money or the physical money). The BA-NP “money” in (40b) is an entity that both the hearer and the speaker know about, but it is unspecific in (40a). Thus, the discourse dramaticity approach focuses on the use of the BA construction in discourse. Such an approach does not fit in the expressions of DT caused motion events discussed in this dissertation. As will be explained in greater detail in Chapter 5, the expressions elicited in this dissertation are taken as individual sentences instead of being placed in discourse.
3.4 The JIANG construction

The JIANG construction in Chinese is also known as a disposal construction, just like its synonymous form BA. These two constructions differ only in register (Jing-Schmidt & Tao, 2009). Much of the research on the differences between these two constructions has generally taken a historical perspective. In particular, the morpheme JIANG and the morpheme BA have co-existed in the disposal construction since the eighth century AD (Wang, 1980). Shen (2002) suggests that both BA and JIANG initially emerged to express subjectivity. However, since the early twentieth century, JIANG has been gradually losing its subjective sense. It is hypothesized that BA would go through similar weakening process in expressing subjectivity.\(^{22}\)

In terms of the actual use of the BA construction and the JIANG construction in Mandarin Chinese, Tao (1999) and Zhang (2001) examined distributions of these two constructions in written discourse. Their results show that the JIANG construction is more commonly used when writing procedures such as recipes and in scientific discourse, while the BA construction is more frequently used in conversations. Furthermore, a recent corpus analysis done by Jing-Schmidt and Tao (2009) shows that the BA construction is predominantly used in spontaneous conversations, while it occurs almost three times as often as the JIANG construction in written corpus. Conversely, according to Tao (1999, 2007), the JIANG construction occurs in situations where a sense of antiquity needs to be expressed, such as in adventure and martial arts fictions, or in “procedural discourse”, such as describing skills, trades or hobbies. Example (41)

\(^{22}\) Jing-Schmidt (2005) claims that BA has been employed to express subjectivity and emotionality (“dramaticity” in her terms) since the eighteenth century. Since then, JIANG has mainly been used in writing as a rhetorical variant.
The JIANG construction illustrates the use of the JIANG construction in martial arts fiction, and example (42) illustrates such a use in a recipe.

(41) 转眼之间，又有四支长矛从两侧刺来，
zhuan ye zhongjian, you you si zhi changmiao cong lian ce ci lai
in-a-split-second again exist four CLA long spear from two side stab come
In a split-second, four long spears again attack from both sides,

张无忌屠龙刀一挥，将四支长矛斩断。
Zhang Wuji tu longdao yi hui, jiang si zhi chang mao zhan duan.
PN dragon-slaughtering-knife once swing, JIANG four CLA long spear cut Broke
Zhang Wuji quickly swung his dragon-slaughtering knife, broke all four of the long spears. (excerpt from Jing-Schmidt & Tao, 2009, p. 45, tones added here)

(42) 将洗净晾干的花生放入高压锅内，盖紧后置火上 5 分钟，
jiang xi jing liangg an de huasheng jiang ru gao yaguo nei, gai jin hou zhi huo shang wu fenzhong.
JIANG wash clean clean dry ASSO peanut put in presser cooker inside, cover tight after put fire-up
Put the washed and dried peanuts in a pressure cooker, cover the cooker tightly and heat it for 5 minutes. (excerpt from Jing-Schmidt & Tao, 2009, p.46, tones added here)

As noted by Tao (1999) and Jing-Schmidt and Tao (2009), the JIANG construction carries an antiquated flavor that is often enhanced by literal and formal lexical and syntactic elements. For instance, example (38) also consists of literal and formal lexical (e.g., 转眼之间 zhuan ye zhongjian, in a split second, in a twinkling) and syntax items (e.g., using 来 (lai, to come) instead of the more informal 过来 (guolai, to come) as a resultative complement to the verb 刺 (ci, to stab).

Jing-Schmidt and Tao (2009) assert that the BA construction is associated with subjectivity and the JIANG construction with objectivity. In particular, the frequent use of the BA construction in written Chinese shows human beings’ general tendency to
express subjectivity and emotionality. The strong association between the JIANG construction and “procedural discourse” express objectivity. It is clear that, for native Chinese speakers, the use of BA and JIANG reflects different rhetorical styles.

3.5 The Chinese BEI construction

The Chinese BEI construction is the Chinese passive construction. The linear arrangement for this construction is as follows:

(43) NP1 + BEI + NP2 + V
饭被狗吃了。
Fàn bèi gǒu chī le.
rice BEI dog eat PERF/CRS
The rice got eaten by the dog.

In example (43), NP1, the entity that is being affected by the action, takes the sentence-initial position. The passive marker BEI follows NP1 and introduces NP2, which is the agent of the action. The verb is placed after NP2. This is a typical passive structure in Mandarin Chinese.

There are two major functions of the BEI construction: disposal and adversity (Li & Thompson, 1981). Just as the BA construction and the JIANG construction, this construction expresses “disposal”, but it is mainly used to describe adverse situations.

23 Jing-Schmidt and Tao (2009) note that the BA construction is also predominantly used in humor, because the objective nature of the JIANG construction doesn’t fit in amusing situations, while the subjective and emotional nature of the BA construction helps create a sense of absurdity.

24 There are other variations of the BEI construction, such as the omission of NP2.

25 The Chinese preposition BEI is always translated as an equivalent of “by”, which can be applied to “verbs of favorable meanings” in written translations (p. 703). Gradually, this written language “translation” influence has extended to speakers’ daily speech (Chao, 1968). Because of this, the BEI construction increasingly does not express adversity due to the influence of Indo-European languages such as English (Li & Thompson, 1981).
Example (43) clearly shows what happened to the rice (i.e., function of disposal). It also carries a negative intonation, implying that it is not a pleasant thing that the dog ate the rice (i.e., an adverse situation).

Li and Thompson (1981) further explain that this construction often carries an “unfortunate or pejorative” message when verbs of perception and cognition are used (p.495). To the contrary, regular SVO sentences do not carry such a negative meaning with verbs of this kind (Li & Thompson, 1981), as shown in example (44). Example (44a) does not carry an adverse intonation, whereas example (44b) suggests that you two talking should not have been seen by me or it is a bad thing that I have seen you two talking with each other.

(44)  a. 我看见你们俩说话了。
       Wǒ kànjiàn nǐmen liǎ shuōhuà le.
       I see you two speak CRS
       I saw you two talking (with each other).

       b. 你们俩说话被我看见了。
       Nǐmen liǎ shuōhuà bèi wǒ kànjiàn le.
       you two speak BEI I see CRS
       You two talking was seen by me.

Furthermore, the Chinese BEI construction is not equivalent to the English passive. In fact, the BEI construction is used much less frequently in Chinese than the passive in Indo-European languages due to the predominant use of topic-comment structure and the constrain of being adverse (Li & Thompson, 1981), as shown in example (45).

(45)  a. 我的书已经出版了。
       Wǒ de shū yǐjīng chūbǎn le.
       I ASSOC book already publish CRS
       My book has already been published.
b. *我的书已经被出版了。  
*Wǒ de shū yǐjīng bèi chūbǎn le.*
(I ASSOC book already BEI publish CRS  
(Intended meaning: My book has been published.)

The sentence in example (45b) is ungrammatical. Comparing examples (45a) and (45b), we can see that the former is a topic-comment sentence in which the NP in the sentence-initial position is the topic of the sentence. Further, the verb 出版 (chūbǎn, to publish) is not a verb of adversity. Thus, transforming example (45a) into a passive sentence like (45b) is not appropriate, showing the constraints involved when using the passive BEI construction in Chinese.

In terms of disposal, the BEI construction expresses disposal in the same manner as the BA construction and the JIANG construction. Other than the two restrictions discussed earlier (i.e., topic-prominence and adversity), the verbs in the BEI construction must deal with, handle or manipulate the object in a certain way. A notable difference between the BEI construction and the BA/JIANG constructions are the applicability of command to the sentence-initial NP. More specifically, the BA/JIANG constructions can express a command because the NP in the sentence-initial position is the agent of the action, whilst the NP in the sentence-initial position in the BEI construction is the patient of the action, such that what happens is out of the patient’s control. See examples (46) below.

(46)  a. 你被人踢了。  
*Nǐ bèi rén tī le.*
you BEI person kick PERF  
You were kicked by somebody.
b. 你別被人踢了。
*Nǐ bié bèi rén tī le.*
you don’t BEI person kick PERF
Don’t be kicked by somebody.

Example (46a) cannot convey a command. Only in a negative sentence can the BEI construction express a command, as shown in (46b). Such a difference, however, would not influence the analysis of the expressions of motion events in this dissertation, because the data collected for this dissertation does not involve any commands. Nonetheless, the characteristics of adversity and disposal can help explain why speakers choose to use the BEI construction to describe DT caused motion events. In other words, the selection of such a construction shows that the DT caused motion events are perceived as conveying an adverse or disposal effect by its speakers.

### 3.6 Disposal construction and expressions of DT caused motion events

Among the four approaches mentioned above for the interpretation of the disposal construction, the dispositional approach fits the best in explaining expressions of DT caused motion events. As mentioned in the previous section, Chao’s (1970) transitivity analysis focuses on the semantic relations among elements within a sentence, which does not informatively explain the motivation of using a disposal construction. Chappell’s (1991) causativity approach focuses on the unique intransitive disposal constructions, which cannot explain the transitive disposal construction used in expressing DT caused motion events. Jing-Schmidt’s (2005) discourse dramaticity approach, meanwhile, examines the disposal constructions in contexts that fail to apply to the non-contextualized expressions of DT motion events discussed in this dissertation. In fact, the transitivity analysis does
not conflict with the disposal approach in explaining the semantic relations in the BA construction. In particular, Chao’s (1970) explanation on the surface polysyllabic nature of the second verb is congruent with the inclusion of the RVC in a disposal construction. However, the transitivity analysis focuses on the BA construction, stating that the pretransitive BA topicalizes the object, which cannot explain the BEI construction. The DT caused motion events investigated in this dissertation involve the use of the BA, JIANG and BEI constructions, all of which share an important similarity: conveying a disposal effect.

As explained in Chapter 1 (see section 1.2), each DT caused motion event under discussion possesses three major characteristics. First, it involves two entities: an Agent and an Object. Second, the Agent and the Object have a causer-causee relationship. In particular, the Agent exerts an external force on the Object, which causes the Object to move from the original locative point to another in space. Third, the Agent’s continued action is not necessary for the Object’s motion. Specifically, the Agent stays at the original place throughout the course of exerting an external force on the Object, whereas the Object changes its location to a different locative point due to the external force. To accurately encode these three major components, the grammatical construction employed must meet the following requirements: (a) it must consist of an agent (i.e., the Agent of the motion event) and a patient (i.e., the Object of the motion event); (b) it must include a transitive action verb; and (c) it must express a disposal effect by showing the trajectory of the patient. Below I will illustrate how each of the three constructions fulfills these three requirements. While describing a DT caused motion event, the BA or the JIANG construction tropicalizes the Object followed by a RVC (i.e., expressing Manner and
Path) as illustrated in examples (47) and (48). The BEI construction resembles these two constructions with one difference: it uses the passive voice instead of an active voice. Example (49) illustrates how the same DT caused motion event is expressed using the BEI construction.

These three constructions meet the requirements for expressing DT caused motion events in the following ways. First, all the three constructions can consist of an agent and a patient. Second, they can include a transitive action verb. Third, they can employ a RVC to express the trajectory (i.e., Path) of the patient.

(47) 小李把球踢进了游泳池。  
Lee BA ball kick-enter PERF swimming-pool  
Lee kicked the ball into the swimming pool.

(48) 小李将球踢进了游泳池。  
Lee JIANG ball kick-enter PERF swimming-pool  
Lee kicked the ball into the swimming pool.

(49) 球被小李踢进了游泳池。  
ball BEI Lee kick-enter PERF swimming-pool  
The ball was kicked into the swimming pool by Lee.

In a RVC in Chinese, the verb, i.e., V1, denotes the main action and the complement, i.e., V2, denotes the result of the action employed by V1. Clearly, in

---

26 Sometimes the agent or the patient may not be overt.
27 In Chao’s (1970) transitivity approach, the action verb may be intransitive without carrying the meaning of disposal. For example, 他把个狗跑了 (tā bā gé gǒu pǎo le, he-BA-CLA-dog-run-PERF, He experienced his dog running away from him.) The action verb 跑 (pǎo, to run) is intransitive. However, the focus of this dissertation is on sentences with transitive verbs.
examples (47-49), the Object 球 (qiú, ball) moves from the outside of the swimming pool to the inside of the swimming pool as a result of the Agent Lee’s kicking. In other words, the Agent Lee causes the Object 球 (qiú, ball) to move into the Ground 游泳池 (yóuyǒngchí, swimming pool). In the RVC 踢进 (tī-jìn, to kick-enter), 踢 (tī, to kick) expresses the Manner and the Action of the Agent as well as the Cause of the action, while 进 (jìn, to enter) depicts the Path of the Object.

The disposal function in Chinese requires a specific action to be fulfilled, which matches up well with the occurrence of a DT caused motion event. Specifically, the Agent handles the direct Object in such a way that it becomes what the RVC describes in a disposal construction (Wang, 1985; Hsueh, 1989).

Furthermore, the RVC to a certain degree shares similarities with the way English encodes motion events. Consider example (50) and examples (47-49). As we can see, examples (47), (48) and (49) in Chinese and example (50) in English are similar in the following ways: (a) both Agent and Object are encoded; (b) there is a causer and a causee, with the Agent’s action that causes the Object to change its location; (c) Cause and Manner of the Agent is encoded in the action verb; and (d) Path of the object is encoded in the constituent that follows the action verb.

(50) Lee kicked [Cause/Manner] the ball [Object] into [Path] the swimming pool.

Obviously, in terms of expressing DT caused motion events, Chinese and English resemble each other in the following two ways: (a) both of them include the same basic information components; and (b) the two major information components (i.e., Manner
and Path) are encoded by the same structural elements (i.e., the action verb and the semantic constituent following it). Now an important question is whether native speakers of Chinese and native speakers of English would employ similar expressions in actual language use. This question will be answered in Chapter 4.

3.7 Summary

In this chapter, I first defined grammaticalization and summarized the grammaticalization process of the disposal construction in Chinese. Following that, I discussed the characteristics of the BA construction and presented the four main theoretical interpretations of this construction, i.e., the disposal approach, the transitivity approach, the causativity approach and the discourse dramaticity approach. Then, I talked about the JIANG construction and the BEI construction with a focus on the similarities and differences among the three constructions. Finally, I discussed how the disposal function fits with the expressions of DT caused motion events in Chinese.
CHAPTER 4. THINKING-FOR-SPEAKING AND THE ACQUISITION OF MOTION EVENTS

4.1 Introduction

From the discussion in Chapter 1 and Chapter 2, we know that natural languages can express motion events using different encoding strategies. Speakers of a particular language gradually develop habitual ways of perceiving these events. Slobin (1987) proposed a model for this particular way of perceiving things called thinking-for-speaking. In this chapter, I first discuss the term “thinking-for-speaking”. Then, I present research findings on the acquisition of motion events in relation to thinking-for-speaking. Finally, I discuss how this theoretical framework helps to explain potential problems that English learners of Chinese have when learning DT caused motion events in Chinese.

4.2 Thinking-for-speaking

Slobin (1987) proposed that thinking-for-speaking is a particular form of thought for communication. It was originally proposed for the study of child L1 acquisition and cross-linguistic research among various languages (e.g., Berman & Slobin, 1994). However, its relevance for SLA has provoked interest in recent years (e.g., Cadierno, 2004; Cadierno & Ruiz, 2006). For different purposes, this model has been recast as rethinking-for-speaking and thinking-for-potential-speaking. The former attends to the needs of L2 learners when relearning a new language, as characterized by Robinson and Ellis (2008). The latter emphasizes the role that thinking plays in subsequent retrieval for
linguistic encoding (Marian & Kaushanskaya, forthcoming). However, these three terms express the same fundamental idea. In this dissertation, only the term thinking-for-speaking will be used.

There are many thoughts that go on in our minds, and thinking-for-speaking is a particular form of thought that is activated for articulation. Slobin (1996a) put it as follows:

[The] activity of thinking takes on a particular quality when it is employed in the activity of speaking. In the evanescent time frame of constructing utterances in discourse one fits one’s thoughts into available linguistic frames. “Thinking for speaking” involves picking those characteristics of objects and events that (a) fit some conceptualization of the event, and (b) are readily encodable in the language. (Slobin, 1996a, p. 76)

Clearly, thinking-for-speaking has two main functions. First, it characterizes certain conceptual ideas of the events being observed. Second, the concept is promptly encoded in the language (Slobin, 1987). Boas (1938) suggested that a “complete concept” exists in the minds of people who speak different languages.

Presumably, thinking-for-speaking only deals with part of the complete concept. When children acquire a specific worldview for their native language, they acquire this L1-specific thinking-for-speaking, which most likely will affect the acquisition of a L2 (Slobin, 1993). Thus, learners must learn to attend to different details of events based on the specific resources provided by the language. In other words, they need to learn to conceptualize events within the range of the language’s grammatical and lexical categories while paying attention to events and motor behaviors that simultaneously occur with speech (Slobin, 1987, 1996a). This is because the grammatical and lexical
categories in a language influence not only what the speakers attend to but also what they linguistically encode. In particular, Slobin (1996a) put it as follows:

[The] obligatory grammatical morphemes of a language may do more than simply direct attention-while-speaking to their semantic content. This directed attention may have consequences for what is said and unsaid in any particular language. (pp. 84-85)

Verbalized events thus manifest our perception of the world, but they are in turn constrained by the available options for the language we speak. For example, in English, Path is often described, but resultant locative states are often omitted. Slobin (1996a) has found that Spanish-speaking children use relative clauses more frequently than do English-speaking children for the purpose of describing locative and circumstantial information. English-speaking children, however, do not describe static locative information as frequently. Slobin (1996a) proposed that these qualitatively different linguistic patterns reflect different ways of thinking-for-speaking, which he describes as “different online organization of the flow of information and attention to particular details that receive linguistic expression” (p.78). From this description of thinking-for-speaking, we can see it involves two factors. First, whether or not speakers of different languages perceive the same event in a similar fashion. And second, whether or not these speakers describe the same event similarly.

Papafragou, Hulbert, and Trueswell (2008) investigated whether or not differences between two typologically different languages, Greek (V-framed) and English (S-framed), influence the ways by which people attend to different components of motion events. Using eye-tracking, they compared eye movements of L1 Greek and L1 English speakers when allocating attention as they viewed motion events in two situations: (a)
preparing verbal descriptions of motion events; and (b) memorizing motion events without linguistic encoding. The results showed that, in the verbal description task, the eyes of both groups of speakers focused on event components that were typically encoded in their native languages (i.e., Path for Greek speakers and Manner for English speakers). However, the two groups did not differ significantly in the non-linguistic memorization task. As a result, Papafragou et al. (2008) conclude that language influences speakers’ attention allocation only in linguistic tasks. This is to say that the differences or similarities begin from the moment that speakers prepare for linguistic encoding. Such an opinion could be explained from the planning of speech acts. More specifically, while planning verbal expressions, our mental processes go through two important sub-stages: macro-planning and micro-planning (Levelt, 1989; von Stutterheim & Nüse, 2003; Jarvis, 2011). At the macro-planning stage, the speaker makes decisions on what information is to be included to achieve the intended communication goals. At the micro-planning stage, the speaker organizes the information in a way that is compatible with the available structures for the language being used.

When acquiring a typologically similar language, the learner presumably should not have difficulty at the macro-planning stage. However, the available grammatical sources in another language may create problems for learners. In such cases, the speaker should be able to include all necessary information, but it is possible that differences in grammatical structures could become an issue. As noted in Chapter 1 (see section 1.2), existing L2 studies in this regard have focused on the acquisition of a typologically different language. I will present findings from this line of research in the next section and will discuss their implications for learning a typologically similar L2.
4.3 Acquisition of L2 motion events

Existing studies that employ thinking-for-speaking as a theoretical framework have examined the difficulties that L2 learners have in expressing motion events in a typologically different L2. The results have been mixed so far. On the one hand, predictable L1 thinking-for-speaking has been detected in the acquisition of L2 motion events. On the other hand, such L1-specific thinking-for-speaking does not seem to influence the acquisition of a typologically different L2. For example, three studies have examined the acquisition of a V-framed language, Spanish, with two S-framed L1s, Danish and English (Cadierno, 2004; Cadierno & Ruiz, 2006; Navarro & Nicoladis, 2005). With a focus on “the semantic component of path and ground”, these studies have shown that L1 Danish speakers used more “ground adjuncts accompanying motion verbs” in Spanish, showing a clear cross-linguistic influence from their L1 (Cadierno, 2008, p. 261). On the other hand, Danish speakers of Spanish did not use event conflation in Spanish even though such conflation was common in their L1, showing no influence of L1 thinking-for-speaking. Similarly, the results of another study (Cadierno & Ruiz, 2006) did not show a significant difference in participants’ production in Spanish among three different groups: native speakers of Spanish (V-framed), adult Danish (S-framed) learners of Spanish and adult Italian (V-framed) learners of Spanish.

Chinese learners’ responses when expressing directional motion events. Her results show that English learners of Chinese had difficulties when segmenting Path constituents of motion events. Below I will explain in detail.

As we know, Path constituents can be used consecutively in English. For example, in the sentence “He fell down into the pool”, the Path constituents down and into are used consecutively. In Chinese, only independent verbs can be used in a consecutive way to describe sequential events, as illustrated in example (51).

(51) 我买票进去。
       Wǒ mǎi piào jìn-qu.
       I buy ticket enter-go
       I bought a ticket and went in. / I bought a ticket to go in.
       (Li & Thompson, 1981, p. 595)

In example (51), the two verb phrases 买票 (mǎipiào, to buy ticket) and 进去 (jinqù, to enter-go) are used consecutively in a serial verb construction. However, Path constituents cannot be used consecutively in Chinese. In cases where a Path of a motion event changes consecutively, native Chinese speakers would opt to use two separate RVCs to express the consecutive movements (Wu, 2011). This shows a particular Chinese thinking-for-speaking pattern. However, the English learners of Chinese followed their L1 thinking-for-speaking and used Path constituents consecutively in Chinese. Example (52) is a typical sentence made by L2 Chinese learners to express the change of a Path in one motion event.

(52) *小男孩掉下进来。
       Xiǎo nánhái diào-xià jìn-lái.
       little boy fall-descend enter-come
[Intended meaning: The little boy falls down (from the cliff) and falls into a stream. Sentence from Wu (2011, p. 442), Chinese characters, gloss and translation were added.]

Clearly, in example (52), the Path constituents 下 (xià, to descend), 进 (jìn, to enter) and 来 (lái, to come) are used consecutively by the L2 learners, which is not acceptable in Chinese. According to Wu (2011), this is an indication of cross-linguistic influence between two typologically different languages, English (S-framed) and Chinese (E-framed). In other words, the learners’ L1 thinking-for-speaking affected their L2 Chinese acquisition of motion events.

4.4 Thinking-for-speaking in two typologically similar languages

While learning a L2, learners may never free themselves from the influence of their L1 (Odlin, 2005). This L1 influence on L2 acquisition can be manifested at various levels, such as form, meaning, function (Ortega, 2009) and concept (Odlin, 2005). Thinking-for-speaking in SLA is a paradigm that investigates L2 learners’ acquisition at the concept level. The majority of studies along this line have looked into the influence of preserved L1 Thinking-for-speaking on L2 event acquisition.  

28 Few studies (e.g., Brown & Gullberg, 2011) have tackled bidirectional cross-linguistic influence in event conceptualization. This line of research takes the position that the L1 conceptual system is not a mobile entity but may also be influenced by learners’ L2 conceptual system. Even at relatively low proficiency levels, this bidirectional process may exist; that is, while L1 thinking-for-speaking guides the learners’ L2 construal, their L2 “may subtly and simultaneously shape construal in the L1 within an individual learner” (Brown & Bullberg, 2011, p. 80).
typologically different L2. More specifically, two major questions have been explored: (a) whether or not the major information components of an event (e.g., Path, Manner and Ground) are included; and (b) whether or not proper grammatical means are employed to express the major information components (e.g., how to express a Path that changes consecutively). The question of interest here is whether or not such problems also exist in the learning of a typologically similar L2.

