

# A “Thinking for Speaking” Study on Motion Events’ Lexicalization and Conceptualization

Jia Chen

Shanghai International Studies University, Shanghai, 200083, Shanghai, China

**Abstract**—This paper investigates the lexicalization of Motion Events by Chinese EFL learners and the reflected language-specific conceptualization patterns from their language use. The researcher aims to explore the implied relation between language and thought through the observation of language users’ online thinking for speaking data. The current study used the classic *Frog Where Are You* story narration task to collect linguistic data of English motion event expressions from 30 college students from China and the United States. The results indicate that the way of thinking in the Chinese mother tongue can influence the participants’ choice of vocabulary and sentence structure in verbalizing motion events. With the improvement of language proficiency, Chinese EFL learners are more likely to produce similar target language lexicalization patterns as their counterparts of English native speakers. The research may provide evidence for thinking for speaking linguistic relativity and some implications on foreign language acquisition.

**Index Terms**—motion event, lexicalization, linguistic relativity, language and thought, cognitive linguistics

## I. RESEARCH BACKGROUND

Space is an important concept in human perception about the world. And through their embodied experience about location and motion, human beings get to know the physical world they live in. The linguistic expressions used by speakers of different native languages on the same motion events may reflect similarities and differences in their understanding and conceptualization of space. In turn, the spatial lexicalization typology difference between languages can have some impact on language users’ choice of vocabulary and other semantic components and their strategies in information arrangement at sentence level. By studying the motion event expressions made by bilingual and monolingual users of different languages, implications may be found about the relationship between language and thought. This current research aims to explore motion event lexicalization differences between English native speakers and Chinese adult EFL (English as foreign language) learners and their cognitive conceptualization reflected during the process of target language production.

### A. Literature Review

Research on Language typology based on motion event lexicalization (Talmy, 1985, 2000a, b) and exploration into language and thought relation is gaining momentum in the past two decades. Following Slobin’s thinking for speaking approach (Slobin 1996a, b, 2004), many scholars researched on motion event lexicalization typology and the space cognition across languages from the perspective of language acquisition (Bowerman & Choi, 2001; Cadierno & Ruiz, 2006; Hickmann & Hendriks, 2010; Ji, 2009; Bylund et al., 2013; Avello & Athanasopoulos, 2016; Aktan-Erciyes, 2020). Researchers carried out child language development observation, wordless picture book elicited narration experiments on bilinguals or foreign language or second language learners, and other cognitive or psychological linguistic experiments to find out the relationship between language and thought by focusing on the motion event lexicalization development, variations and acquisition. Scholars conducted cross-language studies bilinguals and monolingual children and adults of English-Korean (Choi & Bowerman, 1991), English-Spanish (Slobin 1996 a, b, 2004), English-French (Hickmann & Hendriks, 2010), Spanish-Danish (Cadierno & Ruiz, 2006), Turkish-English (Aktan-Erciyes, 2020), and other languages. However, not many studies were done on the motion event lexicalization acquisition with adult English learners of Chinese.

A similar trend is evident in the research literature of motion event lexicalization and language acquisition in China. Jiang Yanyan and Chen Wanhui summarized the research of Chinese language motion events in China since the 21 century, and found that scholars mainly focused on the lexicalization typology of motion events of English and Chinese through theoretical description and just a limited number of studies were done by applying empirical experiment or language acquisition approach (Jiang & Chen, 2019). Zeng & Bai (2013) and Zeng (2017) conducted Chinese EFL learners’ voluntary and caused motion event acquisition studies and found that at different proficiencies, Chinese learners of English demonstrated clear differences in their Path information lexicalization and complex motion event verbalization. Ji and Hohenstein (2014) and Ji (2019, 2020) produced a series of experiments with English and Chinese monolingual and bilingual speakers about their motion event lexicalization to explore the linguistic relativity thinking for speaking hypothesis, the influence of L2 proficiency on L2 learners’ target language production, and the dynamic relationship between target language acquisition progress and cognition pattern shifts. Based on cognitive typology and

hypothesis theory of speech thinking, Liu Caixia studied the expression of motion events in second language acquisition writing by Chinese learners (Liu, 2012, p.19-20).

