

A Comparative Analysis on Motion Events Encoding by Chinese ESL Learners

Jing Sun and Hye K. Pae

Abstract—Cross-linguistic influences have been well documented in English as a second language (L2) acquisition. First language (L1) influences on the acquisition of L2 English verbal phrases are worth more investigation, considering the difficulty of mastering English post-verbal prepositions, adverbs, and particles for Chinese native speakers. This study examines how typological characteristics of L1 shape the way Chinese learners encode motion events and formulate multiword motion verbal phrases in L2 English. Forty-eight college Chinese and native English speakers' elicited writing data were collected and analyzed quantitatively and qualitatively. Results showed that native speakers of Chinese less frequently used post-verbal satellites to encode Path of motion in L2 writing than native English speakers. In addition, three pivotal features in Chinese learners' motion verbal phrase structures emerged for the discussion of instructional implications: underuse, misuse, and confusion. Pedagogical implications were also provided.

Index Terms—Chinese ESL learners, cross-linguistic influences, L2 English, motion event.

I. INTRODUCTION

English as a second language (L2) learning involves many factors, such as age of learning, exposure to the English language and speaking environments, and learners' first language (L1). Of significance are L1 influences on learners' L2 English acquisition because discernible differences from native speakers exist in grammar knowledge and sentence processing [1]. It is important to investigate L1 influences on adult English as a Second Language (ESL) learners' grammatical performance and patterns, as distinct linguistic relatedness and/or differences between L1 and L2 play a significant role in L2 learning, which in turn, facilitate or impede learners' native-like English mastery and academic success in English [2]. The purpose of this study is to empirically compare English verbal phrase formulation of motion events by Chinese speaking bilingual learners and native English speakers, in order to reveal the impact of L1 on Chinese learners' L2 motion verbal phrase construction.

Talmy's (1985, 1991, 2000) theory of language typology dichotomously classified languages into satellite-framed languages and verb-framed languages, in regard to phrasal-verbs describing the Manner and Path of a motion [3]-[5]. Satellite-framed languages, such as English, German

and Chinese (to be explained below), conflate semantic components of the action (Motion and Manner) in the main verb, and Path in a satellite to the main verb in the form of post-verbal prepositions, particles, or subordinate clauses. An example in English is, *The rock slid/rolled/bounced [Motion and Manner] down [Path] the hill* (p.62) [3]. Verb-framed languages, such as Spanish, Korean and Japanese, encode Motion and Path in the main verb without post-verbal satellites, with Manner expressed separately. For example in Spanish, *La botella entro a la Cueva (flotando) (The bottle moved-in to the cave [floating]; The bottle floated into the cave)* (p.68) [3].

Chinese language, on the other hand, tend to encode Path either in satellites (the second element of a compound verb, or resultative complement) [3] or in another main verb (equipollent-framed) [6], [7], depending on the interpretation of the verbal and post-verbal component. To illustrate, the sentence *Pingzi piaoguo shitou pangbian* can be interpreted as either *The bottle floated [Motion and Manner] past [Path] the rock* (p.107) [3] or *The bottle floated [Motion and Manner] and passed [Motion and Manner] the rock*.

II. LITERATURE REVIEW

In recent years, motion event encoding has been extensively studied in applied linguistics and L2 learning from the collective perspective of cognition, mind, and language. Existing empirical research on motion event encoding has pointed to cross-linguistic influences on speech and gesture in the following four main domains: (1) L2 English motion event encoding by various L1s, such as Polish [8], Russian [9], and Chinese [10]; (2) learners' of other L2s beyond English for a greater generalizability, for example, L2 French [11], L2 Spanish [12], and L2 Chinese [13]; (3) L1 typological effect on L2 speech and gesture [14]; (4) L2 typological effect on L1 [15], [16].

In general, bilinguals whose L1 and L2 are satellite-framed and verb-framed, or vice versa, tend to be affected by their L1 more significantly than bilinguals whose L1 and L2 are from the same language type [10], [17]. In other words, the further away a learner's L1 and L2, the more L1 effects could be observed in L2 motion event narration.

In a study of L1 typological effects, Spring and Horie (2013) found that native English speakers exhibited significantly higher tendency in satellite framing than both Chinese (equipollent-framed) and Japanese (verb-framed) learners [17]. A significant difference was observed between Chinese speakers' and Japanese speakers' satellite framing preference. Brown (2015) also found that bilingual Chinese and bilingual Japanese learners of English produced

Manuscript received September 24, 2018; revised November 22, 2018. This work was supported by the College of Education, Criminal Justice, and Human Services Graduate Student and Faculty Research Mentoring Grant at the University of Cincinnati.