In Chapter 1 (see section 1.2), I discussed that Chinese would display S-framed properties in describing DT caused motion events, in which the Chinese disposal construction is employed. If so, both Chinese and English are S-framed when describing DT caused motion events. However, a key difference between Chinese and English is that English does not have a grammatical structure to encode the concept of disposal. Berman and Slobin (1994) assert that the habitual use of linguistic forms directs speakers’ attention to the functions of these forms, which causes the events being expressed to become more salient at the conceptual level. More specifically, first, the learners must learn to attend to different details of motion events in comprehension and production (e.g., more attention to Path versus Manner). Second, they must learn how to draw upon the appropriate grammatical and lexical resources to express what they intend to express in L2. During such a process, the L2 learners’ existing L1 thinking-for-speaking patterns may turn out to be resistant to reconstruction while acquiring new L2 Thinking-for-speaking patterns (Slobin, 1996a).

When speakers of one language do not linguistically express a concept in a way that speakers of another language do, these two groups of speakers may differ in whether the major information components of the event are associated with such a concept.
Employing the two sub-stages for planning verbal expressions, speakers must decide which major information components of the events are to be included. At the micro-planning stage, they must employ a grammatical structure that expresses the disposal effect in Chinese. In fact, such a disposal effect could be interpreted as an additional component at the macro-planning level. Furthermore, a more important concern is to understand why such a disposal effect must be included when describing DT caused motion events. In other words, how is the disposal effect associated with the major information components of a DT caused motion event, such as Cause, Manner and Path?

Chapter 5 will present results from an empirical study showing the status of advanced L2 Chinese learners’ acquisition of the disposal concept when describing DT caused motion events. These results will help us answer the questions raised in this chapter.

4.5 Summary

In this chapter, I first discussed the thinking-for-speaking model. Then, I presented research findings concerning the acquisition of motion events related to thinking-for-speaking. Finally, I discussed how such a theoretical framework can help to explain potential problems that English learners of Chinese have when learning DT caused motion events in Chinese.
CHAPTER 5. A STUDY ON DIFFERENT-TRAJECTORY CAUSED MOTION EVENTS

5.1 Introduction

In this chapter, I will report the results of a study on the expression of DT caused motion events by three groups of participants: native English speakers (speaking in English), native Chinese speakers (in Chinese) and advanced L2 Chinese learners (in Chinese). It was predicted that the native Chinese speakers’ production would only display S-framed properties in describing DT caused motion events. Furthermore, it was predicted that the advanced L2 learners would include the major information components (i.e., Cause, Path and Manner) in Chinese, but that they would not be able to employ the disposal construction in a similar fashion as the native Chinese speakers would.

Next, I will explain the stimuli, participants, procedure and coding system for the study. The three groups of participants individually watched videos that depicted DT caused motion events and verbally described each video in the designated language (i.e., Chinese for native Chinese speakers and advanced L2 learners and English for native English speakers). To avoid any theoretical bias, the results of the study were coded twice: once by treating V2 as satellites (per Talmy, 1985, 2000) and once by treating V2 as verbs (per Slobin, 2004, 2006). The results were further divided into data concerning two sub-categories of motion event expressions: boundary-crossing and non-boundary-crossing. To show how the most essential information component (i.e., Path) is expressed in Chinese, I will also present the sentence structures used in the Chinese data.
5.2 Research questions

One question this dissertation addresses is whether Chinese is V-framed, S-framed, E-framed, or simultaneously V-framed and S-framed when describing DT caused motion events. Assuming that English-speaking L2 Chinese learners would encounter difficulties when describing DT caused motion events, a second question is how advanced L2 learners would encode this type of motion event in Chinese. In this dissertation, the questions of interest are: Does Chinese display S-framed properties when describing DT caused motion events? In particular, would native Chinese speakers predominantly use the disposal construction in their verbal descriptions of DT caused motion events? If Chinese only displays S-framed properties, as is the case for English, would advanced L2 Chinese learners have difficulties when describing DT caused motion events? In particular, would they convey the concept of disposal in their descriptions?

The hypotheses were as follows: (1) Chinese would only display S-framed properties in describing DT caused motion events. The native Chinese speakers would predominantly use the disposal construction in their descriptions. (2) The advanced L2 learners would include the major information components (i.e., Cause, Path and Manner) in Chinese similar to the native Chinese speakers. However, they would not be able to employ the disposal construction in a similar fashion.

5.3 Stimuli

An effective way to investigate thinking-for-speaking is to compare how speakers of different languages describe the same events (Slobin, 1996a). This can be applied to the investigation of both L1 and L2 studies. In this connection, picture books and
cartoons have often been used. For example, Mayer’s (1969) picture book “Frog, Where are you?” was used by Slobin and his fellow researchers at UC Berkeley to examine a wide range of conceptual domains including temporal and spatial relations (Slobin, 1996a). Another popular item used for stimuli is the Warner Brothers’ cartoon “Canary Row”, which has been used by the McNeill Gesture Lab at the University of Chicago for gestural studies. Recent studies have also used cartoons (e.g., Ji, et al., 2011).

This dissertation used videos as stimuli for the following two reasons: (a) motion events are best illustrated by motion pictures instead of by static images; and (b) the use of videos with a real person as Agent ensures that the motion events depicted are natural to participants. This is especially important when it comes to the Manner of the Object (e.g., spinning, flying or sliding). The videos used in this dissertation were carefully designed and edited to fulfill the purposes of the study.

There were a total of thirty short videos, consisting of twenty-four test items and six filler items. Each video lasted two to ten seconds, depicting the Agent (i.e., an adult man named Lee) who caused an object (e.g., a ball) to move from one location to another by an external force (e.g., pushing or kicking). While the object was dislocated from one point to another, the Agent stayed in the same location. In all of the test videos, the Agent performed one of the following three actions: throwing, pushing or kicking. Meanwhile, the Object involved in one of three types of Manners: rolling, flying or spinning. The Paths followed by the Object followed one of four schemas: (a) Up schema (Figure moves along a plane and up to point); (b) Down schema (Figure moves along a plane and down to a point); (c) Across schema (Figure crosses a plane); and (d) Into schema (Figure moves into a volume). The Up schema and the Down schema share the same
characteristics except that the directions of the Figure’s movements are opposite in relation to the Ground. The test videos consisted of four motion events for the *Up schema* and four motion events for the *Down schema*. The *Up schema* videos depicted that the Figure (Agent) causing the Object to move from left to right from the viewer’s perspective. The *Down schema* videos depicted the Figure causing the Object to move from right to left from the viewer’s perspective. The *Up schema* and the *Down schema* essentially belong to the same event type because both involve the Figure moving along a vertical axis.\(^{29}\)

The four schemas included in this dissertation have covered all possible schemas based on Talmy’s (2000) categorization of Ground. Specifically, all physical objects (e.g., Ground) can be idealized into the following four categories: a point (zero-dimensional), a line (one-dimensional), a plane (two-dimensional), and a volume (three-dimensional) (Talmy, 2000). For example, the use of the English preposition *to* indicates that the Ground is a point, but the use of *in* indicates that the Ground is abstracted as a volume no matter what the physical object really looks like. When we say “she ran to the building”, *the building* is abstracted as a point in relation to where the Figure *she* stops. When we say “he jumped into a pool”, *a pool* is perceived as a volume (a container) with respect to where the Figure *he* finally ends. Among the four categories, each *Up schema* or *Down schema* can be abstracted as a line (one-dimensional); each *Across schema* can be abstracted as a plane (two-dimensional); and each *Into schema* can be abstracted as a volume (three-dimensional). Since the Figure would eventually arrive at a final point in

\(^{29}\) Using Talmy’s (2000) words, either *Up schema* or *Down schema* can be idealized as a one-dimensional line.
all of the schemas mentioned above, the stimuli used in this dissertation cover all four possible schemas based on Talmy’s (2000) categorization.

There were a total of eight motion events for the *Across schema* and for the *Into schema*, respectively. Four of the eight motion events in each of these two schemas depicted that the Agent causing the Object to move from left to right from the viewer’s point of view. The other four motion events in each of the two schemas depicted the Agent causing the Object to move from right to left from the viewer’s point of view. The reason for balancing such movements from the viewers’ point of view (i.e., left and right) was to eliminate any possibility of perception bias when viewing motion events involving different egocentric directions. The thirty videos, including the test videos and the filler videos, were arranged in two pseudorandom lists for this dissertation.

### 5.4 Participants

A total of 45 adult participants, with 15 participants in each of the three groups, were recruited for the present study. These groups included a native English speaker group, a native Chinese speaker group and an advanced Chinese learner group with English as their native language. The participants in the native English speakers group were mostly students at the University of Hawaii in the United States with a mean age around 22. They all had limited exposure to foreign languages, and none of them were able to speak another language fluently. The participants in the native Chinese speaker group were students at the South-Central University of Nationalities in China with a mean age of 24. English is a required subject in the school system in China, but none of the participants had been to an English speaking country. Fourteen of them spoke another
Chinese dialect, but Mandarin Chinese was the dominant language for all of the participants at the time of the data collection. The self-reported data showed that their ability to speak Mandarin Chinese was rated at an average of 3.93 on a 0-5 scale, with 0 as “can’t speak” and 5 as “speak perfectly”. The self-reported data also showed that the grammatical similarity between their Chinese dialects and Mandarin Chinese was on average 3.33 on a 0-5 scale, with 0 as “totally different” and 5 as “exactly the same”. The fifteen advanced English learners of Chinese were mostly students at the University of Hawai‘i at Mānoa with a mean age of 28. Their proficiency level was determined by their institutional status (Thomas, 2006), in which the participants are recruited based on their status at the institution. All of them were either taking third-year advanced Chinese class or had completed a minimum of one advanced Chinese class (third-year or above) at the college level at the time of data collection. Their average formal instruction time was 520 hours.  

Thirteen of them had been to the Mainland China or Taiwan, and their average time studying Chinese abroad was about 10 months. They were all non-heritage Chinese speakers, which means that none of their family members spoke Chinese around them, and they did not grow up in an environment where Chinese was spoken. All of the participants were compensated for their participation at a rate of ten U.S. dollars for each

---

30 At the University of Hawai‘i at Mānoa, students in Chinese classes meet 4 times a week with 50 minutes each time. There are 16 weeks of instruction time every semester. The university offers Chinese classes from the first year to the fourth year in the undergraduate curriculum. The first, second, third or fourth year Chinese classes consist of 2 semesters each. In the 2 semesters, students thus receive about 107 hours of formal instruction (50x4x16x2/60=107). The average time of formal instruction for the L2 participants in this dissertation was 520 hours, which is close to completing five years of study in Chinese at the University of Hawai‘i at Mānoa. Some of the participants took certain classes more than once, and some had intensive training prior to coming to UH. However, all of them started to receive systematic formal instruction in Chinese after they became adults (18 years or older).
participant in the native English speaker group and in the L2 learners group, and 15 Chinese yuan for each participant in the native Chinese speaker group.

5.5 Procedure

The participants participated individually on campus at their own university. An experimenter met with each participant and sat with him or her during the whole process of the experiment. Prior to the experiment, the participant and the experimenter engaged in small talk in the language being tested, in order to establish and maintain the target language mode.

The participants first completed a short language background questionnaire in their native language. Following that, they were shown short videos. After watching each video, they were asked to describe verbally what happened in the video. The native English speaker group was asked to describe the videos in English, and the native Chinese speaker group and the advanced L2 Chinese learner group were asked to describe the videos in Chinese. The two sets of pseudorandomized videos were randomly assigned to the participants in each group with half of them watching one set and the other half watching the other set. Half of the participants in each group were female and the other half was male.

A training item was provided at the beginning of the experiment to familiarize the participants with the task. After the training, the experimenter showed the videos to participants. After watching each video, participants were asked to describe what

31 There were two experimenters for this dissertation: a trained research assistant in China and myself. The Chinese assistant was the experimenter for the native Chinese speaker group in China. I was the experimenter for the native English speaker group and the L2 learner group in the U.S.
happened in the video. They were not limited as to what to describe about the video. For
the L2 learner group, when a new object or location (e.g., stroller, swimming pool, etc.)
appeared, the experimenter supplied the name of the object or the location in Chinese
right after the videos were played. The experimenter also supplied the name of an object
or a location if the L2 learners asked again. For the native English speaker group and the
native Chinese speaker group, the experimenter supplied the names of objects when the
participants were not sure about an object or a location in the videos. In cases where the
information provided by the participants was seen as insufficient, the experimenter asked
general questions, such as, “Then what happened?” in the designated language (e.g.,
English for the native English speaker group) until the participants provided more
informative descriptions that included Path or Manner. None of the general questions
focused on the motion events specifically, such as Cause, Path or Manner components.
The purpose was to ensure that participants produced natural linguistic descriptions about
motion events without being led to a specific pattern of linguistic encoding.

5.6 Coding

Each session was audiotaped and transcribed into the original languages (e.g.,
native Chinese speakers’ descriptions were translated into Chinese). Most participants
(86%) only produced one sentence to describe each video. Additional sentences were
generally produced to describe either the physical environment or the Agent’s emotional
state, such as where the action took place (e.g., a park) or whether or not the Agent
looked happy, both of which were irrelevant to the aspects of motion events being
examined in this dissertation. Thus, only one sentence was selected from each video
transcript of each participant for analysis. When more than one sentence was produced by a participant to describe a single motion event, the sentence that included the most information about the motion event was selected. Two criteria were applied for such sentence selection. Criterion #1 was whether or not the Path component was included. Criterion #2 was whether or not the sentence included the most information about the motion event among all of the sentences being produced by the participant. Criterion #1 was applied first. When more than one sentence included the Path component, criterion #2 was then applied. Furthermore, the application of criterion #2 was based on how many semantic constituents were included in an utterance, namely, Cause of the motion, Manner of the Agent, Manner of the Object, Figure, Ground, etc. It is worth noting that the L2 learners frequently self-corrected their descriptions before finalizing it. In such cases, the finalized version was always the most informative one across all participants (100%).

This dissertation aims for a maximally unbiased approach by accounting for the following factors: (a) the overall distribution of the key semantic constituents in Chinese compared with English; (b) the syntactic constructions employed in describing DT caused motion events in Chinese; (c) the locus of the Path constituent following both of the competing theoretical accounts (i.e., conducting an analysis that follows Talmy by treating V2 as a satellite; and then following Slobin by treating V2 as a verb); and (d) teasing apart boundary-crossing and non-boundary-crossing events as part of the analysis. The next two sections (5.6.1 and 5.6.2) will explain how the semantic constituents and the syntactic constructions are encoded, and the results section (see section 5.7) will include the recoding of the locus of Path by treating it as either a satellite (Talmy, 1985,
Further, it will discuss the results of coding boundary-crossing and non-boundary-crossing motion events within their respective categories. In order to highlight any possible relationship between the major information components and the use of the disposal construction, this dissertation also coded how the Path component (the most important information in a motion event) was related to its sentence structures.

5.6.1 Coding of semantic constituents

The descriptive distribution of the key components of motion events in each utterance were coded as follows:

1. CAUSE: Causal relation between the agent and the object; e.g., push or kick
2. ACTION: Agent’s action causing object’s motion; e.g., push or kick
3. A-Manner: Agent’s manner of motion; e.g., push or kick
4. PATH: Object’s path of motion; e.g., to or into
5. O-MANNER: Object’s manner of motion; e.g., fly or roll

According to Brown and Gullberg (2011), Path information can be perceived from three aspects: Source Path, Via Path and Goal Path. More specifically, Source Path depicts the starting point of a Path. Via Path depicts a Figure moving along a Path. Goal Path describes the ending point of a Path. For example, different prepositions can be used to indicate different Paths.

---

32 Jackendoff (1983) uses different terms: “From Path” instead of “Source Path”; and “To Path” instead of “Goal Path”. However, the different terms refer to the same meaning. According to Jackendoff (1983), these three Paths (From Path, Via Path and To Path) are different components of a complete Path.
encode different Path components: ‘from, out, off’ (Source Path); ‘via, past, through’ (Via Path) and ‘to, into, onto’ (Goal Path) (Lakusta & Landau, 2005). In this dissertation, only Via Path and Goal Path were encoded as fulfilling the Path information, whereas sole Source Path was not considered as satisfying the Path component. This is because, in Chinese, Source Path only conveys limited information about Path. For example, the sentence 小李从楼梯下扔球 (Xiǎolǐ cóng lóu tī xià rēng qiú, Lee-from-stairs-down-throw-ball, Lee throws the ball from the bottom of the stairs) does not give specific information concerning which direction the ball is thrown to or where the ball finally lands.

Among the five components (i.e., Cause, Action, A-Manner, Path, and O-Manner), Cause, Path and O-Manner were analyzed in detail. The reason for not analyzing Action and the agent’s Manner in detail was that the agent’s Action was indeed the cause of each DT caused motion event. As a result, Cause and Action could be yielded from the same source. In the meantime, the agent’s Manner, Action and Cause of the motion were manifest on the same linguistic item (e.g., push or throw). Therefore, the frequency of the three semantic constituents (i.e., Cause, Action and A-Manner) was exactly the same.

In terms of Path information, the coding in this dissertation reflected both Talmy’s (2009a) and Slobin’s (2004) accounts: satellite or verb. Specifically, as discussed in chapter 2 (see section 2.6), the semantic constituent that encodes Path of a motion event in a “V1+V2” construction can be defined as either a satellite (Talmy, 1985, 1991) or a verb (Slobin, 2004, 2006). Following Ji et al. (2011), this dissertation made an effort to avoid any theoretical bias by taking both accounts into consideration. In practice, the Path constituent in question was coded twice: once as “satellite” and once as “verb”.

80
The following lists the categories of Path and locative information based on the participants’ oral production data.

(i) Satellite or Verb (S/V)
e.g., 进 (jìn, to enter) in 推进 (tuī-jìn, to push-enter);

(ii) Satellite (S)
e.g., 往…上 (wǎng…shàng, towards…up) in 往楼梯上扔球 (wǎng lóutī shàng rēng qiú, towards-stairs-up-throw-ball);

(iii) V (Verb)
e.g., 到 (dào, to arrive) in 扔球到楼梯上 (rēng qiú dào lóutī shàng, throw-ball-arrive-stairs-up);

(iv) Location marker (Loc)
e.g., 在…上 (zài…shàng, at…up) in 扔球在楼梯上 (rēng qiú zài lóutī shàng, throw-ball-at-stairs-up).

As we can see, Path category (i) above includes Path information that can be coded as either “satellite” or “verb”, depending on which theoretical orientation we follow (i.e., “satellite” in Talmy’s account or “verb” in Slobin’s account).

Further, Path category (ii) above consists of Path information that can only be coded as “satellite” because the Path words in this category are indisputably prepositions in Chinese. These prepositions cannot be interpreted as verbs in the given situation, as illustrated in example (53).

(53) *他推宝宝车从路的右边到路的左边。
Tā tuī bāobao chē cóng lù de yòubiān dào lù de zuòbiān.
He pushes the stroller from road ASSOC right to road ASSOC left (Intended meaning: He pushes the stroller from the left side of the road to the right side of the road.)

(54) *他扔球拍到游泳池的里边。
Tā rēng qiúpāi dào yóuyǒngchí de lǐbiān.
He throws the racket inside the swimming pool.
Clearly, in example (53), 到 (dào) is part of the prepositional phrase 从…到… (cóng...dào…, from…to…), so that it was coded as a “satellite”. Path category (iii) includes Path words that express action. In example (54), 到 (dào, to arrive) is a verb in a pivotal construction (连动式, liándòngshì). This construction “contains a noun phrase that is simultaneously the subject of the second verb and the direct object of the first verb” (Li & Thompson, 607). In example (54), 到 (dào, to arrive) is the action of the moving entity 球拍 (qiúpāi, racket). Thus, it was coded as a “verb”.

Words in Path category (iv) above are different from those included in the other three Path categories in that these words are locative information, which technically depict where the Object locates. The appearance of locative information was unexpected in the native Chinese speakers’ and the L2 learners’ verbal descriptions. None of the previous studies reported the use of locative information in the descriptions of motion events in Chinese. The coding of locative information can thus potentially show more detail concerning how Path may be encoded when describing Chinese DT motion events.

5.6.2 Coding of syntactic constructions

As predicted, the native Chinese speaker group rarely used the ZHE construction (only one utterance among all sentences produced). The L2 learners did not use the ZHE construction at all. In particular, three syntactic constructions were involved in the verbal descriptions of DT motion events in Chinese: the BA construction, the JIANG construction, and the BEI construction. Even though all of these three constructions

33 The pivotal construction can be viewed as a serial verb construction (Li & Thompson, 1981). In this dissertation, the second verb in a pivotal construction is treated as a verb.
encode the same sense of disposal, they were separately coded in this dissertation in order to fully understand how native Chinese speakers and the advance L2 learners used them.

To date, only one other study (i.e., Ji et al., 2011) has linked the features of these syntactic structures to the typological classification of Chinese and, moreover, both the BA construction and the JIANG construction were coded as BA construction in Ji et al. (2011). This treatment was appropriate because only native Chinese speakers’ verbal descriptions were examined in Ji et al. (2011). However, it would not serve the purpose of this dissertation since L2 learners were involved. As noted in chapter 3, the BA construction and the JIANG construction differ in register (Jing-Schmidt & Tao, 2009). The BEI construction differs from the other two in that it conveys a passive voice (see sections 3.4 and 3.5). Coding these three syntactic constructions separately can help us understand more about the differences between the verbal descriptions of native Chinese speakers and those of advanced L2 learners.

Furthermore, to remain consistent with the coding of the semantic constituents, the coding of these three syntactic constructions also takes into consideration both Talmy’s (1985, 1991) and Slobin’s (2004, 2006) accounts. Specifically, the Path information in RVCs of these three syntactic constructions was coded twice, as demonstrated in the previous section: once as OTHER and once as VERB. Note that OTHER represents non-verbs, and VERB represents verbs. We may also use SATELLITE instead of OTHER to represent non-verbs. However, using OTHER instead of SATELLITE allows this study to stay consistent with Ji et al. (2011), which is the first study that employs such a paradigm to analyze motion events in Chinese.

34 This is not explicitly explained in Ji, et al. (2011), but example (26a) on page 1062 in this study shows such treatment.
5.7 Results

5.7.1 Overall distribution

Figure 5.1 shows the major information components that were expressed in the oral production task by the three groups: the native Chinese speaker group, the native English speaker group and the advanced L2 Chinese learner group. As shown in this Figure, the information that was least frequently expressed in the three groups was Manner of the Object’s motion, such as rolling and flying. To quantify any significant differences between these information components within each group, the results were statistically analyzed using SPSS.

For the native English speaker group, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction determined that the frequencies of the three key information components (i.e., Cause of the motion event, Path of the Object and Manner of the Object) were significantly different: F (1.011, 23.263) = 76.512, p < .001. Post hoc tests using the Bonferroni correction revealed that the frequency of Cause (M = 13.42, SD = 4.106) and the frequency of Path (M = 14.79, SD = 0.415) were not significantly different (p > .05). However, Manner (M = 1.46, SD = 4.107) was less frequently expressed than Cause and Path, which was significantly different from Cause (p < .001) and from Path (p < .001).

For the native Chinese speakers’ data, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed the same pattern as was the case for the native English speakers’ data.
More specifically, the three key information components Cause (M = 14.17, SD = 2.839), Path (M = 14.42, SD = 1.018) and Manner (M = 1.13, SD = 2.802) were significantly different in frequency: $F(1.09, 25.067) = 168.166, p < .001$. Post hoc tests using the Bonferroni correction revealed that the frequencies of Cause and Path were not significantly different ($p > .05$), but Manner was significantly different from Cause ($p < .001$) and from Path ($p < .001$) in frequency.

However, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction revealed a different pattern for the advanced L2 Chinese learners’ data. Even though, just like the previous two groups, the frequencies of Cause (M = 14.00, SD = 2.187), Path (M = 8.04, SD = 1.429) and Manner (M = .96, SD = 2.196) were significantly different, $F(1.179, 27.111) = 188.302, p < .001$.

Post hoc tests using the Bonferroni correction revealed a different within-group pattern, that was, in addition to the fact that Manner was significantly different from
Cause (p < .001) and from Path (p < .001) in frequency, the frequencies of Cause and Path were also significantly different (p < .001) for this group. That is to say, the advanced L2 learners encoded Path significantly less frequently than was the case for native Chinese speakers.

The above results show that there is a language-independent preference, that is, “Cause = Path > Manner” in English and in Chinese. Meanwhile, they also reveal that the advanced L2 Chinese learners are not able to follow the same pattern as native Chinese speakers, even though their native language English employs the same language-independent preference. An obvious difference was that the advanced L2 Chinese learners expressed Path less frequently than did the native English speaker group and the native Chinese speaker group.

![Figure 5.2 Semantic constituents for Path encoding](image)

**Figure 5.2 Semantic constituents for Path encoding**

To further manifest the differences of Path encoding between the advanced L2 Chinese learners and the native Chinese speakers, a more detailed analysis was conducted. As can be seen from Figure 5.2 above, the native Chinese speakers predominantly
encoded Path in semantic constituents that can be theoretically defined as either satellites or verbs (91%), while a very small percentage of Path was encoded in absolute verbs (2%), and a small percentage of Path was encoded in absolute satellites (4%). For the advanced L2 Chinese learners, a similar percentage of Path information was encoded in absolute satellites (5%), as “satellite or verb” (37%) less frequently than was the case for native speakers, and as absolute verbs (16%) more frequently than for native speakers. Moreover, the L2 learners described the static location of the ending points of the Objects (30%) much more frequently than did native Chinese speakers (0.3%). Example (55) illustrates how the advanced L2 learners encoded Path in verbs, and example (56) illustrates how they used static locative information instead of Path information.

(55) *他踢篮球到游泳池的里面。
Tā tī lánqiú dào yóuyǒngchí de lǐmiàn.
he kick basketball arrive swimming-pool ASSOC inside
He kicked the ball into the swimming pool.

(56) *他踢球在游泳池。
Tā tī qiú zài yóuyǒngchí.
he kick ball at swimming-pool
(Intending meaning: He kicked the ball into the swimming pool.)

As seen in example (56), the advanced L2 learners employed a sentence structure that was similar to a typical sentence structure in English. Examples (57a) and (57b) demonstrate the similarity between them:

(57) a. *Agent + V1 (Cause) + Object + V2 (Path) + Ground
小李踢球到游泳池。
Xiǎolǐ tī qiú dào yóuyǒngchí.
Lee kick ball arrive swimming-pool
Lee kicks the ball to the swimming pool
b. Agent + V (Cause) + Object + Satellite (Path) + Ground
Lee kicks the ball to the swimming pool

c. *Agent + V (Cause) + Object + Satellite (Location) + Ground
小李踢球在游泳池。
*Xiāolǐ tī qiú zài yóuyōngchí.
Lee kick ball at swimming-pool
(Intending meaning: Lee kicks the ball into the swimming pool.)

Obviously, (57a) is very similar to (57b). First, they encode the same information components (i.e., Cause, Object, Path and Ground). Second, they use the same order (i.e., Cause + Object + Path + Ground). Example (57c), however, has one major difference from (57a) and (57b) which is that, instead of encoding Path, location is encoded in (57c). Note that the word order in (57c) is similar to that in (57a) and (57b). Therefore, the sentence structure in example (57c) bears a resemblance to that in (57a) and (57b). This tells us that the L2 learners were employing the sentence structure from their L1 English when expressing a DT caused motion event in Chinese. The relationship between the Path component and its sentence structures will be analyzed in more detail in section 5.7.8.

5.7.2 Re-coding the data

In this section, we will see how the results look like after re-coding once following Talmy’s (1985, 1991) approach and again following Slobin’s (2004, 2006) approach. More specifically, the results were re-coded once as “satellital” coding and once as “verbal” coding. In the “satellital” coding, the V2 in a “V1 + V2” phrase was treated as a satellite, whereas it was treated as a verb in the “verbal” coding.
Figure 5.3 “Satellital” coding of Cause, Path and Manner for the three groups

Figure 5.3 shows the distribution of the key information components when using the “satellital” coding scheme, and Figure 5.4 shows the distribution of the key information components using “verbal” coding.

Since the main focus of Talmy’s (1985, 1991) and Slobin’s (2004, 2006) arguments concerns the treatment of Path, only Path was re-coded. We can see from figure 5.3 and Figure 5.4 that the English data remain the same in the two coding methods, because there was no dispute regarding the grammatical status of the Path constituent in English. Specifically, all Path information was encoded in prepositions (satellites). Thus, Path was completely encoded via OTHER for both methods in English.

However, the locus of the Path component changes dramatically between these two methods for the descriptions produced by the native Chinese speakers and advanced L2 learners.
In terms of the descriptions produced by native Chinese speakers, 95% were encoded via OTHER while using the “satellital” coding method, and 93% of the Path information was encoded via VERB while using the “verbal” coding method. Despite the fact that the advanced L2 learners encoded Path less frequently than did the native Chinese speakers, their Path encoding roughly followed the native Chinese speakers’ pattern in the two coding methods, since the major percentage of the Path information was encoded via OTHER using the “satellital” coding method and via VERB using the “verbal” coding method. Specifically, when the “satellital” coding method was used, 42% of the Path information was encoded via OTHER, and 16% of the Path information was encoded via VERB. When the “verbal” coding method was used, 53% of the Path information was encoded via VERB, and 5% of the Path information was encoded via OTHER. Note that the percentages used in this dissertation are the original percentages encoded out of all motion events. For example, the advanced L2 learners encoded 58% of all Path information, in which 53% was encoded via VERB and 5% via OTHER when
using the “verbal” coding. Obviously, the coding methods played an important role in how Path information was encoded in Chinese. When following Talmy’s (1985) account, the Path information was predominantly encoded via OTHER in Chinese. While following Slobin’s (2004, 2006) account, however, the Path information was predominantly encoded via VERB in Chinese. Such a difference held true for both native Chinese speakers and advanced L2 learners.

Clearly, Figure 5.3 shows that Chinese and English follow the same pattern when the “satellital” coding method is used, both displaying S-framed properties. Looking at Figure 5.4, one might argue that Chinese doesn’t look like English when the “verbal” coding method is employed. If we examine Figure 5.4 in more detail, it is clear that Chinese is not E-framed, since Manner is encoded much less frequently than Path is, even though both are encoded via VERB. Slobin (2004, 2006) only emphasized V2’s verb status in a “V1 + V2” structure. This has raised a very important question regarding what data must be included in order to say Path and Manner are equally significant in force in E-framed languages.

However, one might argue that Chinese looks like V-framed when we treat V2 as a verb by following Slobin’s (2004, 2006) account. Indeed in the “verbal” coding method, the Path component is predominantly encoded via VERB, a V-framed property. Apparently, we need to consider more information about Chinese before making a well-informed conclusion. In Chapter 2 (see section 2.4), we discussed that V-framed languages such as Spanish display different properties when describing boundary-crossing and non-boundary-crossing motion events. If Chinese is V-framed, it would display different characteristics when expressing these two types of events, just as
Spanish does. In the next section, I will present results of coding boundary-crossing and non-boundary-crossing DT caused motion events separately, which will help us discover more about Chinese.

5.7.3 Boundary-crossing and non-boundary-crossing

The data were divided into two groups: a non-boundary-crossing group and a boundary-crossing group. The former includes the *Up Schema* and the *Down Schema*, while the latter consists of the *Across Schema* and the *Into Schema*.

First, non-boundary-crossing motion events (i.e., *Up* and *Down*) display the same overall distribution pattern for each of the motion events and for all the three language groups, as shown in Figure 5.5.

![Figure 5.5 Distribution of non-boundary-crossing events: Up and Down](image)

Figure 5.5 Distribution of non-boundary-crossing events: Up and Down
A one-way repeated measures ANOVA determined that the frequencies of the three key information components (i.e., Cause, Path and Manner) in the native English speakers’ data were significantly different: $F(2, 14) = 1800.373, p < .001$. Post hoc tests using Bonferroni correction revealed that the frequencies of Cause ($M = 14.75, SD = .463$) and Path ($M = 14.38, SD = 0.518$) were not significantly different ($p > .05$). However, Manner ($M = .25, SD = .463$) was less frequently expressed than Cause and Path, and the difference was significant for both Cause ($p < .001$) and Path ($p < .001$). Likewise, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed the same pattern for the native Chinese speaker group.

Specifically, the three key information components Cause ($M = 15, SD = .00$), Path ($M = 13.36, SD = 1.302$) and Manner ($M = .00, SD = .00$) were significantly different: $F(1, 7) = 972.705, p < .001$. Post hoc tests using the Bonferroni correction revealed that the frequencies of Cause and Path were not significantly different ($p > .05$), but Manner was significantly different from Cause ($p < .001$) and Path ($p < .001$) in frequency. Furthermore, a one-way repeated measures ANOVA revealed a different pattern for the advanced L2 Chinese learner group. The frequencies of Cause ($M = 14.63, SD = .518$), Path ($M = 7.63, SD = 1.061$) and Manner ($M = .38, SD = .518$) were significantly different $F(2, 14) = 631.815, p < .001$. Post hoc tests using the Bonferroni correction revealed that the following three pairs were significantly different in frequency: Cause and Path ($p < .001$), Cause and Manner ($p < .001$), and Path and Manner ($p < .001$).

Second, the boundary-crossing motion events *Across* and *Into* also displayed information distribution patterns that were similar to those of the non-boundary-crossing motion events *Up* and *Down*, as shown in Figure 5.6.
A one-way repeated measures ANOVA with a Greenhouse-Geisser correction determined that the frequencies of the three key information components (i.e., Cause, Path and Manner) encoded by the native English speaker group were significantly different: $F(1.004, 15.058) = 31.367, p < .001$. Post hoc tests using the Bonferroni correction revealed that Cause ($M = 12.75, SD = 4.933$) and Path ($M = 15, SD = 0$) were not significantly different in frequency ($p > .05$), but Manner ($M = 2.06, SD = 4.959$) was less frequently expressed than were Cause and Path, which was significantly different from Cause ($p < .001$) and from Path ($p < .001$).

For the native Chinese speakers’ data, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed the same pattern. Specifically, the three key information components Cause ($M = 13.75, SD = 3.435$), Path ($M = 14.81, SD = .544$) and Manner ($M = 1.25, SD = 3.435$) were significantly different: $F(1.016, 15.246) = 76.495, p < .001$. Post hoc tests using the Bonferroni correction revealed that Cause and Path were not significantly different in frequency ($p > .05$), but Manner was significantly different from Cause ($p < .001$) and from Path ($p < .001$) in frequency.

Using the same method, however, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction revealed a different pattern for the advanced L2 Chinese learners’ data. The frequencies of Cause ($M = 13.69, SD = 2.626$), Path ($M = 8.25, SD = 1.571$) and Manner ($M = 1.25, SD = 2.646$) were significantly different ($F(1.148, 17.222) = 80.913, p < .001$). Post hoc tests using the Bonferroni correction revealed that the following three pairs were significantly different in frequency: Cause and Path ($p < .001$), Cause and Manner ($p < .001$), and Path and Manner ($p < .001$).
Figure 5.6 Distribution of boundary-crossing events: Across and Into

Apparently, the non-boundary-crossing and the boundary-crossing caused motion displayed the same pattern as “all the motion events together” (*All* events) for the three groups. In order to tease apart any possible intra-category differences, it is thus necessary to examine each individual event as well.

Since both the *Up* and *Down* events represent a Figure moving along a line (Talmy, 2000), they essentially depict the same Path schema. Thus, these two events do not need to be separated. The *Across* events and the *Into* events are different. In this dissertation, the former represents that the Figure moves across a plane, and the latter represents that the Figure moves into a volume. The Ground in the *Across* events is abstracted as a plane, and the Ground in the *Into* events is idealized as a volume. Therefore, the *Across* events and the *Into* events were different events, and they were individually analyzed. The results after the re-grouping will be shown in the next section (see section 5.7.4).
5.7.4 Boundary-crossing motion events: Across or Into

The boundary-crossing motion events pertaining to *Across* displayed a different pattern from the non-boundary-crossing motion events (*Up/Down*), and which was also different from the boundary-crossing motion events *Across, Into* and *All*. Specifically, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed the same pattern for the native English speakers’ data, namely, the three key information components Cause (M = 10.05, SD = 6.370), Path (M = 15.00, SD = .00) and Manner (M = 4.13, SD = 6.556) were significantly different: F (1.004, 7.031) = 5.744, p < .001. However, post hoc tests using the Bonferroni correction revealed that only Path and Manner were significantly different (p = .007). Unlike the motion events discussed above, Cause and Manner were not significantly different in expressing *Across* events. As shown in Figure 5.7, Cause was not encoded as frequently as Path by the native English speakers. Yet, Manner was encoded more frequently in comparison with the motion events examined earlier.

The native Chinese speaker group showed a different pattern from that of the previous motion events discussed but the same pattern as the native English speaker group in the expressions of the three major information components in *Across* events. Using the same statistical test, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed that the three key information components Cause (M =12.50, SD = 4.660), Path (M = 14.75, SD = .707) and Manner (M = 2.50, SD = 4.66) were significantly different: F (1.015, 7.102) = 15.546, p = .005. However, post hoc tests using the Bonferroni correction revealed that only Path and Manner were significantly
different (p < .001). Frequency of use for Manner and Cause were not significantly different when expressing Across events.

As predicted, the expressions of the advanced L2 learner group displayed a different pattern from those of the native English speaker group and the native Chinese speaker group, but the expressions of this group surprisingly followed the pattern of the expressions of the motion events examined earlier. Specifically, a one-way repeated measures ANOVA with a Greenhouse-Geisser correction showed the three key information components Cause (M = 12.50, SD = 3.381), Path (M = 9.38, SD = .916) and Manner (M = 2.5, SD = 3.381) were significantly different: F (1.037, 7.259) = 17.883, p = .003. Post hoc tests using the Bonferroni correction revealed that Manner was significantly different from Cause (p < .05) and from Path (p = .001), which resembled the pattern of the expressions produced by the native English speaker group and the native Chinese speaker group.

Apparently, the Across events generated a different pattern from the motion event groups examined earlier. In this case, the native English speakers and the native Chinese speakers encoded Manner of the Object more frequently. In English and Chinese, Cause and Object’s Manner competed for one semantic slot in expressions of DT caused motion events. Knowing that Cause is less frequently encoded, we can predict that the Object’s Manner would be more frequently encoded. Example (58) illustrates this.

(58)  a. 小李把球推到路的那边。

\textit{Xiǎolì bā qiú tuī-dào lù de nà biān.}

Lee BA ball \textbf{push[Cause/A-Manner]}-arrive road ASSOC that side

Lee pushed the ball to the other side of the road.
As shown in (58a) and (58b), Cause (also the Agent’s Manner) and the Object’s Manner take the same slot in a sentence for expressions involving DT caused motion events. When the disposal construction is employed, such a slot must be filled to complete the RVC. Thus, the participants had to choose between one or the other in their verbal description. From this perspective, the major difference between the *Across* events and other events was presumably related to the relatively more frequent selection of Manner over Cause.

A possible reason for this phenomenon is that Object’s Manner is more salient in *Across* events. Why, then, is Object’s Manner more salient in *Across* events? One could argue that the stimuli used in the *Across* events may manifest Object’s Manner more than the stimuli used for other motion events did. However, considering that different Manners in each event category were carefully balanced, a more plausible explanation is that the Path in the *Across* events offer a clearer background to display Object’s Manner.

Another question of interest is why the advanced L2 learners followed a similar pattern as the native Chinese speaker group. As shown in Figure 5.7 below, the advanced L2 learners encoded Path less frequently than the native Chinese speakers did. Note that the L2 learners encoded Path less frequently than they encoded Cause in the previous event groups. Here, for the *Across* events, Cause was less frequently encoded than usual, which brought the frequencies of these two components closer to each other. More specifically, these two components did not differ significantly in frequency. On the
surface, the data statistically show a similar group-specific pattern to that of the native Chinese speakers’ data which we saw above for the encoding of motion events, but essentially, it did not change the fact that Path was less frequently encoded.

![Figure 5.7 Distribution of boundary-crossing events: Across](image)

**Figure 5.7 Distribution of boundary-crossing events: Across**

The *Into* events were individually analyzed using descriptive statistics. The reason for not using inferential statistics was that Manner was not encoded at all (i.e., zero data points) for the *Into* events for all the three groups and, thus, performing inferential statistics would not be informative.

In describing the *Into* events, the native English speakers uniformly encoded 100% of the Cause ($M = 15$, $SD = 0$) and the Path ($M = 15$, $SD = 0$), but Manner was not encoded at all (i.e., 0%, $M = 0$, $SD = 0$).
For the expressions of the native Chinese speakers, the pattern was very similar to that of the native English speakers. The native Chinese speakers encoded all potential instances of Cause (M = 15, SD = 0), the majority of those for Path (M = 14.88, SD = .354), but none of Manner (M = 0, SD = 0). For the advanced L2 learner groups, Cause was predominantly encoded (M = 14.88, SD = .354), Path was less encoded (M = 7.13, SD = 1.246), and Manner was not encoded at all (M = 0, SD = 0). Clearly, how Cause and Path were encoded has shown consistency among the event groups discussed above. The only difference is that Manner was not encoded at all.

This has brought up another interesting question, namely, why did these three groups all neglect to encode Manner at all? A possibility is that the external force “Cause” was more distinguishable in Into events. Presumably, the boundary of Into events can be more difficult to cross than that of Across events from the viewpoint of the viewers.
Consequently, the viewers may have automatically chosen to encode the force of the Cause over the Object’s Manner, i.e., the competing information component of Cause.

5.7.5 Re-coding non-boundary-crossing and boundary-crossing events

The non-boundary-crossing, boundary-crossing events and individual (i.e., Across or Into) events were also re-coded using the “satellital” and the “verbal” coding methods.

![Graph showing the comparison of coding methods for English, Chinese, and learners.](image)

**Figure 5.9 “Satellital” coding of non-boundary-crossing events: Up and Down**

First, Figures 5.9 and 5.10 show that English displayed a similar pattern in both “verbal” coding and “satellital” coding when describing the DT caused non-boundary-crossing events *Up* and *down*. Such a finding is not surprising since there is no dispute regarding the typological classification of English, and it would display S-framed properties regardless of the involvement of event types or the use of coding systems.
Figure 5.10 “Verbal” coding of non-boundary-crossing events: Up and Down

The native Chinese speaker’s data show that Path was predominantly encoded via OTHER when all V2 were treated as satellites, following Talmy’s (1985, 1991) account. Path was predominantly encoded via VERB when all V2 were treated as verbs, following Slobin’s (2004, 2006) account. This pattern is similar to the pattern discussed above for All motion events together.

Second, as shown in Figures 5.11 and 5.12, the boundary-crossing motion events Across and Into displayed similar properties as did non-boundary-crossing motion events Up and Down in both the “verb” and “satellite” coding schemes. In particular, the Path component was predominantly encoded via OTHER when the V2 was treated as a satellite, and it was predominantly encoded via VERB when the V2 was treated as a verb. The reason for teasing apart non-boundary-crossing versus boundary-crossing events was to see if Chinese displays different properties when describing these two types of events.
Figure 5.11 “Satellital” coding of boundary-crossing events: Across and Into

If Chinese is V-framed, there would be a difference in expressing these two types of events. However, Chinese encoded non-boundary-crossing and boundary-crossing motion events in a similar fashion, not showing V-framed properties in this regard.
5.7.6 Re-coding Across events and Into events

As shown in Figures 5.13 and 5.14 below, the Across events displayed a pattern similar to that of non-boundary-crossing and boundary-crossing motion events in both the “verb” and “satellite” coding schemes.

Figure 5.13 “Satellite” coding of boundary-crossing events: Across

Figure 5.14 “Verbal” coding of boundary-crossing events: Across
That is to say that the Path component was predominantly encoded via OTHER when the V2 was treated as a satellite, and it was predominantly encoded via VERB when the V2 was treated as a verb in *Across* events.
Meanwhile, as shown in Figures 5.15 and 5.16 below, the Path information in the *Into* events likewise displayed a similar pattern. Specifically, Path was predominantly encoded via OTHER when following Talmy’s (1985, 1991) account. It was predominantly encoded via VERB when following Slobin’s (2004, 2006) account.

A noticeable difference actually lied in how frequently Manner was encoded across motion events for the three groups. Specifically, the frequency displayed a similar order of preference for each group, as shown in Table 5.1.

**Table 5.1 Manner Encoding Across Motion Events**

<table>
<thead>
<tr>
<th>Group</th>
<th>Manner encoding across events</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td><em>Across</em> (27.5%) &gt; <em>Across + Into</em> (13.7%) &gt; <em>Up + Down</em> (1.7%) &gt; <em>Into</em> (0%)</td>
</tr>
<tr>
<td>Chinese</td>
<td><em>Across</em> (16.7%) &gt; <em>Across + Into</em> (8%) &gt; <em>Up + Down</em> (0%) = <em>Into</em> (0%)</td>
</tr>
<tr>
<td>Learners</td>
<td><em>Across</em> (16.7%) &gt; <em>Across + Into</em> (8%) &gt; <em>Up + Down</em> (2.5%) &gt; <em>Into</em> (0%)</td>
</tr>
</tbody>
</table>

In sum, Manner was mostly encoded for the *Across* events, rarely for the *Up* and *Down* events and not at all for the *Into* events. This indicates that whether a motion event is boundary-crossing or non-boundary-crossing does not explain such a phenomenon. A possible further explanation is that dimensionality could play a role in the Manner encoding of DT caused motion events. For example, the external force “Cause” in a three-dimensional motion event (e.g., an *Into* event) would be the most salient compared with other motion events.

Slobin (2004, 2006) has proposed that languages should be classified based on a continuum of Manner salience. This Manner salience is defined as “…the level of attention paid to manner in describing motion events” (Slobin, 2006, p. 64). It would be
interesting to investigate whether such a Manner salience within a language or within a type of language, which would provide more information about the underlying motivation for encoding Manner differently.

5.7.7 Use of disposal constructions

A paired-samples t-test was conducted to compare the frequency of use for disposal constructions in the native Chinese speakers’ data and in the advanced L2 learners’ verbal descriptions of All motion events. There was a significant difference between the frequency of use for disposal constructions in the native Chinese speakers’ data (M = 13.54, SD = 1.25) and in the advanced L2 Chinese learners’ data (M = 8, SD = 1.35) when considering all motion events together: t (23) = 14.56, p < .001. The native Chinese speakers used the disposal construction more frequently than did the advanced L2 learners.

Figure 5.17 Frequency of using disposal constructions: All
More specifically, as displayed in Figure 5.17, 90% of all motion events were described by using the three syntactic constructions in the native Chinese speaker group: the BA construction (68%), the JIANG construction (19%), and the BEI construction (3%). However, only 53% of all motion events were described using the disposal constructions in the data produced by the advanced L2 Chinese learner group, in which only the BA construction was employed and the JIANG construction and the BEI construction were not included.

To examine the data further, a paired-samples t-test was conducted to compare the frequency of use for the disposal constructions by the native Chinese speaker group and by the advanced L2 learner group for expressions involving Up and Down events. There was a significant difference between the frequency of use for disposal constructions in the native Chinese speaker group (M = 12.5, SD = 1.41) and in the advanced L2 Chinese learner group (M = 7.88, SD = 1.36): t (7) = 5.62, p = .001.