It is apparent that empirical research on how the English competence level of Chinese adult EFL learners may influence their lexicalization of spatial motion events is still limited at present. Therefore, it is significant to further explore how Chinese EFL learners conceptualize and lexicalize motion events and how mother tongue and target language linguistic differences reflect the language specific way of thinking and cognitive patterns.

### *B. Research Objective*

Since different languages have their own sets of vocabulary and grammar options for encoding motion event messages, foreign language learners may produce sentences and expressions with some of their mother tongue features. Such mother tongue thinking and cognition patterns can be revealed in the semantic arrangement and information structure of their language expressions. The researcher wants to find out how Chinese adult EFL learners encode motion events in English and what lexicalization features and linguistic patterns can be observed. By analyzing and comparing the participants' verbalization of motion events, the researcher hopes to get a glimpse of the implied space motion event cognition patterns by users of different languages. In the light of "thinking for speaking" linguistic relativity hypothesis (Slobin, 1996a, p.76-90), the research targets how acquiring a new language can mean to learn a new way of thinking and how mother tongue thinking and cognitive preferences may influence the target language acquisition. The research may also shed some light on how an understanding of the English way of spatial motion event conceptualization and lexicalization can facilitate Chinese adult learners of English's target language acquisition.

## II. OVERVIEW OF RELATED THEORIES

### *A. Lexicalization Typology of Spatial Motion Events*

In cognitive semantic studies, Talmy (1985, 2000 a, b) proposes a cross-language typology based on the lexicalization patterns of motion events. According to Talmy (2000b, p. 55), a typical motion event as conceptualized in human language comprises four basic components of the Figure (the moving entity, animate or inanimate), Ground (the reference object of the moving entity), Motion (the moving and action) and Path (the course and track of the movement including the origin, end and process). For example, in the sentence "The dog fell off the window." The Motion Event conceptual elements of FIGURE is lexicalized by "the dog", MANNER and MOTION by "fell", PATH by "off", and GROUND by "the window". Languages in the world are divided into satellite-framed and verb-framed types depending on whether the PATH-component in a motion event can be expressed in a satellite (e.g. English prepositions or adverbials such as in, onto, out) or in the verb itself (e.g. English verb such as enter, exit). Revisions and additions to this lexicalization typology theory have been made in the past decade. It is argued that English is a typical satellite-framed language with the PATH element denoted by the satellites while MANNER is usually incorporated with MOTION in the verbs while Chinese is considered a pro-satellite or equipollently-framed language (Tai, 2003; Slobin, 2004, Chen & Guo, 2009). In English, the concept of PATH in a Motion Event is often expressed by a preposition that represents a change in spatial position while in Chinese the PATH element can be presented in different lexical and syntactic components in a distributive way (Zlatev, 2007; Chen, 2014). It is under this lexicalization typology that the current study conducts its linguistic data analysis.

### *B. "Thinking for Speaking" Linguistic Relativity*

As Whorf's linguistic relativity (Whorf, 1956) principle evolves into the current Neo-Whorfism paradigm (Lucy, 1997; Slobin, 1996a, 1996b, 2004; Bowerman & Choi, 2001; Boroditsky, 2001; Chen, 2011), researchers strive to probe how linguistic representation of reality may lead to cross-linguistic distinctions in thought. It is argued by the neo-Whorfism advocators that language creates certain preferences in cognition and channels people's attention in reality. A particular language usually reflects the particular cognition attention and conceptual conventions of a nation. The linguistic conventions of a language often guide the native speakers' attention to certain specific aspects of their experiences in the world. When talking about their embodied experience, such cognitive differences would be revealed. The way language categorizes and linguistically structures the events and perceptions may influence the cognitive process of the language users' mind. Slobin (1996a, b) proposes a "thinking for speaking" hypothesis that speakers of different languages think differently while mentally preparing content for speech. To be more specific, speakers attend to and linguistically encode those aspects of reality that are readily expressible in their language. Although a language can verbalize almost any concept, users of different languages may find different levels of difficulty or ease in verbalizing certain concepts. In language acquisition, the language proficiency may influence the development of language-specific forms of thinking or thinking for speaking patterns.