Figure 5.18 shows that 83.5% of the Up and Down events were described by using the three syntactic constructions in the native Chinese speaker group: the BA construction (64%), the JIANG construction (17%) and the BEI construction (2.5%). However, only 52.5% of the Up and Down events were described by using the disposal construction in the advanced L2 Chinese learner group. The learners only employed the BA construction, and they did not use the JIANG construction and the BEI construction. So far, we have seen a similar pattern in the frequency of use for the disposal construction between the native Chinese speaker group and the advanced L2 learner group. First, the native Chinese speakers used the disposal construction more frequently
than did the advanced L2 learners. Second, the former group employed the three disposal constructions, and the latter group only used the BA construction.

![Figure 5.18 Frequency of using disposal constructions: Up and Down]

Another paired-samples t-test was conducted to compare the frequency of use for the disposal construction by the native Chinese speakers and by the advanced L2 learners when describing *Across* and *Into* events. There was a significant difference between such frequency of use in the native Chinese speakers’ data (M = 14.06, SD = 0.78) and in the advanced L2 Chinese learners’ data (M = 8.06, SD = 1.39): t (15) = 16.43, p < .001.

Figure 5.19 shows that 94% of the *Across* and *Into* events were described by using the three syntactic constructions: the BA construction (70%), the JIANG construction (20%) and the BEI construction (4%). However, only 54% of the *Across* and *Into* events were described by using the disposal construction BA in the advanced L2
Chinese learners’ verbal descriptions. They did not use the JIANG construction and the BEI construction.

Figure 5.19 Frequency of using disposal constructions: Across and Into

The results of a paired-samples t-test show that there was a significant difference between the frequency of using the disposal constructions (M = 13.38, SD = 0.99) by the native Chinese speakers and the frequency of such use by the advanced L2 Chinese learners (M = 8.88, SD = 0.64) when describing Across events: t (7) = 15.28, p < .001.

Figure 5.20 shows that 93% of the Across events were described by using the disposal constructions in the native Chinese speaker group: the BA construction (69%), the JIANG construction (21%) and the BEI construction (3%). Following the same pattern as describing All events, Up/Down events and Across/Into events, a similar number of trials for Across events (59%) were described using the disposal construction, exclusively the BA construction. The JIANG construction and the BEI constructions were not employed.
Using the same method, a paired-samples t-test was conducted to compare the frequency of use for the disposal constructions by the native Chinese speakers and by the advanced L2 learners when describing Into events. There was a significant difference between how frequently the native Chinese speakers used such constructions (M = 14.25, SD = 0.47) and how frequently the advanced L2 Chinese learners used them (M = 7.25, SD = 1.49) when describing Into events: t (7) = 16.57, p < .001. Figure 5.21 shows that 95% of the Into events were described using disposal constructions in the data produced by the native Chinese speaker group: the BA construction (71%), the JIANG construction (19%) and the BEI construction (5%). Only 48% of the advanced L2 Chinese learners’ verbal descriptions consisted of the BA construction. The JIANG construction and the BEI construction were not used at all.

As we can see, regardless of event type, the native Chinese speakers used the three types of disposal constructions in similar patterns of frequency. Likewise, the
advanced L2 learners displayed a similar pattern of frequency across all event types as well. This is to say that event types did not play a role in the use of the various forms of the disposal construction.

Figure 5.21 Frequency of using disposal constructions: Into

Furthermore, the native Chinese speakers strictly followed the “BA/JIANG/BEI + RVC” structure in their use of the three syntactic constructions. The learners did not completely follow the appropriate usage of this construction: besides using the “BA + RVC” structure, they also produced two ungrammatical structures: (a) “BA + Verb + Location” (e.g., *把球滚在路上 bā qiú gǔn zài lù shàng, BA-ball-roll-at-path-up); and (b) “BA + Verb + Ground” (*把球踢游泳池, bā qiú tī yóuyǒngchí, BA-ball-kick-swimming pool). In these two ungrammatical structures, the Path information is not stated.

The L2 learners frequently asked for Path words during their task, with questions such as “how to say ‘across’ in Chinese?” Thus, it is reasonable to speculate that L2
Chinese learners intended to encode Path, but they had limited means to express it correctly. Because of this, they alternatively chose to create a seemingly reasonable combination to convey the information, such as by adopting the “BA + Verb + Ground” and the “BA + Verb + Location marker + Ground” structures.

An important question that needs to be asked is why the native Chinese speakers predominantly used the disposal construction. No doubt, the non-disposal sentences the native Chinese speakers produced were legitimate sentences. What factor might have determined the selection of the disposal construction in Chinese? Out of the 360 utterances produced by the native Chinese speakers, 35 of them do not involve a disposal construction. In the 35 non-disposal sentences, three sentences either did not encode Path, or the Path word was unspecific. In the remaining 32 sentences, the majority of them (19 out of 32, or 59.4%) encoded “Source Path” mainly through use of the preposition 往 (wǎng, towards). As mentioned above, a complete Path consists of three parts: Source Path, Via Path and Goal Path (Brown & Gullberg, 2011). Note that because a Source Path itself does not provide sufficient information about where the moving entity is moving towards or finally ends, it was not coded as Path in the previous sections of this dissertation. However, when we look into whether the three parts of the Path information are associated with the selection of disposal constructions, we see an interesting pattern. First, all disposal sentences produced by the native Chinese speakers exclusively consist of either Via Path or Goal Path. Second, the majority of non-disposal sentences produced by the same group exclusively consist of Source Path. Here we see that the disposal sentences produced by the native Chinese speakers are associated with specific Path information.
5.7.8 Path and sentence structures

In Chapter 3, we discussed the relation of the disposal effect and DT caused motion events in Chinese. Among the major approaches that interpret the BA, JIANG and BEI constructions, the disposal approach best explains the use of these three constructions to express DT caused motion events in a context-free situation. However, this approach does not fully explain which circumstances require use of the disposal construction to express DT caused motion events. To find out, we need to take a look at how the major semantic constituents are used in the speakers’ descriptions.

Examples (59-61) show the sentence structures that were used by the native Chinese speakers. Specifically, examples (59-60) list sentence structures associated with the disposal effect, and example (61) lists sentence structures that are not associated with the disposal effect.

Note that even though the structures listed in (59-60) only include BA, they also apply to the JIANG and the BEI constructions. As shown in the previous section (see section 5.7.7), the native Chinese speakers used the BA construction more frequently than the JIANG and the BEI constructions, and the L2 learners used only the BA construction.\(^{35}\) For this reason, the examples here focus on BA.

(59) a. BA + Object + Verb + Path + Ground
(BA + O + V + P + G)\(^{36}\)
e.g., 把鞋扔到了路的对面\(^{37}\)
* bā xié rēng dào le lù de duìmiàn

\(^{35}\) The L2 learners did not use the JIANG and the BEI constructions (0%).
\(^{36}\) “Verb” in examples (59) and (60) can be “Cause of the action” or “Manner of the Object”.
\(^{37}\) The Chinese sentences in this section are not necessarily complete sentences.
BA shoe throw arrive PERF road ASSOC opposite (Lee) threw the shoe to the other side of the road.

b. BA + Object + Source + Verb + Path + Ground
(BA + O + S + V + P + G) 

e.g., 把一个飞盘从水泥台阶的下面扔到上面
bā yī gè fēidíé cóng shuǐmǐ táijiē de xiàmiàn rēng dào shàngmiàn
BA one CLA frisbee from cement stairs ASSOC below throw arrive up
(Lee) throws a frisbee from the bottom of the cement stairs to the top of the stairs.

c. Location + BA + Object + Verb + Path + Ground
(L + BA + O + V + P + G)

e.g., 在路的一侧把一只鞋扔到路的另一侧。
zài lù de yī cè bā yī xié rēng dào lìng yī cè
at road ASSOC one side BA one CLA shoe throw arrive other one side
(Lee) throws a shoe to the opposite side of the road (while he is at one side of the road).

(60) a. BA + Object + Verb + Path
(BA + O + V + P)

e.g., 把网球拍扔过去了
bā wǎngqiú pái rēng guò qù le
BA tennis racket throw pass go PERF
(Lee) threw a tennis racket across (the road).

b. Location + BA + Object + Verb + Path
(L + BA + O + V + P)

e.g., 站在台阶上把一个篮球扔了下来
zhàn zài táijiē shàng bā yī gè lánzú rēng xià lái le
stand at stairs up BA one CLA bag throw descend come PERF
(Lee) threw a basketball downwards while standing on the stairs./
(Lee) throws a basketball downwards while standing on the top of the stairs.

c. BA + Object + Source + Path + Verb
(BA + O + S + P + V)

e.g., 把飞碟从台阶的下面往上扔
bā fēidíé cóng táijiē de xiàmiàn wǎng shàng rēng.
BA frisbee from stairs ASSOC below towards up throw
(Lee) throws the frisbee upwards from the bottom of the stairs.

d. BA + Object + Path + Verb
(BA + O + P + V)

38 The term “Source” (S) here represents “Source Path”.

115
e.g., 把袋子往上扔了
bā dàizi wǎng shàng rēng le
BA bag towards up throw PERF
(Lee) threw the bag upwards.

e. Location + BA + Object + Path + Verb
(L + BA + O + P + V)
e.g., 在楼梯的下面把那个飞盘往上抛
zài lóutī de xiàmiàn bā nà gè fēipán wǎng shàng pāo
At stairs ASSOC below BA that CLA Frisbee towards up throw
(Lee) throws the frisbee upwards at the bottom of the stairs.

(61) a. Path + Verb + Object
(P + V + O)
e.g., 往上扔他的鞋子
wǎng shàng rēng tā de xiézi
towards up throw he ASSOC shoe
(Lee) throws his shoe upwards.

b. Source + Path + Ground + Verb + Object
(S + P + G + V + O)
e.g., 从楼梯下往楼梯上抛鞋
cóng lóutī xià wǎng lóutī shǎng pāo xié.
from stairs below towards stairs up throw shoe
(Lee) throws the shoe from the bottom of the stairs towards the top of the stairs.

c. Location + Path + Ground + Verb + Object
(L + P + G + V + O)
e.g., 在楼梯下往楼梯上扔飞盘
zài lóutī xià wǎng lóutī shǎng rēng fēipán
at stairs below towards stairs up throw Frisbee
(Lee) at the bottom of the stairs throws the frisbee towards the top of the stairs.

The sentence structures listed in (59) and (60) include the disposal marker BA, while the sentence structures in (61) do not consist of the disposal marker BA. In fact, all the BA structures in examples (59) and (60) may be transformed into their non-BA counterparts. By the same token, all the non-BA structures in example (61) may be changed into their BA counterparts. Note that not all the counterparts are completely natural in a context-
free situation, but they can be acceptable in certain contexts. The question of interest is why the native Chinese speakers chose one structure over the other in their descriptions. To answer this, we need to know how frequently the native Chinese speakers used the sentence structures listed in examples (59-61). In fact, the sentence structures in example (59) appeared the most frequently: 81% (292 out of 360). Among the three structures in example (59), the most frequently used was (59a) at 68%, while (59b) was 19%, and (59c) was 13%. All the sentence structures in examples (60) together appeared in 9% of the utterances, and all the sentence structures in examples (61) together appeared 10% of the utterances. Clearly, the majority of the sentences produced by the native Chinese speakers took the structure listed in (59a). Actually, (59b) and (59c) have the same fundamental structure as (59a). The difference lies in the additional information included in (59b) and (59c), that is, Source Path in (59b) and location of Agent in (59c). Similarly, all of the sentence structures in example (60) have an important characteristic in common, namely, Path information is not tied to Ground information. In structures (60a) and (60d), Ground information is not included. Meanwhile, in structure (60b), (60c) and (60e), Ground information is implied. Similarly, all the sentence structures in example (61) are similar in that they are all non-BA structures.

To understand why the native Chinese speakers employed the structure in (59a) most frequently, we will discuss the difference between (59) and the other two, i.e., (60) and (61). Then, we will examine the difference between (59) and its non-BA counterpart. Because Path is the most important information component in a motion event (Talmy, 1985; Ji et al., 2011), we will focus on how Path is encoded.
First, in terms of the difference between the examples in (59) versus (60) and (61), the Path information in (59) is more specific than the Path information included in (60) and (61). In (59), the Path information is very specific. We can see exactly how the Object is related to the Ground upon the completion of the motion. In (60) and (61), how Path is related to Ground is less specific, such that we cannot tell where the Object is in relation to the Ground upon the completion of the motion. For example, the sentence in (59a) tells us exactly where the Object “shoe” is when the motion is complete, i.e., on the other side of the road, whereas the sentence in (60a) does not specify how the Object is related to the Ground. Path words like 过去 (guò qù, to pass-go) in sentence (60a) are much less specific.

In terms of the difference between (60) and (61), the Path information in the former is relatively more specific than that in the latter. Typically, the Path information in (61) is encoded in prepositional phrases such as 往…上/下 (wǎng…shàng/xià, towards…up/down), which only gives a general direction of where the Object is heading towards in relation to the Ground. It remains unstated whether the action is completed or where the Object ends up. Second, let us turn to the difference between category (59) and its non-BA counterpart (62). The structure in example (62) can alternatively be represented as “V1 + Object + V2 + Ground” (V1 + O + V2 + G).

(62)  *Verb + Object + Path + Ground
(V + O + P + G)
e.g., 扔鞋到了路的对面
rēng xié dào le lù de duìmiàn
throw shoe arrive PERF road ASSOC opposite.
(Lee) throws the shoe to the opposite side of the road./(Lee walks) to the opposite side of the road while throwing shoes.
The native Chinese speakers did not use such a structure in their verbal production data, which indicates that this structure is inappropriate when expressing DT caused motion events in a context-free situation. Furthermore, if we look at this “V + O + P + G” or “V1 + O + V2 + G” structure more closely, we can see that this structure can potentially express two Path schemas. First, it can express the Object’s Path schema. Second, it can express the Agent’s Path schema. For the former, the Agent’s action V1 causes the Object to move from one point to another. For the latter, the Agent’s action V1 serves as an ongoing background action while the Agent travels from one point to another.

For example, the sentence in example (62) can be interpreted in two ways. First, the Agent throws the shoe and the shoe travels to the other side of the road. Second, the Agent travels to the other side of the road while throwing shoes. Thus, it is ambiguous in terms of whose Path it is: the Agent’s or the Object’s.

Now we turn to the advanced L2 Chinese learners’ verbal descriptions. The 360 utterances produced by the L2 learners take fourteen different sentence structures. Among the fourteen structures, nine of them did not appear frequently (< 5%), and these were excluded for further analysis. The remaining five structures are illustrated in (63).

(63)

*a. Verb + Object + Location marker + Ground
   (V + O + Loc + G)
   e.g., 扔鞋在楼梯上面
   rēng xié zài lóutī shàngmian
   throw shoe at stairs up
   [Intended meaning: (Lee) throws the shoe to the top of the stairs.]

*b. Verb + Object + Path + Ground
   (V + O + P + G)
   e.g., 推球到楼梯的上边
   tuī qiú dào lóutī de shàngbiān
   push ball arrive stairs up
   [Intended meaning: (Lee) pushes the ball to the top of the stairs.]
*c. BA + Object + Verb + Ground
(BA + O + V + G)
e.g., 把鞋扔楼梯上。
_bā xiè rēng lóutī shǎng_
BA shoe throw stairs up
[Intended meaning: (Lee) throws the shoe to the top of the stairs.]

d. BA + Object + Verb + Location marker + Ground
(BA + O + V + Loc + G)
e.g., 把飞碟扔在楼梯上
_bā fēidíē rēng zài lóutī shǎng_
BA frisbee throw at stairs up
(Lee) drops the frisbee at the top of the stairs.  
[Intended meaning: Lee throws the frisbee to the top of the stairs.]

e. BA + Object + Verb + Path + Ground
(BA + O + V + P + G)
e.g., 把这个包扔到楼梯下
_bā zhè ge bāo rēng dào lóutī xià_
BA this CLA bag throw arrive stairs down
(Lee) throws the bag to the bottom of the stairs.

More specifically, 18.6% of the utterances adopted the “V + O + Loc + G”
structure, 16.1% of them had the “V + O + P + G” structure, 11.4% the “BA + O + V + G”
structure, 10.3% the “BA + O + V + Loc + G” structure, and 30.8% the “BA + O + V + P
+ G” structure. Note that the “BA + O + V + P + G” structure is the one that is
predominantly used by native Chinese speakers. This shows that one-third of the
utterances were target-like, and that L2 learners employed a variety of non-target-like
structures.

Based on the complexity and the extent of nativelikeness, the five sentence
structures can be placed on a continuum, with structure (63a) as the least complex and

39 The verb 扔 (rēng, to throw) in Chinese may take divergent meanings depending on
the context. For example, it can mean “to throw”, “to drop” and “to discard”.

120
non-native-like and (63e) as the most complex and native-like. Of course we do not have evidence to claim that this is indicative of different learning stages among the L2 learners when acquiring expressions for DT caused motion events. However, we may discover certain problems and difficulties that the L2 learners have by examining the five structures. Specifically, we can divide the five structures into two broad categories based on whether or not the BA construction is employed: a “without-BA” category and a “with-BA” category. The structures in (63a) and (63b) belong to the “without-BA” category, and the structures (63c), (63d) and (63e) belong to the “with-BA” category. Excluding the most native-like structure, i.e., that shown in (63e), we can see that the without-BA category and the with-BA category share an important similarity in that the Path schema is not clearly expressed. The structures (63a), (63c) and (63d) do not provide Path information, and the structure in (63b) gives an ambiguous Path schema, which could be the Object’s or the Agent’s Path schema. Thus, regardless of whether a disposal structure is employed, the most common problem the learners had was determining how to appropriately provide a clear Path schema. In other words, they had difficulties in using a specific Path word to represent the moving trajectory of the Object in relation to its Ground accurately.

Among the five structures listed in (63a-e), that shown in (63b) (i.e., V + O + P + G) is the most English-like structure. Comparing this structure with the target-like structure in (63e) (i.e., BA + O + V + P + G), we can see that the former includes all the major information components without using a disposal construction. Moreover, the use of such a structure was correlated with total time of formal instruction, as the use of “V + O + P + G” structure and the formal instruction time the advanced L2 learners had
received were strongly correlated, $r(13) = .734$, $p = .002$. This tells us that the longer the L2 learners had received formal instruction in Chinese, the more frequently they used the English-like structure “V + O + P + G” in their descriptions of DT caused motion events in Chinese. Clearly, a result like this is rather strange. The question is why would they perform worse with more instruction. A possible speculation is that the formal instruction the learners had primarily focused on form, such as explaining the meaning of words and sentences using translation. Consequently, the L2 learners would habitually retrieve L1 sentence structures in L2 production.

5.8 Summary

In this chapter, I reported the results of a study on expressions involving DT caused motion events, using data elicited from three groups: a native English speaker group, a native Chinese speaker group and an advanced L2 learner group. After introducing the participants, stimuli and procedure of the study, I analyzed these three groups’ verbal descriptions of DT caused motion events from the following four perspectives: (a) the overall distribution of the key semantic constituents in Chinese compared with English; (b) the syntactic constructions employed when describing DT caused motion events in Chinese; (c) the locus of the Path constituent following both theoretical accounts (i.e., following Talmy by treating V2 as a satellite; following Slobin by treating V2 as a verb); and (d) teasing apart boundary-crossing and non-boundary-crossing events in the course of this analysis. The results showed that Chinese is S-framed when describing DT caused motion events. Furthermore, advanced L2 Chinese learners were not able to employ the
disposal construction in a fashion that was similar to that of native Chinese speakers. Instead, they employed a variety of sentence structures in their verbal production data, among which the use of the most English-like structure in their Chinese utterances was strongly correlated with the hours of formal instruction in Chinese.
CHAPTER 6. DISCUSSION, CONCLUSION AND IMPLICATIONS

6.1 Introduction

In this chapter, I will first discuss the major findings of my study as a whole. Based on these findings, I will draw conclusions regarding: (a) the typological classification of Chinese when describing DT caused motion events; and (b) problems and difficulties that advanced L2 learners have when expressing DT caused motion events and the relation of such challenges to thinking-for-speaking between English and Chinese. Following that, I will discuss various pedagogical implications by proposing a teaching method for DT caused motion events. Finally, I will discuss the contributions and limitations of this dissertation and provide recommendations for future studies.

6.2 Discussion and conclusion

6.2.1 Typological classification of Chinese

With a view to the first research question, my results have shown that Chinese displays S-framed properties when describing DT caused motion events, supported by four lines of evidence.

First, Chinese and English showed the same language-specific properties in the salience of various aspects of DT caused motion events, i.e., Cause = Path > Manner. The overall distribution of the three major information components was similar between these two languages. In each language, the frequencies of Cause and Path were not
significantly different, and Manner was significantly less expressed than both Cause and Path.

Second, Chinese and English packaged the Path component in a similar fashion. The Path component was predominantly encoded in a RVC in Chinese (90% for All events, 83.5% for Up/Down events, 94% for Across/Into events, 93% for Across events and 95% for Into events). In English, it was almost exclusively encoded in a preposition (99% for All events, 96% for Up/Down events, across/into 100%, 100% for Across/Into events, Across events and Into events). Setting aside the grammatical status of these two elements, we can see that how the Path is encoded in a RVC in Chinese bears a strong resemblance to the manner in which English encodes the same. In a RVC, the first element encodes Cause or Manner, and the second element encodes Path. In English, Cause or Manner is encoded in the first element (the main verb), and Path is encoded in the element that immediately follows.

Third, Chinese undisputedly displayed characteristics of an S-framed language in the “satellite” coding across all event types. Moreover, using the “verb” coding method, Chinese did not display either E-framed or V-framed properties. In an E-framed language, Path and Manner should be “equal in force or significance” (Slobin, 2004, p. 226). However, the results have shown that Manner was significantly less frequently expressed than Path in the native Chinese speakers’ production, indicating that these two components were not equal in significance.

Fourth, Chinese did not display V-framed properties in describing non-boundary-crossing and boundary-crossing events. Instead, Chinese displayed V-framed properties when analyzed according to the “verb” coding scheme. Specifically, the Object’s Path
was predominantly encoded via VERB, and Manner was much less frequently encoded in the “verb” coding, showing V-framed properties. However, further analysis didn’t provide additional support for such a possibility. An important feature of a V-framed language, such as Spanish, is that the conflation of Motion and Manner into the main verb can only appear in non-boundary-crossing contexts (e.g., Up and Down), whereas in boundary-crossing contexts (e.g., Across and Into), Manner must be expressed in a separate constituent. The results in this dissertation have clearly shown that Manner, if expressed, was conflated with Motion in the main verb for both non-boundary-crossing and boundary-crossing motion events, regardless of which coding method, “satellite” or “verb”, was used.

Given the four reasons presented above, this study provides support for the view that Chinese is S-framed when describing DT caused motion events. Moreover, the typological properties of Chinese are constrained by the types of motion events involved. This dissertation has added to the existing literature by teasing apart ST and DT caused motion events, a step that has highlighted the importance of, first, determining whether or not an external force is involved in the motion events needs to considered, and second, determining the role to which the Agent and the Object taking the same trajectory may play a role in encoding. More specifically, when expressing voluntary motion events, Chinese is S-framed (Ji et al., 2009), but when expressing ST caused motion events, Chinese is simultaneously S-framed and V-framed, and when expressing DT caused motion events, Chinese is S-framed.

Additionally, the findings in this dissertation have shown that the dimensionality of the Ground may play an important role in event descriptions. This can be seen in the
fact that Manner was often encoded for the boundary-crossing event *Across*, rarely expressed for the non-boundary-crossing events *Up* and *Down* and not expressed at all for the boundary-crossing event *Into*. Apparently, the mere distinction of whether a motion event is boundary-crossing or non-boundary-crossing cannot fully explain such phenomena. Based on the features of the event types, the dimensionality of the Ground may have played an important role in the Manner encoding. According to Talmy (2000), all physical objects can be idealized into the following four categories: a point (zero-dimensional), a line (one-dimensional), a plane (two-dimensional), and a volume (three-dimensional). The results discussed in this dissertation suggest that the frequency of use for Manner may be related to the Ground’s dimensionality. Among the three categories of motion events examined in this dissertation (i.e., *Up/Down, Across* and *Into*), only the Ground of *Into* events was three-dimensional. Moreover, in the descriptions of *Into* events, Manner was not encoded at all. It is possible that this was due to the fact that the external Cause and the Path were so much more salient than Manner in the *Into* events. If that is the case, future studies should examine *Into* events in more detail across languages, which would help discover the relationship between dimensionality and expressions of motion events.