## III. RESEARCH DESIGN

### *A. Research Participants*

30 college students from China and the United States at a Chinese University participated in this research and they were divided into three groups, 10 in each group. Among them, there are two groups of Chinese students, namely the

English major group and the non-English major group, and one group of American students as the control group. All participants from the English major group have passed the TEM-8 test<sup>1</sup>. Students in the non-English major group did not obtain any English proficiency test certificate, but participated in the Chinese college entrance examination English test. All the Chinese participants have lived in China since birth and have been learning English since at least the third grade from their primary school. All American students have lived in the United States from an early age and are native speakers of English.

### B. Materials and Steps

The material used in this study is 10 photos chosen from the famous children's story book *Frog, where are you* (Mayer, 1969), which has been used in more than 70 languages in oral description tasks. This is a classic wordless picture story book used for oral or written motion event description elicitation since Slobin's research in 1996 (Slobin 1996a, b). This book was chosen mainly for the following characteristics. Firstly, there are no words in books, breaking the constraints of language types and understanding. Secondly, the content of books is simple, suitable for any age or cultural background readers. Thirdly, the content of the story is composed of a series of motion events. Fourthly, this wordless picture book can provide different motion event scenes for the analysis of motion events. In order to reduce the hindrance of vocabulary, the observer prompted some potentially difficult vocabulary about objects (such as "cliff, antler, owl") next to the picture, so that the participants' attention is on their depiction of motion event scenes. The experiment was held in a quiet office at a university, and each participant was tested separately. All participants were required to use English to tell stories based on what they read from the book, and they were given the book to browse in advance and were allowed to consult unfamiliar words before they started to narrate. There was no time limit for participants to describe the pictures, and the oral story telling by each participant was recorded for transcription and coding.

### C. Coding

The oral narration of the participants was divided into clauses to form the basic unit of the study. Each clause contains a complete sentence. In order to find out as many verbs used as possible, action statements were all kept for analysis. An action statement usually contains a verb representing an action to describe a change in location, position, posture, form or state. There are 1226 action statements made in the English major group, 957 action statements by the non-English major group and 1235 such statements in the native speaker group. The linguistic data were collected from four major lexical categories, namely the type of verbs chosen by the participants, the participants' description of the ground of the motion events, the description of static or dynamic scenes in the picture, the use of spatial prepositions in the process of describing motion events and spatial deictic preference. For the purpose of this research, the researcher divided the verbs elicited by the participants into Manner verbs and Path verbs and Motion-neutral verbs. Manner verbs are those which express the way or mode of motion or movement (e.g. jump, fly, swim, plunge). Path verbs are verbs used to express the origin, course, track or the endpoint/destination of a moving figure in a motion event (e.g. pass, descend, return, exit, come), motion-neutral verbs are those which can express a certain state, posture change or movement, but there is no lexicalized concept component of path and way of movement (e.g. sit, get, move, change). According to this classification, non-motion event related words such as those expressing emotion, dialogue, opinion, abstract concept verb and so on are removed. Plus-Ground or Minus-Ground labels were given to the statements with or without lexicalization of Ground concept in the motion event verbalization by participants.

## IV. DISCUSSION ON RESEARCH RESULTS

### A. Verb Types

There are a large number of verbs in English and Chinese that can express the key Motion Event conceptual components of MANNER, PATH (Talmy, 2000a, b), which provide many replaceable words for native speakers to make the motion description more vivid. This leads to the question of whether the second language learners can overcome the obstacles of their mother tongue and whether they can use many kinds of words as well as their mother tongue when using the action words of the new language. Although there are a large number of action words in both English and Chinese, there is often no one-to-one correspondence. Native English speakers tend to use specific words with greater granularity, while second language learners tend to use words with less precise meanings. For example, when describing the movement of the bees in the scene of a large group of bees chasing the boy, native English speakers used a variety of verbs such as "fly, swarm, buzz, hum, dash, circle, chase, etc." while Chinese participants' vocabulary was rather restricted with only "fly, chase, follow." When depicting the scene of the little frog escaping from the jar, English native speakers used such diverse verbs as "tiptoe, jump, hop, sneak, step, escape, flee," while in contrast, Chinese EFL learners only presented verbs as "jump, run, escape, get". The Chinese participants often put forward words of the basic action verb categories as defined in the two-tier categories by Slobin (1996a). As it shows in the data collected, Manner verbs used by Chinese EFL participants were not as diverse and at a more basic level of meaning.

<sup>1</sup> TEM 8 test is Test for English Majors Level 8. It is a national English proficiency test designed for English majors in China. Those candidates who pass the TEM8 test are considered to reach an English proficiency level of C1 and over (proficient user) as correspondent to the Common European Framework of Reference for Language.

This is in conformity of the finding of Slobin (1996a, b). A comparison of the types of action verbs used by the different participant groups is given in table 1. In the experiment, 69 verbs were used in the English major group, 47 verbs were used in the non-English major group, and 80 verbs were used in the control group. The number of verbs used in the second language in the English major group was much higher than that in the non-English major group, which was closer to the control group. A total of 34 Manner verbs were used in the English major group, 25 in the non-English major group, and 39 in the native speaker control group. This indicates that these EFL learners use more English Manner verbs in oral expression as their English proficiency improves. Similarly, the number of path verbs and motion neutral verbs used by the participants in the English major group was larger than that of students in the non-English major group, which was closer to the result of the control group. For example, in describing the bee-chasing-boy scene, the participants used Manner and Path verbs with different granularity.

- (1) A dark cloud of bees comes swarming out of the hive, chasing the boy and the dog. (Native Speaker No.1)
- (2) A great number of bees flew out, following the boy. (English major speaker No.5)
- (3) A lot of bees fly out and they are after the boy and the dog. (Non-English major speaker No.7)

TABLE 1  
VERB TYPES

Verb types	English Major Group	Non-English Major Group	Native speaker group
Manner verbs (e.g. tiptoe, jump, thump, hop, step, drop, swarm, buzz, fly, plunge, crawl, sneak, fall, dash, rush, charge, dart, swim, run, land, etc.),	34	25	39
Path verb (e.g. escape, exit, pass, descend, enter, leave, reach, return, fetch, come, go etc.)	24	14	27
Motion Neutral verb (e.g. change, sit, stand, get, lie, lose, disappear, make, see, etc.)	11	8	14
total	69	47	80

### B. Ground Specifications

Native English speakers showed a greater preference in explicitly expressing the ground of a motion event (Slobin, 1996a, b). Following the approach by Slobin (1996b) and Cadierno (2004), this study also distinguishes whether Ground is specified in the motion event expression with plus-Ground and minus-Ground categories. Although it is argued that satellite-framed languages may tend to express ground more often than verb-framed and equipollently-framed languages (Slobin, 1996b, p. 201), it has not been confirmed yet. As is revealed in this research, due to the great differences between English and Chinese language typologies, the description of Ground information by English native speakers and Chinese EFL learners were different. Most native English speakers produced a description of ground by conveying the origin, course and/ or ending point of movement through a series of prepositional phrases. In the sentences, verbal prepositional phrases are used to express the movement path or direction of a moving entity. The English native speakers produced such sentences as "(4) The frog comes right out of the tin and jumps out of the window." (Native speaker No.1) While in contrast, the EFL participants used sentences such as "(5) The frog jumped out." (Non-English major speaker No. 1). Besides, it is apparent that native speakers used sentences with a series of path expressions in a conflated way while Chinese EFL participants tended to separate the complex motion scenes in sequence. For example, native speakers produced such conflated sequential Path descriptions as, "(6) The boy and the dog fell off the cliff into the pond." (Native speaker No. 1) In contrast, an EFL learner would say, "(7) The boy fell off the mountain into the water, and the dog fell into the water, too." (English major speaker No. 2). Examples can also be seen in the following sentences.