6.2.2 Thinking-for-speaking between English and Chinese

Previous studies have focused on the investigation of typologically different L2s, as it has been assumed that learners should not have difficulties in acquiring a typologically similar L2. This may be true in circumstances where the languages do not differ in how specific the information components are, but the findings reported in this
dissertation have shown that such an assumption is rather premature in the case of English and Chinese.

Even though both Chinese and English are both S-framed when expressing DT caused motion events, Chinese is different from English in that the former has more specific requirements for the most essential information component, Path. More specifically, the Path information selected at the macro-planning stage must be both specific and resultative in Chinese. Furthermore, such specific and resultative Path information must be associated with a disposal construction at the micro-planning stage. Clearly, the thinking-for-speaking patterns between Chinese and English differ at both the macro-planning stage and the micro-planning stage, even though both languages are S-framed. English learners of Chinese must therefore learn to include specific Path components at the macro-planning stage. Following that, they must choose the proper form for the Chinese disposal construction, a construction that does not exist in their native language English. Below I will explain how the results in this dissertation speak to these differences.

To begin, consider the differences between the most frequently used sentence structure produced by the native Chinese speakers (i.e., BA + O + V + P + G) and the sentence structures produced by the advanced L2 learners (i.e., V + O + Loc + G; V + O + P + G; BA + O + V + G; BA + O + V + Loc + G). The major difference between the target structure and the non-native-like structures lies in the characteristics of the Path component. First, the Path information for the target structure is specific and resultative, thus indicating the relationship between the Object and the Ground upon the completion of the motion. Second, the target structure clearly shows the Object’s Path schema, i.e.,
whether or not it can also be interpreted as the Agent’s Path. The Path information
encoded in the target structure “BA + O + V + P + G” shows specific Path information,
and it clearly indicates that the Object, by itself or with another entity, has arrived at the endpoint.

We know that the BA construction may be used in both DT and ST caused motion events. It can exclusively express the Object’s Path in DT caused motion events, or it can express the Path simultaneously taken by the Agent and the Object in ST caused motion events.\(^{40}\) In most cases, the nature of the action involved in DT caused motion events helps indicate that there is only one possible Path schema, that the Path is exclusively the Object’s Path. The sense of an action verb can play a role in the interpretation of such Path information, as the Path can be interpreted as taken either by the Object or by the Object and the Agent. In this dissertation, the most frequently used action verb was “扔 \(rēng\), to throw” in Chinese.\(^{41}\) The second most frequently used action verb was 踢 (\(tī\), to kick).\(^{42}\) When exerting an external force by throwing or kicking, the Agent must let the Object be dislocated from the original source of force, i.e., the Agent himself. Thus, this leaves only one possibility for the Path schema, i.e., to express the Object’s Path. In cases where the Path schema can be interpreted as simultaneously taken by both the Agent and the Object (e.g., in a ST caused motion event), the Object’s Path is still clearly

\(^{40}\) Ji et al. (2011) showed that the BA construction is used to express ST caused motion events.

\(^{41}\) The verb 揹 (\(rēng\), to throw) appeared in 60.7% of all the action verbs used by the native Chinese speakers and 65% among all the action verbs used by the L2 learners. See Appendix R for details.

\(^{42}\) The verb 踢 (\(tī\), to kick) appeared in 15.2% of all the action verbs used by the native Chinese speakers and 16.8% among all the action verbs used by the L2 learners.
indicated. For these reasons, we can say that the Path information provided in a BA construction clearly expresses the Object’s Path, with or without the Agent’s simultaneous motion.

On the contrary, the non-target-like sentence structures used by the L2 learners (with BA or without BA) do not provide specific Path information. Two problems exist. First, the Path words in the non-target-like structures are rather general. Second, the Path information may be interpreted as either the Object’s Path or the Agent’s Path. Thus, the major problem in the non-target-like structures is that the Path information is not specific. Clearly, the L2 Chinese learners had difficulties when attempting to use a specific Path word to accurately represent the moving trajectory of the Object in relation to its Ground.

Up to this point, we have seen two problems the L2 learners had: (a) the inclusion of specific Path information; and (b) the use of the disposal construction. These two are interrelated in expressions of DT caused motion events. To find how this works, we need to consider the features of the BA-structure that was most frequently used by the native Chinese speakers. Specifically, we will look at the difference between the BA-structure and the non-BA-structure and also the difference between the two types of BA sentence structures used by the native Chinese speakers.

First, the Path information is more specific in the BA structures as compared to the non-BA structures. Second, between the most frequently used BA structure (BA + O + V + P + G) and the less frequently used one (BA + O + V + P), the former gives more

---

43 The third most frequently used action verb in Chinese was 推 (tuī, to push). It appeared in 9.9% of all the action verbs used by the native Chinese speakers and 12.3% of all the action verbs used by the L2 learners. When this verb is used to express a ST caused motion event, the Agent is moving along the trajectory with the Object while pushing. When this verb is used to express a DT caused motion event, the Agent stays at the original place, and the Object moves along the trajectory. In either case, the Object’s trajectory is clear.
specific Path information than the latter. The specific Path information in the former structure displays a result of the action, and it is resultative. On the contrary, the Path information in the latter structure is not necessarily resultative. This has shown that the specificity and resultativeness of the Path information is associated with the disposal effect in the BA structure “BA + O + V + P + G” that was most frequently used by the native Chinese speakers.

Clearly, the nature of the Path component is a concern at the macro-planning stage for the native Chinese speakers. More specifically, the Path component in a DT caused motion event must meet the following two criteria: (a) it must be resultative, from which one can see the result of the action upon the completion of the motion; and (b) it must be specific, which clearly expresses the Object’s Path schema in the context-free situation. The disposal structure “BA + O + V + P + G” can fulfill such criteria for the Path component in the following ways.

First, the RVC in a disposal construction consists of two elements, and “the second element signals some result of the action or process conveyed by the first element” (Li & Thompson, 1981, p. 55). When describing a DT caused motion event, the second element signifies the Path of the event. Since the second element in a RVC must signal some result of the action, it can clearly show that the Path information is resultative.

Second, in a disposal construction, the disposal “has to do with what happens to the direct object” (Li & Thompson, 1981, p. 468). When describing a DT caused

---

44 Li & Thompson (1981) noted that each of the two elements in a RVC can be a compound itself.

45 In a BA or JIANG construction, the direct object is the noun phrase that immediately follows BA or JIANG. In a BEI construction, the direct object takes the sentence-initial position.
motion event, the focus is given to what happens to the Object of the event. Thus, the core information of the Object (i.e., Path) must be indicated.46

Now let us reconsider the two stages in thinking-for-speaking. Since previous L2 studies have mainly focused on the acquisition of motion events between two typologically different languages, this investigation has been centered on how the same information components (e.g., Path, Manner) can be included when describing L2 motion events. The results described in this dissertation have shown that the difference between two typologically similar languages also plays a role in event acquisition.

From the perspective of thinking-for-speaking, learners’ L1 thinking-for-speaking bears similarities to their L2 thinking-for-speaking at a general level, i.e., including the major information component as frequently as in the target language. However, these two languages differ in the specifics encoded by the core information component, Path. First, the Path component in L2 Chinese must be specific and resultative. Second, it must be associated with a disposal effect. Thus, at the macro-planning stage, the native Chinese speakers not only decide which major information components are to be included but also how specific the Path information has to be. In other words, at this stage they have decided to include a specific and resultative Path component. Then, at the micro-planning stage, a disposal construction is selected to encode the major information components and to indicate that the Path is specific and resultative. Conversely, the learners’ L1 English does not emphasize whether or not the Path component is specific or resultative, and the Path component that is selected at the macro-planning stage is more general. At

46 As we know, disposal constructions can also be used to describe ST caused motion events, in which the Agent takes the same Path as the Object. However, it is optional as to whether the Agent takes the same trajectory as the Object, and the focus is on the Object.
the micro-planning stage, the English sentence structure “V + O + P + G” is sufficient to deliver such information. Note that English uses the same structure to express general or specific Path information. Therefore, the selection process in English is less complicated. In sum, the thinking-for-speaking patterns of English and Chinese are different, even though both of them are S-framed languages when describing DT caused motion events.

The findings reported in this dissertation have important implications for SLA research pertaining to the learning of motion events. First, solely examining the frequency of the information components is not sufficient for a full understanding of L2 learners’ acquisition of motion events. Second, the nuanced differences between the two languages can create major problems for L2 learners. Taken together, these results show that two typologically similar languages do not necessarily employ the same thinking-for-speaking pattern.

6.3 Pedagogical implications

There are two major differences between English and Chinese thinking-for-speaking patterns. First is the selection of Path words. Second is the use of the disposal construction. For the selection of Path words, learners did not encode the Path component as frequently as native Chinese speakers did. Instead, they substituted locative information for a considerable amount of Path information. As for the use of the disposal construction, the learners did not use this construction as frequently as did the native Chinese speakers either. In the BA structures they employed, they did not always include a Path component.
The native Chinese speakers’ verbal production data show that the specific Path information is closely associated with the disposal construction. To present such an association to learners, we need to show them three things: (a) what kind of motion does not involve a Path component; (b) what kind of motion involves a general Path; and (c) what kind of motion involves a specific and resultative Path. Presumably, if the perceiver does not see the Path of the Object in a caused motion event, the Path component does not need to be expressed, as the emphasis is on the action itself. If the perceiver only sees the general direction of the Object, he or she only needs to provide general Path information. Finally, if the perceiver clearly sees the endpoint of the Object upon the completion of the motion, it is best that he or she provides specific and resultative Path information.

Here I propose a way to show these distinctions to learners via different stages.\textsuperscript{47} To ensure authenticity, we draw upon sentence structures from the native Chinese speakers’ verbal production, as shown in Table 6.1.\textsuperscript{48} Clearly, these five types of sentences may be arranged on a continuum from the simplex to the most complex in terms of the number of information components involved.

I recommend that all the motion events be introduced with story videos, such that different aspects of the events can be emphasized. At the “Motion only” stage, the focus of the videos should be on the action. An example story video could depict a scene in which a person’s old ball does not bounce well. When he gets a new ball, he throws away (discards) the old ball. Here “discarding the ball” is the focus. In this video, it is not

\textsuperscript{47} The five stages can be taken as a general guideline for classroom teaching, and not every student might necessarily have to go through all the stages on the continuum.

\textsuperscript{48} Note that not all example sentences are from the native Chinese speakers’ verbal production. However, all the sentence structures appeared in the native Chinese speaker’s data.
necessary to show where he throws the ball. A similar action is to show a person eating something (e.g., noodles). In a scenario like this, the perceiver does not need to emphasize that the noodles have gone to the person’s stomach.

Table 6.1 Stages of Learning DT Caused Motion Events

<table>
<thead>
<tr>
<th>Stage</th>
<th>Example</th>
</tr>
</thead>
</table>
| 1. Motion only                | 把球扔了  
*bā qiú rēng le*  
BA ball throw PERF  
(He) discarded the ball. |
| 2. Motion + general Path      | 把球往上扔  
bā qiú wǎng shàng rēng  
BA ball towards up throw  
(He) throws the ball upwards. |
| 3. Motion + general Path + Ground | 把球往楼梯上扔  
bā qiú wǎng lóutī shàng rēng  
BA ball towards stairs up throw  
(He) throws the ball towards the top of the stairs. |
| 4. Motion + specific Path + Ground | 把球扔到楼梯上  
bā qiú rēng dào lóutī shàng  
BA ball throw arrive stairs up  
(He) throws the ball to the top of the stairs. |
| 5. Motion + Source + specific Path + Ground | 把球从楼梯的下面扔到楼梯的上面  
*Bā qiú cóng lóutī de xiàmiàn rēng dào lóutī de shàngmiàn*  
BA ball from stairs ASSOC below throw  
arrive stairs ASSOC up  
(He) throws the ball from the bottom of the stairs to the top of the stairs. |

At the “Motion + general Path” stage, the focus of the story video is on the general Path. To reinforce this, we can show learners different general Paths. An example scenario could show a group of boys who compete with each other on who can throw a ball the highest. They take turns throwing a ball towards the sky. In contrast, another
video could show people throwing an object towards a different direction, such as towards the bottom of a cliff. In the videos, learners cannot see whether or not the Objects have landed at an endpoint.

At the “Motion + general Path + Ground” stage, the focus is still on the general Path, but with a clear destination (Ground). An example story video could show a group of volunteers help collect Ping-Pong balls after a game and throw them into a box. Some balls fall into the box and some fall out of the box. In this video, we emphasize the effort of the volunteers.

At the “Motion + specific Path + Ground” stage, the focus is on the specific Path. The videos must show exactly how the Object is related to the Ground upon the completion of the motion. In this connection, we can use the test stimuli from this dissertation embedded in a story. The emphasis is on where the Object finally ends.49

At the “Motion + Source + specific Path + Ground” stage, the focus is on the whole trajectory of the Object: from the Source Path to the specific and resultative Goal Path. To draw learners’ attention to the Source Path, we can use videos that depict the same Goal path but with different Source Paths. An example video could show a person first throwing a ball from the bottom of the stairs to the top of the stairs. After that, he throws a ball from the midpoint of the stairs to the top of the stairs. The contrast could draw the learners’ attention to the Source Path.

49 At this stage, we could also differentiate between locative information and Path information. In this dissertation, the typical location marker is 在 (zài, at/in/on), as in 在楼梯上 (zài lóutī shàng, at/stairs-up, on the stairs). The most frequently used Path word is 到 (dào, to arrive), as in 到楼梯上 (dào lóutī shàng, to/stairs-up, to the top of the stairs). Such a difference can be illustrated with motion events: (a) drop a ball on the floor; and (b) throw the ball to the other side of the classroom.
Likewise, the stages listed above can be adapted for the teaching of the JIANG construction and the BEI construction. The JIANG construction normally occurs in situations where a sense of antiquity needs to be expressed or in situations where procedures are described (Tao, 1999, 2007). To illustrate JIANG, the stories of the videos could be situated in antiquated environments such as traditional Chinese martial arts stories or procedural discourse such as cooking procedures. Since the BEI construction is associated with adverse situations (Li & Thompson, 1981), the videos could be prepared to express unpredicted events such as incidental motion events (e.g., an Agent accidentally knocks a lunch box into water).

Bhardwaj, Dietrick, and Noyau (1988) assert that adult learners normally make an effort to discover the similarities between their L2 and L1 while learning a specific aspect of their L2. When such a similarity cannot be found, they will try to construct a new system. This new system they establish is inevitably a hybrid one that resembles certain features of both languages but is identical to neither of them. The findings discussed in this dissertation confirm such a claim. Specifically, the learners created hybrid structures that were identical to neither English nor Chinese, such as employing a BA construction without including any Path information.

Some grammatical categories that are absent in learners’ L1 are more obvious and can be constructed more easily (e.g., singular vs. plural), whereas others are less apparent and more difficult to construct (e.g., aspect and definiteness) (Slobin, 1996a). The disposal effect is a rather complex one. To help learners acquire this construction, it is important to direct the learners’ attention to how Path is represented in a disposal construction in Chinese, as demonstrated in the teaching method illustrated above.
Additionally, the findings discussed in this dissertation have also shown that the use of the “V + O + P + G” structure was positively correlated with the time of formal instruction for the advanced L2 learners (see section 5.7). As we can see, the “V + O + P + G” structure is an English-like structure. Without knowing details of the learners’ formal instruction, it is difficult to explain such a phenomenon. As noted earlier, a possible speculation is that the formal instruction the learners had focused on form, such as explaining the meaning of words and sentences using translation (see section 5.7.8). A helpful addition would be to direct the learners’ attention to how Chinese speakers may perceive motion events differently, such as by employing the teaching method proposed in this section.

6.4 Contributions of this dissertation

This dissertation has made two major contributions. First, it contributed to the field of cross-linguistic studies by showing that Chinese is S-framed when describing DT caused motion events. On the basis of previous studies, this dissertation provided a thorough examination of the typological properties of Chinese vis-à-vis the expression of DT caused motion events. More importantly, it took an unbiased approach and provided supporting evidence from various aspects, including the overall distribution of information components, the coding of the data from both of the two major theoretical perspectives and the teasing apart of boundary-crossing and non-boundary-crossing events.
Second, this dissertation has contributed to the field of SLA by underscoring the
necessity of examining differences between typologically similar languages. Further, it
has shown that speakers of typologically similar languages do not necessarily employ
identical thinking-for-speaking patterns. Previous studies have focused mainly on the
acquisition of typologically different L2s by examining the inclusion of major
information components. This dissertation has shown that solely examining the inclusion
of such information components is insufficient for a full account of motion event
expressions.

6.5 Limitations of this dissertation

This dissertation only covered the DT caused motion event expressions in
context-free situations. Future studies may look into more complicated motion events in
various contexts, such as a series of events on an event chain, with or without specific
contexts. Furthermore, it would be interesting to compare two serial verb languages (e.g.,
Chinese and Thai) to see how they express different types of motion events, including
voluntary motion events, ST caused motion events and DT caused motion events.

6.6 Summary

In this chapter, I first discussed the study presented in chapter 5. Based on the
major findings, I made two major conclusions. First, Chinese is S-framed when
describing DT caused motion events. Second, even though both Chinese and English are
S-framed when expressing DT caused motion events, the thinking-for-speaking patterns are different between these two languages. Specifically, the Path information in Chinese must be specific and resultative, and it must be associated with a disposal construction. Following that, I discussed pedagogical implications and proposed a new teaching method. Finally, I discussed the contributions and limitations of this dissertation and provided recommendations for future studies.
Appendix A: Consent form for native English speakers

University of Hawaii

Consent to Participate in Research Project:

Motion events, typological classification of Chinese and their acquisition

My name is Jing Z. Paul, a PhD student at the University of Hawaii at Manoa (UH) in the Department of East Asian Languages and Literatures. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to investigate how different languages describe motion events. I am asking you to participate because you are a native speaker of English who do not speak any other languages fluently.

Activities and Time Commitment: If you participate in this project, I will meet with you at a location and time convenient for you. You will first fill out a simple language background questionnaire, and it will take 2-3 minutes. Then you will watch short videos and each video lasts 2-10 seconds. After each video, you will verbally describe it, and it will take 20-25 minutes. I will audio-record your descriptions so that I can later transcribe and analyze them. You will be one of about 20 people whose have the same background as you participating in the study.

Benefits and Risks: There will be no direct benefit to you for participating in this project. I hope, however, that the results of this project will help researchers understand more about the descriptions of motion events and thus benefit future research studies. I believe there is little risk to you in participating in this research project. If however, you become stressed or uncomfortable during the process, you can take a break or withdraw from the project.

Privacy and Confidentiality: During this research project, I will keep all data in a secure location. Only I will have access to the data, although legally authorized agencies, including the UH Human Studies Program, can review research records. After I transcribe the descriptions, I will erase/destroy the audio-recordings. When I type and report the results of my research project, I will not use your name or any other personally identifying information. Rather I will report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

50 The title of the project has been changed to “Expressions of different-trajectory caused motion events in Chinese”.

141
**Voluntary Participation:** Your participation in this project is completely voluntary. You may stop participating at any time without penalty or loss.

As compensation for time spent participating in the research project, I will provide you $10.

If you have any questions about this research project, please email me at jzhan2@hawaii.edu. If you have any questions regarding your rights as a research participant, please contact the UH Human Studies Program, by phone at (808)956-5007, or uhirb@hawaii.edu.

If you agree to participate in this project, please sign and date this signature page and return it to:

**Jing Z. Paul, Principal Investigator**

**Signature:**

I have read and understand the information provided to me about participating in the research project, Motion events, typological classification of Chinese and their acquisition.

- [ ] I agree to be audio recorded.
- [ ] I refuse to be audio recorded.

My signature below indicates that I agree to participate in this research project.

Printed name: ________________________________

Signature: ________________________________
Appendix B: Consent form for native Chinese speakers

美国夏威夷大学

参与研究同意书

项目名称:

动作描写、汉语的分类和动作描写的习得

Motion events, typological classification of Chinese and their acquisition\textsuperscript{51}

我叫 Jing Z. Paul, 是美国夏威夷大学东亚语言文学系的博士生。作为学位要求的一部分，我在做一个研究项目。这个项目的目的是调查不同的语言是如何描写动作的。我请你参加这个项目是因为你不但说普通话，也会说一个地域方言。

活动和时间：如果你参加这个项目，我会跟在一个对你来说很方便的时间和地点见面。你先填一个很简单的关于你的语言背景的表，大概花 2-3 分钟。然后你会看短小的录像，每个录像大概 2 秒到 10 秒。每看完一个录像，你口头描述这个录像，大概花 20-25 分钟。你的描述我会录音，这样我以后可以把你的口头录音转录成文字做分析。你这个组里会有大概 20 个跟你背景差不多的人参加这个项目。

益处和风险：参加这个项目对你个人来说没有益处。但是，我希望这个项目的成果可以帮助研究人员更多地理解动作描写，从而进一步帮助未来的研究。我相信参加这个项目对你来说没有风险。但是，如果你在这个过程中觉得有压力或者不舒服，你可以休息一下或者退出。

隐私和保密性：在做这个研究项目的过程中，我会把所有的信息保存在一个安全的地方。只有我个人知道这些信息的存储处。当然，有法律权利的相关机构，比如说夏威夷大学人类学习项目处也有权利查看这些信息。在转录这些口头描写之后，我会删除 / 销毁所有的录音。在我打字和报告研究项目的结果的时候，我不会用你的名字或者任何可以跟你个人联系起来的信息。我会用在法律允许条件下的方式来保护你的隐私和保密信息。

\textsuperscript{51} The title of the project has been changed to “Expressions of different-trajectory caused motion events in Chinese”.
自愿参与性：你参加这个项目完全是自愿的。你可以在任何时候停止参与，这样对你不会有任何的惩罚，你也不会失去什么。

为了补偿你花时间参与这个研究项目，我会付给你 15 块人民币。

要是你对这个研究项目有什么问题，请给我发电子邮件到：jzhan2@hawaii.edu。要是你对你个人作为一个参与者的权利有问题，你可以联系夏威夷大学人类学习项目处，电话是(808)956-5007，或者发电子邮件到 uhirb@hawaii.edu。

要是你同意参加这个项目，请签字、写上日期并且还给下面的调查人。

主要调查人：Jing Z. Paul

签名：

我已经读了而且理解了上面所提供的关于这个研究项目的信息：动作描写、汉语的分类和动作描写的习得(Motion events, typological classification of Chinese and their acquisition)。

☐ 我同意给我的口头描述录音。

☐ 我拒绝给我的口头描述录音。

我下面的签名证明我同意参加这个研究项目。

我的名字：_________________________________

我的签名：_________________________________
Appendix C: Consent form for L2 Chinese learners

University of Hawaii

Consent to Participate in Research Project:

*Motion events, typological classification of Chinese and their acquisition*\(^52\)

My name is Jing Z. Paul, a PhD student at the University of Hawaii at Manoa (UH) in the Department of East Asian Languages and Literatures. As part of the requirements for earning my graduate degree, I am doing a research project. The purpose of my project is to investigate how different languages describe motion events. I am asking you to participate because you are a learner of Mandarin Chinese who have learned Chinese for minimum two years.

**Activities and Time Commitment:** If you participate in this project, I will meet with you at a location and time convenient for you. You will first fill out a simple language background questionnaire, and it will take 2-3 minutes. Then you will watch short videos and each video lasts 2-10 seconds. After each video, you will verbally describe it, and it will take 20-25 minutes. I will audio-record your descriptions so that I can later transcribe and analyze them. You will be one of about 20 people whose have the same background as you participating in the study.