- (8) The deer picks up the boy onto its antlers, rushing towards a cliff and tops him over the edge. (native speaker No.1)
- (9) The deer carried the boy on his head and pushed him off the cliff. (native speaker No.2)
- (10) The dog too, he fell into the water with the boy from the cliff. (English major speaker No.3)
- (11) The little dog ran along the deer and together he fell down with the boy. (English major speaker No. 5)
- (12) And then the stag shook its head, making the boy fall to the river, down the cliff. Dog also fell into the river. (English major speaker No.7)
- (13) The deer throw the boy down and the dog fell down too. (non-English major speaker No.4)
- (14) The deer pushed the boy and dog down. (non-English major speaker No.3)

As shown in table 2, 83% of the students in the English major group described the GROUND while the remaining 27% did not include the GROUND in describing the plot. In the non-English major group, 69% of participants clearly described the Ground information, while 31% of participants ignored the Ground element in their description. 91% of the participants in the native speaker group described the Ground in detail, while only 9% described less. Research participants in the non-English major group tended not to express the GROUND in their description, while those in the English major group used more lexical elements incorporating the GROUND concept, similar to the native speaker group. For example, in describing the scene in which the boy was by the deer antlers and knocked off the cliff, the EFL learner participants produced sentences with less GROUND lexicalization as illustrated in examples (8) to (14). But it

was found that English major participants' sentence production were more similar to those by the control group. This indicates that, with the improvement of English language proficiency, the EFL learners were more aware of the lexicalization patterns of the target foreign language and were better capable of doing so. For instance, (15) The deer broke so hard that the boy and the dog fell off the cliff into the small pond. (English major speaker No.8). It seems that the proportion of GROUND lexicalization increased with the language competence level.

TABLE 2  
GROUND SPECIFICATION

	English Major Group	Non-English Major Group	Native Speaker group
Plus-ground expression	83%	69%	91%
Minus ground expression	17%	31%	9%

### C. Description of Static Physical Environment

It is interesting to note that Chinese participants inclined to add some static environment description on top of their Motion event description. For example, in describing the chasing of bees, Chinese participant produced such sentences as: "(16) Under the big tree, the bees chased the boy and the boy fell to the ground. There are other big trees around." (English major speaker No.1). And for other picture description, similar static setting introduction can be found. For example,

(17) They came out of the water. It was a pond or a river. (non-English major speaker No.7)

(18) The frog climbed out of the jar. The window is just next to the jar. (English major speaker No. 1)

(19) An owl flies out. The hole in the tree is his home. (non-English major speaker No.9)

It seems that these EFL participants wanted to add environment or context descriptions besides PATH or GROUND information to their motion encoding. Such information is more like a spatial reference system or background description rather than the GROUND element of the Motion event. This may be the reflection of the distributive PATH and GROUND lexicalization pattern influence from their mother tongue of Chinese. As revealed from the data, the static physical environment or setting was described by 4 students in English major group and 5 non-English majors, accounting for 33.3% and 41.7% respectively. In the control group, no students tried to describe static scenes or settings. In contrast, both groups of Chinese students gave priority to the description of dynamic movement, accounting for 66.6% and 58.3%, respectively.

TABLE 3  
DESCRIPTION OF PHYSICAL SCENE

	English Major Group	Non-English Major Group	Native Speaker group
Static physical environment description added	4 (33.4%)	5 (41.7%)	0 (0%)
Dynamic motion only	8 (66.6%)	7 (58.3%)	12 (100%)

### D. Use of Spatial Prepositions

When using English to describe the setting of the motion events, EFL learner participants of this current study were likely to be affected by grammatical differences, or limited by the mastery of English spatial prepositions, and they could not always express the movement accurately. For example, Chinese EFL participants produced preposition misused sentences like the following.