**Benefits and Risks:** There will be no direct benefit to you for participating in this interview. I hope, however, that the results of this project will help researchers understand more about descriptions of motion events and thus benefit future research studies. I believe there is little risk to you in participating in this research project. If however, you become stressed or uncomfortable during the process, you can take a break or withdraw from the project.

**Privacy and Confidentiality:** During this research project, I will keep all data in a secure location. Only I will have access to the data, although legally authorized agencies, including the UH Human Studies Program, can review research records. After I transcribe the descriptions, I will erase/destroy the audio-recordings. When I type and report the results of my research project, I will not use your name or any other personally identifying information. Rather I will report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

**Voluntary Participation:** Your participation in this project is completely voluntary. You may stop participating at any time without penalty or loss.

---

\(^52\) The title of the project has been changed to “Expressions of different-trajectory caused motion events in Chinese”.

145
As compensation for time spent participating in the research project, I will provide you $10.

If you have any questions about this research project, please email me at jzhan2@hawaii.edu. If you have any questions regarding your rights as a research participant, please contact the UH Human Studies Program, by phone at (808)956-5007, or uhirb@hawaii.edu.

If you agree to participate in this project, please sign and date this signature page and return it to:

Jing Z. Paul, Principal Investigator

Signature:

I have read and understand the information provided to me about participating in the research project, Motion events, typological classification of Chinese and their acquisition.

☐ I agree to be audio recorded.

☐ I refuse to be audio recorded.

My signature below indicates that I agree to participate in this research project.

Printed name: ________________________________

Signature: ___________________________________
Appendix D: Background questionnaire for native English speakers

1. Your native language: □ English □ Other (specify) ______________
2. Your country of origin: □ U.S.A. □ Other (specify) ______________
3. Your gender: □ Male □ Female
4. Your age: _____________
5. Do you speak any other languages fluently?
   □ Yes __________________________ (specify) □ No
6. Have you ever learned any other languages?
   □ Yes __________________________ □ No
7. If your answer is Yes to question #6, list all other language courses you have taken, including the one you are taking now, if applicable. If you didn’t learn it in school, please specify how.

<table>
<thead>
<tr>
<th>Language</th>
<th>Length of study</th>
<th>Semester/Year</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E: Background questionnaire for native Chinese speakers

语言背景调查

1. 你的母语是什么？ □ 中文 □ 其它________

2. 性别 □ 男 □ 女

3. 年龄________

4. 你老家是哪里？（你在哪里长大？）________省________市（县）

5. 你会说什么方言？________

6. 你觉得你的方言地道吗？请用一个数字（0－5）来给自己的方言打分（0代表不会说，5代表说得非常地道）。

7. 你觉得你的普通话说得怎么样？请用一个数字（0－5）来给自己的普通话打分（0代表不会说，5代表说得非常好）。

8. 如果你会说方言，你觉得你的方言跟普通话在语法上相似吗？请用一个数字（0－5）来表达（0表示完全不一样，5表示完全一样）。

9. 你现在在学校上课与日常生活主要用什么话交流？
   □ 普通话 □ 武汉话 □ 其它________

10. 你能够流利地说其它的语言吗？
    □ 能________（什么语言_________） □ 不能________

11. 你出过国吗？
    □ 出过（哪儿__________多久__________） □ 没出过

12. 你学过外语吗？
    □ 学过__________ □ 没学过__________
13. 要是你学过外语，请填写下表（包括你目前正在学习的外语）。

<table>
<thead>
<tr>
<th>语言</th>
<th>每星期几节课</th>
<th>每节课多长</th>
<th>学习范围</th>
<th>学了多长时间</th>
<th>在哪儿学的</th>
</tr>
</thead>
<tbody>
<tr>
<td>例子：英语</td>
<td>6 节</td>
<td>45 分钟</td>
<td>听说读写</td>
<td>两年</td>
<td>小学四年级到五年级</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: Background questionnaire for L2 Chinese learners

1. Your native language: □ English □ Other (specify) ______________

2. Your gender: □ Male □ Female

3. Your age: _____________

4. Does anyone in your family speak Chinese at home?
   □ Yes (specify) ______________ □ No

5. Do you speak Chinese at home with any of your family members?
   □ Yes (specify) ______________ □ No

6. Have you ever been to China or Taiwan?
   □ Yes
   First time: Where ___________ When ___________ For how long _________
   Second time: Where ___________ When ___________ For how long _________
   □ No

7. Fill out the following table based on your own experience, including the Chinese class you are taking now, if applicable. If you didn't learn it in school, please specify how.

<table>
<thead>
<tr>
<th>Chinese course</th>
<th>Time in class each week</th>
<th>Textbook used</th>
<th>Areas evaluated</th>
<th>School</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: CHN101</td>
<td>200 minutes</td>
<td>Integrated Chinese</td>
<td>Listening, Speaking, Reading &amp; Writing</td>
<td>UH Manoa</td>
<td>Fall 2010</td>
</tr>
</tbody>
</table>
### Appendix G: Native English speakers’ background information

<table>
<thead>
<tr>
<th>#</th>
<th>Age</th>
<th>Native language</th>
<th>Other languages learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>English</td>
<td>Chinese, 3 semesters</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>English</td>
<td>Japanese, 6 semesters</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>English</td>
<td>Japanese, 6 years; Chinese, 2 years</td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>English</td>
<td>Latin, 4 semesters; Japanese, 1 year</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
<td>English</td>
<td>Japanese, 4 semesters</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>English</td>
<td>Japanese, 4 years; Chinese, 4 years</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>English</td>
<td>Latin, 5 semesters; Greek, 3 semesters</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>English</td>
<td>Japanese, 1 year</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>English</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>24</td>
<td>English</td>
<td>French, 1 year; Spanish, 1 year</td>
</tr>
<tr>
<td>11</td>
<td>23</td>
<td>English</td>
<td>German, 2 years</td>
</tr>
<tr>
<td>12</td>
<td>45</td>
<td>English</td>
<td>French, 2 years; Spanish, 2 years</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>English</td>
<td>Chinese, 3 semesters</td>
</tr>
<tr>
<td>14</td>
<td>22</td>
<td>English</td>
<td>Korean, 2 semesters; Chinese, 2 years</td>
</tr>
<tr>
<td>15</td>
<td>21</td>
<td>English</td>
<td>Spanish, 4 semesters</td>
</tr>
</tbody>
</table>
Appendix H: Native Chinese speakers’ background information

<table>
<thead>
<tr>
<th>#</th>
<th>Age</th>
<th>Dialect (City, Province)</th>
<th>Dialect 0-5</th>
<th>Mandarin 0-5</th>
<th>Similarity</th>
<th>Other language Y=Yes; N=No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>Chengdu, Sichuan</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>Huanggang, Hubei</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>Y, English</td>
</tr>
<tr>
<td>3</td>
<td>23</td>
<td>Wuhan, Hubei</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>Y, Huangpi, Hubei</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>Jingzhou, Hubei</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>24</td>
<td>Linyi, Shandong</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>Y, Jinan, Shangdong</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>E’erwus, Neimenggu</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>N</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
<td>Guangshui, Hubei</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>24</td>
<td>Kaifeng, Henan</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>Fuyang, Anhui</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>Y, Chongqing, Sichuan</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
<td>Weiwu, Gansu</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>11</td>
<td>26</td>
<td>Hebei</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>N</td>
</tr>
<tr>
<td>12</td>
<td>23</td>
<td>Shangqiu, Henan</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>Y, English</td>
</tr>
<tr>
<td>13</td>
<td>26</td>
<td>Bijie, Guizhou</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>N</td>
</tr>
<tr>
<td>14</td>
<td>24</td>
<td>Yongzhou, Hunan</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>15</td>
<td>25</td>
<td>Huanggang, Hubei</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>Y, English</td>
</tr>
</tbody>
</table>
Appendix I: Advanced L2 Chinese learners’ background information

<table>
<thead>
<tr>
<th>#</th>
<th>Age</th>
<th>Chinese heritage</th>
<th>Instruction time in Chinese</th>
<th>Time in mainland China/Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36</td>
<td>N</td>
<td>2160 minutes</td>
<td>312 weeks</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>N</td>
<td>19200 minutes</td>
<td>11 weeks</td>
</tr>
<tr>
<td>3</td>
<td>23</td>
<td>N</td>
<td>32000 minutes</td>
<td>13 weeks</td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>N</td>
<td>22400 minutes</td>
<td>28 weeks</td>
</tr>
<tr>
<td>5</td>
<td>31</td>
<td>N</td>
<td>14400 minutes</td>
<td>64 weeks</td>
</tr>
<tr>
<td>6</td>
<td>31</td>
<td>N</td>
<td>22400 minutes</td>
<td>20 weeks</td>
</tr>
<tr>
<td>7</td>
<td>22</td>
<td>N</td>
<td>20000 minutes</td>
<td>0 weeks</td>
</tr>
<tr>
<td>8</td>
<td>34</td>
<td>N</td>
<td>17520 minutes</td>
<td>16 weeks</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>N</td>
<td>31200 minutes</td>
<td>76 weeks</td>
</tr>
<tr>
<td>10</td>
<td>21</td>
<td>N</td>
<td>18340 minutes</td>
<td>12 weeks</td>
</tr>
<tr>
<td>11</td>
<td>42</td>
<td>N</td>
<td>23200 minutes</td>
<td>16 weeks</td>
</tr>
<tr>
<td>12</td>
<td>35</td>
<td>N</td>
<td>62400 minutes</td>
<td>0 weeks</td>
</tr>
<tr>
<td>13</td>
<td>26</td>
<td>N</td>
<td>23040 minutes</td>
<td>24 weeks</td>
</tr>
<tr>
<td>14</td>
<td>22</td>
<td>N</td>
<td>16320 minutes</td>
<td>12 weeks</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
<td>N</td>
<td>144000 minutes</td>
<td>18 weeks</td>
</tr>
</tbody>
</table>
Appendix J: Descriptions of the test items in English

1. Lee threw the shoe up the stairs.
2. Lee threw the ball up the stairs.
3. Lee threw the frisbee up the stairs.
4. Lee threw the bag up the stairs.
5. Lee threw the ball down the stairs.
6. Lee threw the shoe down the stairs.
7. Lee threw the frisbee down the stairs.
8. Lee threw the bag down the stairs.
9. Lee threw the shoe across the road.
10. Lee pushed the stroller across the road.
11. Lee threw the tennis racket across the road.
12. Lee rolled the ball across the road.
13. Lee kicked the ball into the pool.
14. Lee threw the tennis racket into the pool.
15. Lee threw the shoe into the pool.
16. Lee kicked the ball into the pool.
Appendix K: Descriptions of the test items in Chinese

1. 小李把鞋扔到楼梯的上面。
   Xiǎolǐ bǎ xié rēng-dào lóuī de shàngmiàn.
   Lee BA shoe throw-arrive stairs ASSOC up
   Lee threw the shoe up the stairs.

2. 小李把球扔到楼梯的上面。
   Xiǎolǐ bǎ qiú rēng-dào lóuī de shàngmiàn.
   Lee BA ball throw-arrive stairs ASSOC up
   Lee threw the ball up the stairs.

3. 小李把飞盘扔到楼梯的上面。
   Xiǎolǐ bǎ fēipán rēng dào lóuī de shàngmiàn.
   Lee BA frisbee throw-arrive stairs ASSOC up
   Lee threw the frisbee up the stairs.

4. 小李把包扔到楼梯的上面。
   Xiǎolǐ bǎ bāo rēng-dào lóuī de shàngmiàn.
   Lee BA bag throw-arrive stairs ASSOC up
   Lee threw the bag up the stairs.

5. 小李把球扔到楼梯的下面。
   Xiǎolǐ bǎ qiú rēng-dào lóuī de xiàmiàn.
   Lee BA ball throw-arrive stairs ASSOC down
   Lee threw the ball down the stairs.

6. 小李把鞋扔到楼梯的下面。
   Xiǎolǐ bǎ xié rēng-dào lóuī de xiàmiàn.
   Lee BA shoe throw-arrive stairs ASSOC down
   Lee threw the shoe down the stairs.

7. 小李把飞盘扔到楼梯的下面。
   Xiǎolǐ bǎ fēipán rēng-dào lóuī de xiàmiàn.
   Lee BA frisbee throw-arrive stairs ASSOC down
   Lee threw the frisbee down the stairs.

8. 小李把包扔到楼梯的下面。
   Xiǎolǐ bǎ bāo rēng-dào lóuī de xiàmiàn.
   Lee BA bag throw-arrive stairs ASSOC down
   Lee threw the bag down the stairs.

9. 小李把鞋扔到路的对面。
   Xiǎolǐ bǎ xié rēng dào lù de duìmiàn.
Lee BA shoe throw-arrive road ASSOC opposite
Lee threw the shoe across the road.

10. 小李把婴儿车推到路的对面。
Xiao Li bǎ yīngèr chē pēi dào lù de duìmiàn.
Lee BA stroller push-arrive road ASSOC opposite
Lee pushed the stroller across the road.

11. 小李把网球拍扔到路的对面。
Xiao Li bǎ wēntián pāi réng-dào lù de duìmiàn.
Lee BA tennis racket throw-arrive road ASSOC opposite
Lee threw the tennis racket across the road.

12. 小李把球滚到路的对面。
Xiao Li bǎ qiú gǔn-dào lù de duìmiàn.
Lee BA ball roll-arrive road ASSOC opposite
Lee rolled the ball across the road.

13. 小李把球踢进游泳池里。
Xiao Li bǎ qiú tī jìn yóuyōngchí lǐ.
Lee BA ball kick-arrive swimming-pool inside
Lee kicked the ball into the pool.

14. 小李把网球拍扔进游泳池里。
Xiao Li bǎ wēntián pāi réng-jìn yóuyōngchí lǐ.
Lee BA tennis racket throw-enter swimming-pool inside
Lee threw the tennis racket into the pool.

15. 小李把鞋扔进游泳池里。
Xiao Li bǎ xié réng-jìn yóuyōngchí lǐ.
Lee BA shoe throw-enter swimming-pool inside
Lee threw the shoe into the pool.

16. 小李把球踢进游泳池里。
Xiao Li bǎ qiú tī-jìn yóuyōngchí lǐ.
Lee BA ball kick-enter swimming-pool inside
Lee kicked the ball into the pool.
Appendix L: Selected still images of a test item: Down

A: Scene 1

B: Scene 2

C: Scene 3
Appendix M: Selected still images of a test item: Across

A: Scene 1

B: Scene 2

C: Scene 3
Appendix N: Selected still images of a test item: Into

A: Scene 1

B: Scene 2

C. Scene 3
Appendix O: Native English speakers’ data: One sentence per participant

1. **Up_Shoe**
   1. He threw it on top of the stairs.
   2. Lee threw the shoe up the stairs.
   3. He threw the shoe to the top of the staircase.
   4. He threw the shoe up onto the stairs.
   5. Lee threw a shoe onto the stairs.
   6. He threw his shoe up the stairs.
   7. He threw the shoe onto the stairs.
   8. Lee threw the shoe to the top of the stairs.
   9. Lee tosses his shoe onto the top of stairwell.
  10. He threw a shoe up the stairs.
  11. He threw the shoe up the stairs.
  12. He threw a shoe up the stairs.
  13. The man threw his shoe up the stairs.
  14. Lee tossed the shoe up the stairs.
  15. Lee threw the shoe up the stairs.

2. **Up_Ball**
   16. He throws it to the top of the stairs.
   17. Lee threw the basketball up the stairs.
   18. He threw the basketball to the top of the staircase.
   19. He threw a basketball onto the same platform of the stairs.
   20. Lee threw a ball onto the stairs and it bounced.
   21. He threw a basketball up the stairs.
   22. He threw the ball onto the stairs also.
   23. Lee tossed the ball to the top of the stairs.
   24. Lee throws a ball up the stairs.
   25. He threw a basketball up the stairs.
   26. He threw the basketball up the stairs.
   27. He threw a ball up the stairs.
   28. The man tossed his ball up the stairs.
   29. Lee threw the ball up the stairs.
   30. Lee threw the ball up the stairs.

3. **Up_Frisbee**
   31. He threw the frisbee to the top of the stairs.
   32. Lee threw the frisbee up the stairs.
   33. He threw the frisbee up the stairs.
   34. He threw a frisbee from the bottom of the stairs onto the platform.
   35. Lee flew a frisbee up a flight of the stairs and it landed at the top.
36. He threw a frisbee up the stairs.
37. He threw the frisbee up the stairs.
38. Lee tossed the frisbee to the top of the stairs.
39. Lee throws a frisbee to the top of the stairs.
40. He flew the frisbee up the stairs.
41. He threw the frisbee to the top of the stairs.
42. He threw a frisbee up the stairs.
43. The man tossed the frisbee up the stairs.
44. Lee tossed the frisbee up the stairs.
45. Lee threw the frisbee up the stairs.

4. Up_Bag
46. He throws it to the top of the stairs.
47. Lee threw the bag up the stairs.
48. He threw the bag to the top of the stairs.
49. He threw it up on the same platform on the stairs.
50. Lee flew a bag up the flight of stairs.
51. He threw a bag up the stairs.
52. He threw the bag up the stairs.
53. Lee tossed the bag to the top of the stairs.
54. Lee throws a bag up the stairs.
55. He tossed the bag up the stairs.
56. He threw the bag to the top of the stairs.
57. He threw a bag up the stairs.
58. The man tossed the bag up the stairs.
59. Lee threw the bag up the stairs from the bottom of the stairs.
60. Lee threw the bag up the stairs.

5. Down_Bag
61. He threw it towards the bottom of the stairs.
62. Lee threw a shopping bag below the stairs.
63. He threw the bag to the bottom of the staircase.
64. He threw an orange bag down the same stairs.
65. Lee threw a bag down the stairs.
66. He threw a bag down the stairs.
67. He threw the bag down the stairs.
68. Lee threw the bag to the bottom of the stairs.
69. Lee tosses a bag down the stairwell.
70. He threw a bag down the stairs.
71. He threw the bag down the stairs.
72. He threw a bag down the stairs.
73. The man threw his bag down the stairs.
74. Lee tossed the bag down the stairs.
75. Lee threw the bag down the stairs.
6. Down-Ball
76. He throws the basketball to the bottom of the stairs.
77. Lee threw the basketball down the stairs.
78. He threw the ball down the stairs.
79. He threw it down the stairs.
80. Lee threw a ball down the stairs and it bounced.
81. He threw the basketball down the stairs.
82. He threw the ball down the stairs.
83. Lee threw the ball to the bottom of the stairs.
84. Lee throws the ball onto the stairs.
85. He dropped a basketball down the stairs.
86. He threw the ball down the stairs.
87. He threw a ball down the stairs.
88. The man threw down his ball down the stairs.
89. Lee threw the ball down the stairs.
90. Lee threw the ball down the stairs.
91. He threw the shoe down the stairs.
92. Lee threw the shoe down the stairs.
93. He threw the shoe down the stairs.
94. He threw a shoe again down the stairs.
95. Lee threw a shoe down a flight of the stairs.
96. He threw his shoe down the stairs.
97. He threw the shoe down the stairs again.
98. Lee threw the shoe to the bottom of the stairs.
99. Lee throws a shoe onto the first step of the stairs.
100. He threw a shoe down the stairs.
101. He threw the shoe down the stairs.
102. He threw a shoe down the stairs.
103. The man threw his shoe down the stairs.
104. Lee tossed the shoe down the stairs from the right side.
105. Lee threw the shoe down the stairs.

7. Down_Shoe
91. He threw it at the bottom of the stairs.
92. Lee threw the shoe down the stairs.
93. He threw the shoe down the stairs.
94. He threw a shoe again down the stairs.
95. Lee threw a shoe down a flight of the stairs.
96. He threw his shoe down the stairs.
97. He threw the shoe down the stairs again.
98. Lee threw the shoe to the bottom of the stairs.
99. Lee throws a shoe onto the first step of the stairs.
100. He threw a shoe down the stairs.
101. He threw the shoe down the stairs.
102. He threw a shoe down the stairs.
103. The man threw his shoe down the stairs.
104. Lee tossed the shoe down the stairs from the right side.
105. Lee threw the shoe down the stairs.

8. Down_Frisbee
106. He threw it at the bottom of the stairs.
107. Lee threw the frisbee down the stairs.
108. He threw the frisbee down the stairs.
109. He threw a frisbee down the stairs.
110. Lee flew a frisbee down the flight of stairs and it landed on the bottom.
111. He threw the frisbee down the stairs.
112. He threw the frisbee down the stairs.
113. Lee tossed the frisbee to the bottom of the stairs.
114. Lee tosses a frisbee to the bottom of the stairs.
115. He flew a frisbee down the stairs.
116. He threw the frisbee down the stairs.
117. He threw a frisbee down the stairs.
118. The man threw the frisbee down the stairs.
119. Lee threw the frisbee down the stairs.
120. Lee threw the frisbee down the stairs.

9. Across_Shoe_LR\textsuperscript{53}
121. He threw it across the land.
122. Lee threw the shoe across the sidewalk.
123. He threw the shoe over the sidewalk.
124. He threw the same shoe across the road.
125. Lee threw his shoe across the sidewalk.
126. He threw his shoe across the sidewalk.
127. He threw the shoe across the road.
128. Lee threw the shoe across to the other side of the street.
129. Lee tossed his shoe over a paved sidewalk.
130. He threw a shoe over a running sidewalk.
131. He threw the shoe over the walkway.
132. He threw a shoe over the path.
133. The man threw his shoe across the sidewalk.
134. Lee tossed the shoe across the road.
135. Lee threw the shoe across the path.

10. Across_Shoe_RL\textsuperscript{54}
136. He threw the same shoe across the walkway.
137. Lee threw the shoe across the sidewalk.
138. He threw the shoe to the other side of the sidewalk.
139. He now threw a shoe across the same road except in the opposite direction.
140. Lee threw a shoe across the sidewalk.
141. He threw a shoe across the sidewalk.
142. He threw the shoe across the road.
143. Lee threw the shoe to the other side of the street.
144. Lee throws a shoe across a paved sidewalk.
145. He threw the shoe in the opposite direction over the sidewalk.
146. He threw the shoe across the walkway.
147. He threw a shoe over the path.
148. The man tossed his shoe across the sidewalk.
149. Lee tossed the shoe across the road.
150. Lee threw the shoe across the path.

\textsuperscript{53} LR = Left to right.
\textsuperscript{54} RL = Right to left.
11. Across_Stroller_LR

151. He pushes the baby stroller across the walkway to the grass.
152. Lee rolled the stroller across the sidewalk.
153. He pushed the stroller across the sidewalk.
154. He pushes it across the same road.
155. Lee pushed the stroller across the sidewalk.
156. He pushed a big carriage across the sidewalk.
157. He pushed the stroller across the road.
158. Lee pushed the stroller across the street.
159. Lee rolls a stroller across a paved sidewalk.
160. He pushed the baby carriage across the sidewalk.
161. He rolled the baby carriage across the walkway.
162. He pushed the baby carriage across the sidewalk.
163. The man pushed his stroller across the sidewalk to the grass.
164. Lee pushed the stroller across the road.
165. Lee pushed the stroller across the path.

12. Across_Stroller_RL

166. He pushes the baby stroller across the walkway to the grass.
167. Lee rolled the stroller across the sidewalk.
168. He pushed the stroller to the left side of the sidewalk.
169. He pushed it across the road from opposite side.
170. Lee pushed the stroller across the sidewalk.
171. He threw his tennis racket across the sidewalk.
172. He pushed the stroller across the road.
173. Lee rolled the stroller across the street.
174. Lee rolls a stroller across the paved sidewalk.
175. He pushed the carriage across the sidewalk.
176. He pushed the stroller across the walkway.
177. He rolled a stroller over the path.
178. The man pushed the stroller across the sidewalk.
179. Lee pushed the stroller across the road from the left side.
180. Lee pushed the stroller across the path.

13. Across_Racket_LR

181. He just threw the tennis racket across the road.
182. Lee threw a tennis racket across the sidewalk.
183. He threw a racket over to the other side of the sidewalk.
184. He also threw a tennis racket across the road.
185. Lee threw his tennis racket onto the grass.
186. He threw his tennis racket across the sidewalk.
187. He threw the racket across the road.
188. Lee threw the tennis racket to the other side of the street.
189. Lee tosses his tennis racket over the paved sidewalk.
165
190. He threw a tennis racket over the sidewalk.
191. He threw a tennis racket over the walkway.
192. He threw a racket across the path.
193. The man threw his tennis racket across the sidewalk.
194. Lee tossed the racket across the road.
195. Lee threw the tennis racket across the path.

14. Across_Racket_RL
196. He threw the tennis racket across in the grass.
197. Lee threw the tennis racket across the sidewalk.
198. He threw the racket over the sidewalk.
199. He threw a tennis racket across the road from the opposite direction.
200. Lee threw a tennis racket across the sidewalk.
201. He pushed the stroller across the sidewalk.
202. He threw the racket across the road.
203. Lee tossed the tennis racket across the street.
204. Lee throws a tennis racket across the sidewalk.
205. He tossed a tennis racket across the opposite side of the sidewalk.
206. He tossed the racket across the walkway.
207. He threw a racket over a path.
208. The man threw his tennis racket across the sidewalk.
209. Lee tossed the racket to the left of the road.
210. Lee threw the tennis racket across the path.

15. Across_Ball_LR
211. He rolls the basketball across the road.
212. Lee rolled the basketball across the sidewalk.
213. He rolled the basketball over the sidewalk to the right.
214. He rolls a basketball across that road.
215. Lee rolled the basketball across the sidewalk.
216. He rolled the basketball across the sidewalk.
217. He pushed the ball across the road.
218. Lee rolled the ball across the street.
219. Lee rolls a ball across the sidewalk.
220. He rolled a basketball over the sidewalk.
221. He rolled the ball across the walkway.
222. He rolled the ball over the path.
223. The man rolled his ball across the sidewalk.
224. Lee rolled the ball across the road.
225. Lee rolled the ball across the path.

16. Across_Ball_RL
226. He rolled an orange ball across to touch the grass on the other side.
Lee rolled the basketball across the sidewalk.
He rolled the basketball over the other side of the sidewalk.
He rolls it across the road from the opposite side.
Lee rolled the basketball across the sidewalk.
He rolled the basketball across the sidewalk.
He rolls it across the road.
Lee rolled the ball across the street.
Lee rolls a ball across the paved sidewalk.
He rolled a basketball across the sidewalk.
He rolled the ball across the walkway.
He rolled a ball over the path.
The man bent down and rolled his ball across the sidewalk.
Lee rolled the ball to the left of the road.
Lee rolled the ball across the path.

17. Into_Big_Ball_LR
He kicks it into the water.
Lee kicked the ball into the pool.
He kicked the big ball into the water.
He kicked it into the pool.
Lee kicked the ball into the pool.
He kicked the ball into the pool.
He kicked the ball into the water.
Lee kicked the ball into the pool.
Lee kicks a ball into the pool.
He kicked the ball into the pool.
He kicked the yoga ball really high into the pool.
He kicked the ball into the pool.
The man kicked the ball into the swimming pool.
Lee kicked the ball into the pool from the left side.
Lee kicked the ball into the pool.

18. Into_Big_Ball_RL
He lightly kicks it into the pool.
Lee kicked the ball into the pool.
He kicked the ball into the water.
He kicks a larger ball into the pool.
Lee kicked the ball into the pool.
He kicked the ball into the pool.
He kicked the ball onto the water.
Lee kicked the ball into the swimming pool.
Lee kicks the ball into the swimming pool.
He kicked the ball into the pool.
He threw the yoga ball into the pool.
267. He kicked the ball into the pool.
268. The man kicked the ball into the swimming pool.
269. Lee kicked the ball into the pool.
270. Lee kicked the ball into the pool.

19. Into_Racket_LR
271. He threw the tennis racket into the water.
272. Lee threw the tennis racket into the pool.
273. He threw the racket into the swimming pool.
274. He threw a tennis racket into the pool.
275. Lee threw a racket into the pool.
276. He threw his tennis racket into the pool.
277. He threw the racket into the swimming pool.
278. Lee threw the tennis racket into the swimming pool.
279. Lee throws a tennis racket into the water.
280. He threw a tennis racket into the pool.
281. He tossed the tennis racket into the pool.
282. He threw a tennis racket into the pool.
283. The man threw his tennis racket back into the swimming pool.
284. Lee tossed the racket into the pool.
285. Lee threw the tennis racket into the pool.

20. Into_Racket_RL
286. He threw the tennis racket into the pool.
287. Lee threw the tennis racket into the pool.
288. He threw the racket into the swimming pool.
289. He threw it into the pool.
290. Lee threw the tennis racket into the pool.
291. He threw the tennis racket into the pool.
292. He threw the racket into the pool.
293. Lee tossed the tennis racket into the swimming pool.
294. Lee tossed his tennis racket into the swimming pool.
295. He threw a tennis racket into a pool.
296. He tossed the tennis racket into the pool.
297. He threw his tennis racket into the swimming pool.
298. The man tossed the tennis racket into the pool.
299. Lee tossed the racket into the pool.
300. Lee threw the tennis racket into the pool.

21. Into_Shoe_LR
301. He throws a blue shoe into the water.
302. Lee threw the shoe into the pool.
303. He threw the shoe into the water.
304. He threw it into the pool.
305. Lee threw a blue shoe into the pool.
306. He threw a shoe in the pool.
307. He threw the shoe into the swimming pool.
308. Lee threw the shoe into the swimming pool.
309. Lee tosses a shoe into the water.
310. He threw the shoe into the pool.
311. He tossed the shoe into the pool.
312. He threw a shoe into the pool.
313. The man threw his shoe into the swimming pool.
314. Lee tossed the shoe into the pool from the left side.
315. Lee threw the shoe into the pool.

22. Into_Shoe_RL
316. He threw a blue shoe into the pool with his left hand.
317. Lee threw the shoe into the pool.
318. He threw the shoe into the water.
319. He just threw the shoe into the pool.
320. Lee threw a shoe into the pool.
321. He threw a shoe in the pool.
322. He threw the shoe onto the water.
323. Lee threw the shoe into the swimming pool.
324. Lee throws a shoe across a paved sidewalk.
325. He threw a shoe into a pool.
326. He threw the shoe into the pool.
327. He threw a shoe into the pool.
328. The man tossed his shoe into the swimming pool.
329. Lee tossed the shoe into the pool.
330. Lee threw the shoe into the pool.

23. Into_Basketball_LR
331. He kicks it into the pool.
332. Lee kicked the basketball into the pool.
333. He kicked the ball into the water.
334. He kicks a basketball into the pool.
335. Lee kicked the basketball into the pool.
336. He kicked the basketball into the pool.
337. He kicks the ball into the pool.
338. Lee kicked the ball into the swimming pool.
339. Lee kicks a ball into the pool.
340. He kicked the basketball into the pool.
341. He kicked the ball into the pool.
342. He kicked the ball into the pool.
343. The man kicked the ball into the swimming pool.
344. Lee kicked the ball into the pool.
345. Lee kicked the ball into the pool.
24. *Into_Basketball_RL*

346. He kicks a basketball into the water.
347. Lee kicks the basketball into the ball.
348. He kicked the ball into the water.
349. Lee just kicked the ball into the pool.
350. Lee kicked the basketball with his left foot into the pool.
351. He kicked the basketball into the pool.
352. He kicks the ball into the water.
353. Lee kicked the ball into the swimming pool.
354. Lee punts a basketball into the water.
355. He kicked the basketball into the pool.
356. He kicked the basketball into the pool.
357. He kicked the ball into the pool.
358. The man kicked the ball into the swimming pool again.
359. Lee kicked the ball into the pool from the other side.
360. Lee kicked the basketball in the pool.
Appendix P: Native Chinese speakers’ data: One sentence per participant

1. *Up_Shoe*
   1. 小李把鞋子很轻松地扔上了台阶上面。
   2. 小李把一个网球鞋扔上了台阶。
   3. 小李把一只鞋从楼梯下面扔到楼梯上面。
   4. 小李站在楼梯的最下面把鞋扔到了最上面。
   5. 在一个阳光明媚的上午，小李把一只鞋扔到了台阶的上面。
   6. 小李把一只蓝色的运动鞋扔到台阶上面去了。
   7. 小李将自己的运动鞋以微抛物线形式扔到楼梯上。
   8. 小李用右手缓慢地将一只鞋抛物线地扔向了楼梯上边的拐角处。
   9. 小李把一个网球鞋从台阶下面扔到上面。
   10. 小李将一只蓝色的网面球鞋从台阶下丢向台阶上。
   11. 小李把鞋子从楼梯下扔到楼梯上边。
   12. 小李在往上扔他的鞋子。
   13. 小李再换一个地方把鞋扔掉。
   14. 小李从楼梯下往楼梯上抛鞋。
   15. 把一只鞋扔到了楼梯上面。

2. *Up_Ball*
   16. 篮球被小李扔上了那个楼梯上面。
   17. 小李用双手把一个篮球扔上了台阶。
   18. 小李把一只篮球从楼梯的最下面扔到楼梯的最上面。
   19. 小李站在楼梯的最下面把篮球扔到最上面。
   20. 小李把一个篮球从台阶的下面扔到了台阶的上面。
   21. 小李用双手把一个篮球抛到了台阶上面。
   22. 小李以端尿盆儿的姿势将篮球扔到楼梯上面。
   23. 小李站在楼梯的边上双手将篮球扔向梯子的上面。
   24. 小李双手把一个篮球从台阶下面扔到上面。
   25. 小李双手将篮球抛向台阶。
   26. 小李把篮球从楼梯下扔到楼梯上边。
   27. 他在往上弄篮球。
   28. 小李把篮球从下面往上面扔，在这个台阶上面。
   29. 小李从楼梯下往楼梯上投篮。
   30. 拿了一个球然后站在下面往楼梯上面扔。

3. *Up_Frisbee*
   31. 小李把飞盘拿到胸前的位置，然后扔到楼梯上面。
   32. 小李把一个飞盘扔到了台阶上面。
   33. 小李从楼梯下面扔了一个飞盘到楼梯上面。
   34. 小李站在楼梯的最下面将盘子扔到了楼梯上面。
小李用右手把飞盘从台阶的下面扔到了台阶的上面。
小李又把盘子扔到台阶上面去了。
小李举着飞盘将飞盘扔到楼梯上。
小李身体向前一倾，右手将一个飞盘扔到了楼梯的上边。
小李把一个飞盘从水泥台阶的下面扔到上面。
小李将白色的飞碟从台阶下往上抛出。
小李把飞碟扔到楼梯上面。
他把一个盘子一样的东西扔到了楼梯上边。
小李把飞碟从台阶的下面往上扔。
小李在楼梯下往楼梯上扔飞盘。
在楼梯的下面把那个飞盘往上面抛。

4. Up_Bag
小李把橙色的袋子用右手扔到了楼梯上面。
小李把一个橙色的袋子扔到了台阶上面。
小李从楼梯下面扔了一只红色的包到楼梯上面。
小李又从楼梯的最下面将那个橙色的包扔到上面去了。
小李用右手把一个红颜色的包从台阶的下面扔到了台阶的上面。
小李又把那个红色的手提袋扔到台阶上上面去了。
小李将红色的包扔到楼梯上面。
小李在楼梯下边站着右手拿着一个红色的包抛物线地扔向楼梯的上边。
小李把红色的手提包从水泥台阶的下面扔到上面。
小李将红色的袋子从台阶下丢到台阶上。
小李把包扔到楼梯上面。
他这次是把袋子往上扔了。
小李把垃圾袋从台阶的下面往上扔。
小李将一个桔红色的行李袋从楼梯下往楼梯上扔。
在楼梯下面往上扔。

5. Down_Bag
小李把方便袋从楼梯上面扔到了最下面。
小李把一个橙色的手袋扔到了台阶下面。
小李把一只红色的包从楼梯上面扔下去了。
小李站在了楼梯的最上面把一个橙色的包扔到下面。
小李站在台阶上把一个袋子扔下来了。
小李站在台阶上把一个红色的手提袋扔到台阶下面去了。
一个红色的包被小李扔到楼梯下面。
小李站在楼梯上边用左手将一个女士挎包斜转性地丢到了楼梯下边。
小李把一个红色的手提包从台阶上面扔到下面。
小李将一只红色的袋子丢下了台阶。
小李把包从楼梯上边扔到楼梯下。
小李把一个袋子扔到了楼梯的下面。
73. 小李把垃圾袋从台阶的下面往上扔。
74. 小李在楼梯上往楼梯下扔塑料袋。
75. 把一个橙色的袋子给扔下去了。

6. Down_Ball
76. 小李双手把球扔了下去。
77. 小李把一个篮球扔到了台阶。
78. 小李站在楼梯的最上面抛了一个篮球下去。
79. 小李站在楼梯的最上面把篮球扔了下去。
80. 小李站在台阶上面用双手把球扔向了台阶下面。
81. 小李站在台阶上把一个篮球扔了下来。
82. 小李将篮球扔到楼梯下，篮球弹了两次。
83. 小李站在楼梯的上面双手将篮球抛向楼梯的下面。
84. 小李把一个篮球从水泥台阶上面扔到下面。
85. 小李在指示下把篮球扔下了台阶。
86. 小李把篮球直接从楼梯上面扔到下面。
87. 他把篮球从楼梯上扔到楼梯下边儿。
88. 小李把篮球从台阶的上面往下扔。
89. 小李在楼梯上往楼梯下抛篮球。
90. 现在跑到楼梯上面拿个球往下抛。

7. Down_Shoe
91. 小李双手把鞋子扔了出去。
92. 小李用双手把一只鞋子扔到了台阶下面。
93. 小李站在梯上把一只鞋给扔下去。
94. 小李站在楼梯的最上面将鞋扔了下去。
95. 小李双手把鞋扔向了台阶的下面。
96. 小李站在台阶上用双手把一个蓝色的运动鞋扔了下来。
97. 小李双手将鞋子扔到楼梯下。
98. 小李在楼梯上边缓慢地将一只蓝鞋扔向楼梯的下面。
99. 小李双手把他的网球鞋从水泥台阶的上面扔到下面。
100. 小李双手将蓝色的网球鞋丢下台阶。
101. 小李把鞋子抛到楼梯下面。
102. 他把鞋子从楼梯上扔下去了。
103. 小李把自己的鞋从台阶的上面往下扔。
104. 小李站在楼梯上往楼梯下扔自己的鞋。
105. 又把一只运动鞋，蓝色的，从楼梯上扔下来。

8. Down_Frisbee
106. 飞盘被小李用左手扔出去了。
107. 小李把一个圆形物体扔到了台阶下面。
108. 小李站在楼梯上面扔了一个飞盘下去。
小李站在楼梯的最上面扔了一个盘子。
小李用左手把盘子从台阶的上面扔向了台阶的下面。
小李用左手上把一个白色的飞盘从楼梯上扔了下来。
小李拿着飞碟将飞碟扔到楼梯下。
小李在上边将一个东西扔到了楼梯的下边。
小李把一个飞盘从水泥台阶上面扔到下面。
小李将白色的飞碟从台阶上丢下。
小李把飞盘从楼梯上扔到楼梯下面。
他把一个盘子一样的东西扔到了楼梯上边。
小李把一个飞碟从台阶的上面扔到下面。
小李在楼梯上往楼梯下扔飞盘。
在楼梯的下面把那个飞盘往上面抛。

9. Across_Shoe_LR
小李从公路的一边把鞋子扔到另一边。
小李把一只网鞋扔到了马路的对面。
小李把一只鞋扔到马路对面去了。
小李把鞋扔到了公路的对面。
小李把鞋子扔到了马路的对面。
小李在路边把一只鞋扔到马路对面去了。
小李将自己的运动鞋扔到路对面。
小李在路的一侧把一只鞋扔到路的另一侧。
小李站在马路的一侧把网球鞋扔到另一侧。
小李将一只白色的网球鞋丢向马路对面。
小李把鞋子从马路的一边扔到另一边。
小李把鞋扔到了路的对面。
小李把自己的鞋扔到路的对面。
小李在公路的一边将鞋扔到公路的另一边。
他把一只鞋扔到了路的对面。

10. Across_Shoe_RL
小李在路边无聊地把鞋子扔在另一边儿。
小李把一只鞋扔到了马路对面的草地上。
小李把一只鞋从马路的右边扔到左边去了。
小李站到刚刚公路的对面把鞋扔到另一边。
小李站在马路的右边把鞋子扔到了马路的对面。
小李在路边把一只鞋扔到马路对面去了。
小李站在路边的电线杆旁将鞋子扔到路对面儿。
小李在马路的右边用左手将鞋子抛物线地扔到了草地上。
小李把网球鞋从公路的右边扔到左边。
小李站在电线杆旁将白色的网球鞋丢向马路对面。
小李把鞋子从马路的一边扔到另一侧。
147. 他从路的另一面把鞋丢到对面去了。
148. 小李把鞋送到公路对面。
149. 小李在公路的一边向公路的另一边扔自己的鞋。
150. 站在电线杆的旁边把鞋扔到了路对面。

11. Across_Stroller_LR
151. 婴儿车被小李从公路的一边推到另一边儿。
152. 小李用双手把一个小车推到了马路对面。
153. 小李把一只婴儿车从马路的左边推到右边去了。
154. 小李将一个婴儿车推到了公路的另一边儿。
155. 小李把一个手推车推到了马路的对面。
156. 小里站在路边把一个婴儿车推到马路对面去了。
157. 小李使劲地将婴儿车推向路对面。
158. 小李双手直推婴儿车到马路的另一侧。
159. 小李把一个婴儿的小推车从公路的左侧推到另一侧。
160. 小李将婴儿车推过马路。
161. 小李把婴儿车从马路的一侧推至另一侧。
162. 他把一辆小车子直接松手推到了路的对面。
163. 小李把一个婴儿车从公路的这面推到对面。
164. 小李将一个婴儿车从公路的一边推向另一边。
165. 把一个宝宝车推到了路的对面。

12. Across_Stroller_RL
166. 小李站在公路的右边儿然后把婴儿车推到公路的左边儿。
167. 小李把一个车子推到了马路对面。
168. 小李从马路的右边推了一只婴儿车过去。
169. 小李从公路的另一侧把婴儿车推到附近。
170. 小李用双手把推车推向了马路的对面。
171. 小李又把那个婴儿车从马路的右边推过来了。
172. 小李站在路边的电线杆儿旁使劲地将婴儿车推向路对面。
173. 小路从马路的一旁双手推着婴儿车推向了马路的另一边。
174. 小李把一个婴儿车从公路的右面推到左面。
175. 小李将婴儿车推到马路的对面。
176. 小李把婴儿车推到马路的另一侧。
177. 他把一个小车子在路的对面又松手用力推了一下。
178. 小李把婴儿车从公路的这面推到对面。
179. 小李在公路的一边往公路的另一边推婴儿车。
180. 把一个宝宝车推到了路的对面。

13. Across_Racket_LR
181. 小李站在公路边把网球拍扔到另一边儿。
小李用右手把一个网球拍扔到了马路的对面。
小李把一只网球拍扔到马路对面。
小李把网球拍扔到了公路的对面。
在一个傍晚，小李把网球拍扔到了马路的对面。
小李把一个网球拍扔到马路对面去了。
小李轻轻地将自己的网球拍扔到马路对面儿。
小李在路的左边把网球拍扔到了马路的右边。
小李把网球拍从公路的一侧扔到另一侧。
小李将一只网球拍丢向马路对面。
小李把球拍从公路的一边扔到另一边。
小李把网球拍扔过去了。
小李把自己的羽毛球拍扔到马路的对面。
小李在公路的一边将羽毛球拍抛向公路的另一边。
又把网球拍也扔到了路的对面。

14. Across_Racket_RL
网球拍被小李用左手扔出去了。
小李用左手把网球拍扔到了马路对面。
小李把一只网球拍从马路的右边扔到左边去了。
小李把网球拍扔到了马路的对面。
小李用左手把网球拍扔向了马路的对面。
小李把一个网球拍扔到马路对面。
小李将网球拍扔到路对面儿。
小李握住网球拍的下面抛物线扔向右边的草地上。
小李把网球拍从公路的右侧扔到左侧。
小李站在电线杆旁将网球拍丢向马路对面。
小李把球拍从马路的一侧扔到另一侧。
他又把网球拍扔过去了。
小李把羽毛球拍从公路的一面扔到对面去。
小李在公路的一旁往公路的另一旁扔网球拍。
他又把那个球拍用单手扔到了那个对面。

15. Across_Ball_LR
球被小李用左脚踢进了水里。
小李用双手把篮球推到了马路对面。
小李蹲下来把一只篮球从马路的左边滚到右边去了。
小李又从公路的另一侧将篮球滚过公路。
小李用双手把篮球推过了马路。
小李蹲在马路边将篮球拨向马路对面儿。
小李蹲在马路的另一边把篮球滚到对面去了。
小李蹲在马路边将篮球拨向马路对面儿。
他又把那个篮球推过马路的另一侧。
小李半蹲着把一个红色的篮球从公路的一侧滚到另一侧。
小李蹲在马路旁将篮球推过马路。
小李把篮球从马路一侧滚到马路的另一侧。
他把篮球滚到了路的对面。
小李把篮球从公路的这面滚到对面。
小李在公路的一旁将一个篮球滚向公路的另一旁。
又拿了一个橙色的篮球，滚到了对面。

16. Across_Ball_RL
小李默默地注视着球从一边滚到另一边。
小李用双手把篮球滚到了马路对面。
小李把一只篮球从马路的右边滚到左边去了。
小李将篮球滚过公路。
小李把篮球推向了马路的对面。
小路蹲在路边把一个篮球从路边滚到了对面。
小李蹲在路边的电线杆傍将篮球推向路对面儿。
小李把红色的篮球从公路的右侧滚到左侧。
小李再一次将篮球推向马路的对面。
小李把球滚到马路的另一侧。
他把篮球滚回去了。
小李把篮球从公路的这面滚到对面。
小李从公路的一边将一个篮球滚向另一边。
他蹲在那里然后慢慢地把球滚到了路的对面。

17. Into_Big_Ball_LR
小李用膝盖把球踢进了水里。
小李把一个大气球用脚踢到了游泳池里面。
小李踢了一只白色的大球到水里去了。
小李在泳池的另一侧将球踢进了泳池。
小李用右脚把球踢下了游泳池。
小李比上次更猛地把那只白色的球踢到水里去了。
小李膝盖用力将白色的大球踢进泳池里。
小李将健身球轻轻一踢到了游泳池的左脚侧。
小李把白色的气球用力地踢到游泳池里面。
小李将一只很大的白色塑料球踢入水池。
小李把气球踢到游泳池里面。
他用力把一个气球一样的东西踢到了游泳池里。
小李把气球踢到游泳池里。
小李用脚用力地把一个充气球踢进游泳池里面。
把那个白色的气球踢到了游泳池里边。
18. Into_Big_Ball_RL
256. 小李把一个水球踢到了游泳池里。
257. 小李把一个大气球踢到水池里面。
258. 小李把一只球踢到水池里面。
259. 小李用右脚把一个球踢进了游泳池里。
260. 小李把球踢到了游泳池里。
261. 小李把一个巨大的白色的球踢到游泳池里去了。
262. 气球被小李轻轻地踢进水里。
263. 小李用右脚踢了健身球到游泳池里面。
264. 小李把一个白色的气球从游泳池的上面踢到下面。
265. 小李将白色的大气球踢向水中。
266. 小李把充气球踢到游泳池里面。
267. 他把一个可以在水上漂的一个球扔到了游泳池里。
268. 小李在游泳馆里把一个气球扔到水里。
269. 小李在游泳池旁边将充气球踢向游泳池里边。
270. 把一个气球踢到了水池里面。