(20) There is no frog in the bottle. (non-English major speaker No.9)

(21) The dog fell off to make a crack on the jar. (non-English major speaker No.4)

(22) The boy holds the dog on his arms. (non-English major speaker No.8)

(23) The broken pieces of the jar scattered in the land. (English major speaker No.3)

Obviously, their use of "in" and "on" in these sentences did not always conform to the norms of spatial categorization in English. Native English speakers would use "in" to describe a hole in the shirt and crack in the jar. As shown in table 4, participants in the English major group made 8 spatial preposition errors out of 1226 statements, while those in the non-English major group made 17 spatial preposition errors out of their 957 statements. In the control group, there were 5 errors in the use of spatial prepositions in 1235 action sentences, accounting for 0.65%, 1.78% and 0.40% of the scores. The proportion of Chinese college students making mistakes in the use of spatial prepositions decreased by 1.13% from the English major to Non-English major group. This indicates that as these EFL learners acquire a solid grasp of English knowledge, errors in the use of spatial prepositions gradually reduced.

TABLE 4  
USE OF SPATIAL PREPOSITIONS

	English Major Group	Non-English Major Group	Native speaker group
Misuse rate of spatial prepositions	8 (0.65%)	17 (1.78%)	5 (0.40%)

## V. CONCLUSION

To sum up, this research focused on wordless picture book elicited oral motion event description by Chinese EFL learners for the purpose of exploring English-Chinese motion event lexicalization pattern differences and the cognitive preference reflected through target language production. Although this research was limited in the number of participants, it did reveal some thinking for speaking distinctions between Chinese EFL learner participants and their native English speaker counterparts in motion event conceptualization and lexicalization. As indicated by the research, Chinese EFL participants acquired and applied more basic English Manner verbs but with less granularity in MANNER and PATH lexicalization, and they tended to describe complex motion scenes in a sequentially separated way and with minus-Ground specification while the native English speakers may conflate the PATH and GROUND elements in a series of verbal prepositional phrases with GROUND concept explicitly expressed in noun or other phrases. It was also found in this study that both the EFL participants and native speakers of English depicted more dynamic scenes than static background in their picture description. With the improved language proficiency, however, the Chinese EFL participants tended to use more Manner verbs and presented more information about the environment depicted in the scene, the settings or context of the motion events before they proceeded with their motion description. Such motion event lexicalization pattern variation can be regarded as a reflection of the cognition and thinking conventions from different native language influence. As the mother tongue fosters a language specific way of cognition and thinking, and acquiring a new language may mean to learn another way of thinking or attention distributing, this research on bilingual Chinese adult EFL learners' online thinking for speaking process in target language production can shed some light on the relation between language and mind. It is suggested that in order to facilitate the foreign language acquisition, instructors may include knowledge about the English-Chinese lexicalization typology difference and conceptualization variation for the EFL learners to better understand the target language and further improve their learning and language level.

## ACKNOWLEDGEMENTS

The research is supported by Humanity and Social Science Youth foundation of Ministry of Education with the project entitled *A Parallel Corpora Based Contrastive Cognitive Linguistic Study on Chinese-English Motion Events' Spatial Reference System Expressions* (Project Grant number: 17YJC740008). This research is also supported by Shanghai Peak Discipline Program (Class I): Foreign Languages and Literature.

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**Jia Chen** was born in Jiangxi, China in 1979. She received her Ph. D. degree in English Language and Literature from Shanghai International Studies University, China in 2010.

She is currently an associate professor of linguistics in the MOE Training Center for Overseas Study & College for International Cooperative Programs, Shanghai International Studies University, Shanghai, China. Her research interests include cognitive linguistics and EFL teaching and learning.

Dr. Chen is Member of China Cognitive Linguistics Association (CCLA).