19. Into_Racket_LR
271. 球拍被小李无辜地扔进了游泳池里面。
272. 小李把一个网球拍扔到了游泳池。
273. 小李站在水池旁把网球拍扔下去了。
274. 小李把网球拍扔进了游泳池里。
275. 小李用右手把网球拍扔进了游泳池。
276. 小李把网球拍扔到了水池里。
277. 网球拍被小李随意地扔进泳池里。
278. 小李用右手将网球拍直线扔到游泳池的最前边。
279. 小李把一个网球拍从游泳池上面扔到下面。
280. 小李右手持网拍将球拍扔入水池当中。
281. 小李把球拍扔到游泳池里。
282. 他把网球拍扔在了游泳池里。
283. 小李把羽毛球拍扔到游泳池里。
284. 小李在游泳池旁将网球拍往游泳池里扔。
285. 球拍轻轻地抛在游泳池里边。

20. Into_Racket_RL
286. 小李站在游泳池边把网球拍扔在游泳池里。
287. 小李把网球拍扔进了游泳池。
288. 小李把一个网球拍扔到水池里。
289. 小李在游泳池的另一侧将网球拍扔进游泳池里。
290. 小李把网球拍扔进游泳池。
291. 小李把网球拍扔到水池里去了。
292. 小李把网球拍扔进泳池里。
小李在泳池旁把球拍扔到了泳池里。
小李把一个网球拍扔到游泳池里面。
小李又把网球拍丢向了水池当中。
小李把球拍扔到游泳池里面。
他把网球拍又扔到了游泳池里。
小李把羽毛球拍扔到水里。
小李将一个网球拍扔到游泳池里去。
这个人把球拍扔到了游泳池里边。

21. Into_Shoe_LR
蓝色的鞋子被小李用手扔到水里。
小李把一个湿了的鞋子扔到了游泳池里面。
小李扔了一只鞋到水里去了。
小李将那只鞋扔进了游泳池里。
小李用右手把一只鞋扔进了游泳池。
小李用右手把那只蓝色的运动鞋扔到水池里去了。
小李把蓝色运动鞋扔进游泳池里。
小李右手轻轻一抬，将一只鞋放到了游泳池里。
小李把一个网球鞋扔到游泳池。
小李将蓝色的网球鞋丢入水池当中。
小李把鞋子扔到游泳池里。
小李把鞋子扔到游泳池里面。
他又把鞋扔到游泳池里。
小李把自己的鞋扔到泳池里。
小李将一只鞋扔进游泳池里面。

22. Into_Shoe_RL
小李把鞋子扔到了水里面。
小李把一个蓝色的休闲鞋扔到了游泳池。
小李把一只鞋扔到水里去了。
小李把那只蓝色的鞋扔进了游泳池里。
小李把一只鞋扔进了游泳池里面。
小李把一只蓝色的鞋扔到水池里去了。
小李将一只蓝色的运动鞋扔进泳池。
小李用左手将一只蓝色的鞋子扔到游泳池的前边。
小李光着脚把他的网球鞋扔到游泳池里面。
小李将一只蓝色的网面鞋丢入水池当中。
小李把鞋扔到了游泳池里。
小李把鞋扔到了游泳池里。
小李把鞋扔到了游泳池里。
329. 小李在游泳馆里把自己的鞋扔到游泳池里边。
330. 小李在游泳池旁边将自己的鞋扔到游泳池里面。

23. Into_Basketball_LR
331. 小李双手把球扔了下去。
332. 小李用脚把篮球踢到了游泳池。
333. 小李把一只篮球踢到水里去了。
334. 小李把篮球踢进了泳池里。
335. 小李用右脚把篮球踢到了游泳池里面。
336. 小李很酷地把一个篮球踢到了水池里。
337. 小李篮球踢进泳池里。
338. 小李慢慢地用右脚将自己的足球踢到了游泳池里面。
339. 小李光着脚把一个篮球踢到游泳池里面。
340. 小李将篮球踢入水池当中。
341. 小李把篮球踢到泳池里边。
342. 把篮球踢到了游泳池里。
343. 把篮球踢到了游泳池里。
344. 小李把篮球踢到游泳池里。
345. 小李将篮球轻轻地踢向游泳池里面。

24. Into_Basketball_RL
346. 球被小李用左脚踢进了水里。
347. 小李把篮球踢到了游泳池。
348. 小李把一只篮球踢到水里去了。
349. 小李在泳池的另一侧将篮球踢进了泳池。
350. 小李用左脚把球轻轻地踢向了游泳池。
351. 小李用左脚把篮球踢到水里。
352. 小李再一次把球踢进游泳池里。
353. 小李站在泳池旁用左脚缓慢踢了一下球落到游泳池里边。
354. 小李光着脚把红色的篮球踢到游泳池。
355. 小李将篮球踢入水池当中。
356. 小李把皮球踢到游泳池里。
357. 小李把篮球踢到游泳池里面。
358. 小李把篮球踢到了游泳池里面。
359. 小李在泳池里把篮球踢到水里。
360. 小李在游泳池把篮球踢向游泳池。
Appendix Q: L2 Chinese learners’ data: One sentence per participant

1. *Up Shoe*
   1. 他扔了鞋子楼梯下面。
   2. 他把鞋扔在楼梯上。
   3. 他把鞋子扔到楼上。
   4. 他扔鞋在楼梯上面。
   5. 小李从楼梯下扔上去一个鞋。
   6. 小李扔鞋在楼梯上面。
   7. 小李把鞋扔楼梯上。
   8. 小李把鞋子扔上楼梯上。
   9. 他扔鞋在楼梯。
   10. 他把一个鞋扔上楼梯。
   11. 他把扔鞋楼梯上。
   12. 小李把这个鞋扔到楼梯上。
   13. 他把鞋子扔在楼梯上。
   14. 小李扔一只鞋到楼梯上。
   15. 他扔鞋到楼梯的上面。

2. *Up Ball*
   16. 扔了这个球楼梯上。
   17. 他把篮球扔在楼梯上。
   18. 他扔球在到楼上。
   19. 他扔篮球在楼梯上面。
   20. 他从楼梯下到楼梯上扔上去一个篮球。
   21. 小李扔篮球在楼梯上面。
   22. 小李把篮球扔楼梯上。
   23. 小李把篮球扔了楼梯上。
   24. 他扔篮球在楼梯上。
   25. 他把篮球扔上楼梯。
   26. 他把篮球扔楼梯上。
   27. 小李把这个篮球扔到楼梯上。
   28. 他把篮球推到楼梯上。
   29. 小李扔篮球到楼梯上。
   30. 他推球到楼梯的上边。
3. Up_Frisbee
31. 他扔了飞碟楼梯上。
32. 他把飞碟扔在楼梯上。
33. 他把飞碟扔到楼上。
34. 他扔飞碟在楼梯上面。
35. 小李从楼梯下到楼梯上扔上去一个飞碟。
36. 他扔飞碟在楼梯上。
37. 小李把飞碟扔楼梯上。
38. 小李把飞碟扔到楼梯上。
39. 他扔飞碟在楼梯上。
40. 他扔飞碟在楼梯上。
41. 他把飞碟扔到楼上。
42. 小李把一个飞碟扔到楼梯上。
43. 他把飞碟扔到楼梯上。
44. 小李把一个飞碟扔到楼梯上。
45. 他丢了飞碟到楼梯的上面。

4. Up_Bag
46. 他把这个包扔了楼梯上。
47. 他把包扔在楼梯上。
48. 他把包扔到楼上。
49. 他扔那个包到楼梯上。
50. 小李从楼梯下到楼梯上扔上去一个包。
51. 他扔包在楼梯的上面。
52. 小李把包扔楼梯上。
53. 小李把包扔到楼梯上。
54. 他扔包在楼梯上。
55. 他把包扔到楼梯。
56. 他把包扔到楼梯。
57. 小李把这个包扔到楼梯上。
58. 他把包扔到楼梯上。
59. 小李扔包到楼梯上。
60. 他扔包到楼梯的上边。

5. Down_Bag
61. 他扔包楼梯下面。
62. 他把包扔在楼梯下。
63. 小李把包扔到楼下。
64. 他扔那个包在楼梯下面。
65. 小李从楼梯上扔下去一个包。
66. 小李扔包在楼梯下面。
67. 小李把包扔楼梯下。
68. 小李把包扔下去楼梯。
69. 他扔包在楼梯下。
70. 他把一个包扔下楼梯。
71. 他把包包楼梯下。
72. 小李把这个包扔到楼梯下。
73. 他把一个包扔到楼梯下。
74. 小李扔包到楼梯下。
75. 他扔包到楼梯上边。

6. Down_Ball
76. 把这个球扔了楼梯下。
77. 他把篮球扔在楼梯下。
78. 他扔球到楼下。
79. 他扔篮球在楼梯下面。
80. 小李从楼梯上到楼梯下扔下去一个篮球。
81. 他扔球在楼梯下面。
82. 小李把篮球扔楼梯下。
83. 小李把篮球扔了楼梯下。
84. 他扔篮球在楼梯下。
85. 他把篮球扔下楼梯。
86. 他把篮球扔空中到楼梯上。
87. 小李把这个篮球扔到楼梯下。
88. 他把篮球推到楼梯的下面。
89. 小李把篮球扔到楼梯下。
90. 他扔球到楼梯的最下梯。

7. Down_Shoe
91. 他扔了一个鞋子楼梯下。
92. 他把鞋扔在楼梯下。
93. 他把鞋子扔到楼上面。
94. 他扔鞋在楼梯下面。
95. 小李从楼梯上到楼梯下扔下去一个鞋。
96. 他滚鞋在楼梯下面。
97. 小李把鞋扔楼梯下。
98. 小李把鞋子扔了到楼梯下。
99. 他扔鞋在楼梯下。
100. 他把一个鞋扔下楼梯。
101. 他把鞋扔空间中到楼梯下。
102. 小李把这个鞋扔到楼梯下。
103. 他把鞋子推到楼梯的下面。
104. 小李把一只鞋扔到楼梯下。
105. 他扔鞋到楼梯的最下楼梯。

8. Down_Frisbee
106. 他扔了一个飞碟楼梯下。
107. 他把飞碟扔在楼梯下。
108. 他把飞碟扔到楼下。
109. 他扔那个飞碟在楼梯下面。
110. 小李从楼梯上到楼梯下扔下去一个飞碟。
111. 他扔飞碟在楼梯下面。
112. 小李把飞碟扔楼梯下。
113. 小李把飞碟扔了楼梯下。
114. 他扔飞碟在楼梯下。
115. 他把一个飞碟扔下楼梯。
116. 他扔飞碟空间中到楼梯下。
117. 小李把这个飞碟扔到楼梯下。
118. 他把飞碟放到楼梯的下面。
119. 小李把飞碟飞到楼梯下。
120. 他丢飞碟到楼梯的下面。

9. Across_Shoe_LR
121. 他把这个鞋子扔了去这条路。
122. 他把鞋扔在路的旁边。
123. 他把鞋扔到路的对面。
124. 他扔那个鞋在路对面。
125. 他从小路左边到小路右边扔了一个鞋。
126. 他扔鞋在路的旁边。
127. 小李把鞋扔路边。
128. 小李扔了鞋子到了路的旁边。
129. 他扔鞋从左边到路的右边。
130. 他把一个鞋扔路对面。

183
131. 他把鞋扔空中到对面的路。
132. 小李把这个鞋扔到跑道的对面。
133. 他把鞋子扔到路过路。

134. 小李把一鞋扔在路的对面。
135. 他扔鞋这条路的左边到这条路的右边。

10. Across_Shoe_RL
136. 他扔鞋子这条路过去得。
137. 他把鞋扔在这条路的旁边。
138. 小李把鞋子再扔到路的对面。
139. 他扔鞋在路对面。
140. 小李从小路右边到小路左边扔了一个鞋。
141. 他扔鞋在路的旁边。
142. 小李把鞋扔路边。
143. 小李又把鞋子扔了到路的旁边。
144. 他从路右边到左边扔鞋。
145. 他把一个鞋扔对面路。
146. 他把扔鞋马路对面。
147. 小李把这个鞋扔到跑道对面。
148. 他把鞋子扔到街的对面。
149. 小李把一只鞋扔到路的对面。
150. 他扔鞋到路的左边。

11. Across_Stroller_LR
151. 他把宝宝车推了过去这条路。
152. 他把婴儿车推在路。
153. 小李不小心地把东西推过路。
154. 他推婴儿车在对面。
155. 小李从小路左边到小路右边推了一个婴儿车。
156. 他推这个车在路旁边。
157. 小李把宝宝车推路边。
158. 小李把婴儿车推了从路的左边到路的右边。
159. 他在那个路推宝宝车。
160. 他把婴儿车推对面路。
161. 他把推婴儿车过马路。
162. 小李把这个推车滚到跑道的对面。
163. 他把一个婴儿车推到街的对面。
164. 小李推婴儿车到路的对面。
165. 他推婴儿车到路的右边。
12. Across_Stroller_RL
166. 他把这个宝宝车推了路侧。
167. 他把小车推在路上。
168. 他把婴儿车推过路。
169. 他推婴儿车在路对面。
170. 小李从小路右边到小路左边推过去一个婴儿车。
171. 他滚车在路的旁边。
172. 小李把宝宝车推路边。
173. 小李把婴儿车推了从路的右边到路的左边。
174. 他推宝宝车从路的右边到路的左边。
175. 他滚那个车在路的旁边。
176. 他把婴儿车推到过马路对面。
177. 小李把一个推车滚到跑道对面。
178. 他把婴儿车推到街的对面。
179. 小李把婴儿车扔到路的对面。
180. 他推了婴儿车到路的左边。

13. Across_Racket_LR
181. 他扔了球拍到游泳池。
182. 他把球拍扔在路的旁边。
183. 他把球拍扔到路的对面。
184. 他扔那个球拍在路对面。
185. 小李从小路左边到小路右边扔了一个球拍。
186. 他扔球拍在路的旁边。
187. 小李把球拍扔路边。
188. 小李把球拍扔到路的旁边。
189. 他扔球拍从左边到右边。
190. 他把网球拍扔对面路。
191. 他把球拍扔去马路对面。
192. 小李把这个网球拍扔到跑道对面。
193. 他把网球拍扔在过马路。
194. 小李把球拍扔到路的对面。
195. 他扔球拍从这条路的左边到这条路的右边。

14. Across_Racket_RL
196. 他扔了球拍到路的另外的部分。
197. 他把球拍扔在路的旁边。
198. 他把拍球扔到路对面。
199. 他扔球拍在路对面。
200. 小李从小路右边到小路左边扔了一个球拍。
201. 他扔球拍在路的旁边。
202. 小李把球拍扔路边。
203. 小李又把球拍扔了到路的左边。
204. 他扔网球拍从路的右边到路的左边。
205. 他把网球拍扔对面路。
206. 他把球拍扔空中去马路对面。
207. 小李把这个网球拍扔到跑道对面。
208. 他把网球拍扔到街的对面。
209. 小李扔球拍到路的对面。
210. 他扔球拍到路的左边。

15. Across_Ball_LR
211. 他滚了球到路侧。
212. 他把篮球往前推在路上。
213. 他把球滚到路的对面。
214. 他滚篮球在路对面。
215. 小李从小路右边到小路左边推了一个篮球。
216. 他滚球在路上，在路的旁边。
217. 小李把篮球滚路边。
218. 他把篮球滚到了路的对面。
219. 他滚球从路的左边到路的右边。
220. 他把篮球推对面路。
221. 他把篮球推到过马路对面。
222. 小李把这个篮球滚到跑道对面。
223. 他把篮球推到街的对面。
224. 小李把篮球推到路的对面。
225. 他滚篮球到路的右边。

16. Across_Ball_RL
226. 他滚了球过去这条路。
227. 他把球推在路上。
228. 他把球推到路的对面。
229. 他推篮球在路对面。
230. 小李从小路左边到小路右边推了一个篮球。
231. 他滚球到路的旁边。
小李把篮球滚路边。
小李把篮球推了到路的左边。
他滚篮球从路的右边到路的左边。
他把大球推对面路。
他把篮球推过马路。
小李把这个篮球滚到跑道的对面。
他把篮球推到街的对面。
小李扔篮球到路的对面。
他滚篮球到路的左边。

17. Into_Bigball_LR

他把这个球踢了游泳池里。
他把球踢在游泳池里。
他把大球踢到游泳池里。
他踢那个大球在游泳池里边。
小李从游泳池外面到游泳池里面快踢进去一个球。
他踢了球在游泳池的上面。
小李把球踢游泳池里。
小李把大球踢了到游泳池上。
他踢篮球在游泳池。
他踢了球在游泳池的上面。
他踢大白色球到游泳池上。
小李把这个大白色的球踢到游泳池里。
他把一个大的球踢到游泳池。
小李用脚踢球到游泳池。
他踢一个大球到游泳池的里边。

18. Into_Bigball_RL

小李踢这个大球游泳池里面。
他把球踢在游泳池上。
他踢球踢到游泳池。
他踢那很大的球在游泳池里边。
小李踢进去一个球到游泳池里。
小李踢球在游泳池里面。
小李把球踢游泳池里。
小李把大球踢了到游泳池上。
他踢球在游泳池。
265. 他把大球踢在游泳池。
266. 他踢球让到游泳池上。
267. 小李把这个大球踢到游泳池里。
268. 他把球踢到游泳池。
269. 小李用脚踢球到游泳池。
270. 他踢大球到游泳池里。

19. Into_Racket_LR
271. 他扔了球拍游泳池里。
272. 他把球拍扔在游泳池里。
273. 他扔了球拍在游泳池里。
274. 他扔那个球拍在游泳池里面。
275. 小李扔下来球拍到游泳池里。
276. 他扔球拍在游泳池的里面。
277. 小李把球拍扔游泳池里。
278. 小李把球拍扔了到游泳池上。
279. 他扔网球拍在游泳池。
280. 他把一个网球拍扔在游泳池。
281. 他把扔球拍游泳池上。
282. 小李把这个网球拍扔到游泳池里。
283. 他把网球拍推到游泳池。
284. 小李把球拍扔到游泳池。
285. 他扔球拍到游泳池的里边。

20. Into_Racket_RL
286. 他扔球拍到游泳池。
287. 他又把球拍扔在游泳池里。
288. 他把球拍放到游泳池。
289. 他扔那个球拍在游泳池里边。
290. 小李从游泳池外面到游泳池里扔进去一个球拍。
291. 他扔球拍在游泳池里面。
292. 小李把球拍扔游泳池里。
293. 小李把球拍又扔了游泳池里。
294. 他扔球拍在游泳池。
295. 他把网球拍扔在游泳池。
296. 小李把球拍扔游泳池。
297. 小李把这个网球拍扔到游泳池里。
298. 他把一个网球拍放在一个游泳池。
299. 小李把球拍扔在游泳池。
300. 他扔球拍到游泳池里。

21. Into_Shoe_LR
301. 他扔了鞋子游泳池里。
302. 他把鞋扔在游泳池里。
303. 他把鞋子扔到游泳池里。
304. 他扔那个鞋在游泳池里边。
305. 小李从游泳池外面到游泳池里面扔进去一个鞋。
306. 他扔鞋在游泳池的里面。
307. 小李把鞋扔游泳池里。
308. 小李把鞋子又扔了到游泳池里。
309. 他扔鞋在游泳池。
310. 他把一个鞋扔游泳池。
311. 他把鞋扔空气中到游泳池上。
312. 小李把这个鞋扔到游泳池里。
313. 他把鞋子推到游泳池。
314. 小李扔一只鞋到游泳池。
315. 他扔鞋到游泳池的里边。

22. Into_Shoe_RL
316. 他扔鞋子游泳池里面。
317. 他把鞋扔在游泳池里。
318. 小李把鞋子扔到游泳池里。
319. 他扔那个鞋在游泳池里边。
320. 小李扔进去一个鞋到游泳池里。
321. 小李扔鞋在游泳池里。
322. 小李把鞋扔游泳池里。
323. 小李把鞋子扔到游泳池里。
324. 他扔鞋在游泳池。
325. 他把一个鞋扔在游泳池。
326. 他把鞋扔游泳池里面。
327. 小李把这个鞋放到游泳池里。
328. 他把鞋子扔到游泳池。
329. 小李把一只鞋扔在游泳池。
330. 他扔鞋到游泳池的里面。
23. Into_BasketBall_LR
331. 他踢了球游泳池里。
332. 他把篮球踢在游泳池里。
333. 他踢球踢到游泳池里。
334. 他踢那个篮球在游泳池。
335. 小李从游泳池外面到游泳池里面踢进去一个篮球。
336. 他踢篮球在游泳池上。
337. 小李把篮球踢游泳池里。
338. 小李把篮球踢了到游泳池上。
339. 他踢篮球在游泳池。
340. 他把大球踢在游泳池。
341. 他踢篮球到游泳池中。
342. 小李把这个篮球踢到游泳池里。
343. 他把篮球踢到一个游泳池。
344. 小李用脚踢篮球到游泳池。
345. 他踢篮球到游泳池的里面。

24. Into_Basketball_RL
346. 他踢了一个球游泳池里。
347. 他把篮球丢在游泳池里。
348. 他踢球踢到游泳池里。
349. 他踢那个篮球在游泳池里边。
350. 小李从游泳池外面到游泳池里面踢进去一个篮球。
351. 他踢了篮球在游泳池里。
352. 小李把篮球踢游泳池里。
353. 小李踢了篮球到游泳池里。
354. 他踢篮球在游泳池。
355. 他把篮球踢在游泳池。
356. 他踢篮球到游泳池中。
357. 小李把这个篮球踢到游泳池里。
358. 他把篮球很快踢到游泳池。
359. 小李踢篮球到游泳池。
360. 他踢篮球到游泳池的里边。
Appendix R: Use of action verbs in Chinese

<table>
<thead>
<tr>
<th>Action Verb</th>
<th>Up CH</th>
<th>Up L2</th>
<th>Down CH</th>
<th>Down L2</th>
<th>Across CH</th>
<th>Across L2</th>
<th>Into CH</th>
<th>Into L2</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>抛 rēng to throw</td>
<td>65</td>
<td>55</td>
<td>49</td>
<td>54</td>
<td>55</td>
<td>62</td>
<td>58</td>
<td>57</td>
<td>60.7%</td>
</tr>
<tr>
<td>丢 diū to toss</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>4.3%</td>
</tr>
<tr>
<td>抛 pāo to throw</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3.5%</td>
</tr>
<tr>
<td>弄 nòng to handle</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.2%</td>
</tr>
<tr>
<td>推 tuī to push</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>37</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>9.9%</td>
</tr>
<tr>
<td>投 tōu to throw</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.3%</td>
</tr>
<tr>
<td>放 fàng to put</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0.3%</td>
</tr>
<tr>
<td>滚 gǔn to roll</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>5.3%</td>
</tr>
<tr>
<td>踢 tī to kick</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>56</td>
<td>59</td>
<td>15.2%</td>
</tr>
<tr>
<td>拨 bō to pluck</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

* CH = Chinese
REFERENCES


Shen, J. (2002). Rúhé chūzhī ‘chūzhī shí’: Shìlùn ‘bā’ zi jù de zhūguānxìng (How to


Slobin, D. I. (1996a). From “thought and language” to “thinking for speaking”. In J. Gumperz, & S. Levinson (Eds.), Rethinking linguistic relativity (pp. 70-96). Cambridge: Cambridge University Press.


Talmy, L. (2012). Why is Path the core schema? E-mail communication, Jan. 12, 2012.


Zhang, J. (2001), Cóng “bā” zì jù hé “jiāng” zì jù de yǔyòng fènbù kàn yǔtǐ lèixíng (Taxonomies of genre on the basis of textual distributions of the ba and jiang constructions), Gāoděng Hánshòu Xuèbào, Zhèxué Shèhuì Kēxué Bān (Journal of Higher Correspondence Education, Philosophy and Social Sciences Edition), 14 (1), 24-25.