J. Sun and H. K. Pae are with the University of Cincinnati, Ohio, USA (e-mail: sunj9@mail.uc.edu, paehe@ucmail.uc.edu).

significantly fewer uses of Manner than monolingual English speakers in speech [10]. However, as the core of a motion event [4], the Path of motion encoding by Chinese and Japanese bilinguals was not reported in this study. In this respect, Brown and Gullberg (2010) discovered that bilingual Japanese learners of English were likely to encode Path more in verbs than in adverbial phrases compared to satellite-framed English speakers [18]. With a main intention of comparing bilinguals with monolingual Japanese speakers in terms of L2 influence on L1, this work focused on holistic expression of Path by Japanese speakers in verbs, rather than on Path encoded with post-verbal satellites between two typologically different L1s.

Being referred to as either satellite-framed or equipollent-framed, Chinese's typological distance from English is not definite. It is also unclear how Chinese speakers encode Path of motion in post-verbal satellites in L2 English differently from the perspective of language typology and cross-linguistic transfer. The gap in comparative studies between Chinese ESL learners and English speakers as well as the current trend in motion event encoding have given rise to the current study.

III. CURRENT STUDY

A. Rationale

Theoretically, both Talmy's and Slobin's frameworks categorized the typology of Chinese differently from English (i.e., satellite-framed and equipollent-framed, respectively). Comparing Chinese speakers' motion event encoding in L2 English with that of native speakers could reveal L1 influence and cross-linguistic transfer in Chinese learners' performance. In addition, although some Chinese historical linguists proposed that Chinese was under historical transition from a verb-framed language to a satellite-framed language [19], [20], the comparison between Chinese bilingual and native speakers' data on motion event encoding may shed some light on typological distance between Chinese and English since there is not a unanimous conclusion on the typology of Chinese.

Methodologically, as more evidence is being accumulated from a wide range of L1s, research has also occasionally provided contradictory findings that might cloud the generalization of cross-linguistic influences and its application to L2 learning [8], [9]. In terms of the data type, previous research has been focusing on L2 learners' speech (and gesture) [10], [14], leaving writing samples less discussed. Writing data may reveal learners' underlying competence that simultaneous speech cannot provide [21]. In particular, writing samples offer another platform to evaluate learners' underlying competence over instantaneous performance in speech, which could potentially lift the threat of ecological validity posed by participants' anxiety or confusion in lab-administered data collection of simultaneous speech [22].

Pedagogically, among the empirical contributions of motion event encoding research to the field, a few have provided pedagogical implications such as the length of immersion, contextualized teaching, television viewing, and

audiovisual materials in L2 classrooms [17], [23]. The numbers of Chinese speaking students rank top in U.S. college classrooms [24], yet little literature has been dedicated to the analysis of their verbal phrase patterns nor to pedagogical implications on their performance in this matter.

Mostly because of aforementioned theoretical, methodological and pedagogical rationale, this study investigated Chinese ESL learners' L2 English post-motion-verbal satellite production in a writing task to expand on the extant literature. Results have the potential to add evidence to the typological discussion of Chinese and suggest on the instruction of English verbal phrases for Chinese learners of English.

B. Research Questions

In this study, motion events refer to voluntary physical movements of a figure through action with change of position or location. By examining post-motion-verbal satellite production, as well as motion verbal phrase preference and pattern in a writing task by Chinese speakers, compared to those of native English speakers, this research aims to identify typologically dissimilar L1s' effects on Chinese learners' written production when encoding Path through motion event expressions in L2 English. Two research questions (RQ) were addressed: (1) How do Chinese speaking learners of L2 English encode Path of motion, in comparison to native English speakers? (2) What are the prominent features in L1 Chinese learners' motion event encoding in L2 English?

C. Method

1) Participants

A total of 48 university students participated in this study, including 29 Chinese (11 females, mean age=20.3, SD=1.5) and 19 native English speakers (all female, mean age=21.1, SD=3.1). None of the native English speakers had learned Chinese before.

2) Materials

This study used a storybook *Frog, where are you?* [25] as a prompt to elicit writing narratives. Previous research on motion event encoding also used the frog story as a prompt [9], [26], [27]. A static picture book like the frog story is appropriate for this study to examine participants' underlying L2 competence in a writing task because static pictures give participants enough time to comprehend the motion event in scene and finish writing without constant attention to the stimuli and distraction.

Frog, where are you? [25] is a wordless black-and-white picture book containing 24 pictures. It depicts a boy and his dog's effort and adventure in finding their pet frog that ran away from their house. For the efficiency of collecting elicited writing data on motion events while maintaining the cohesion of the whole story, 10 pictures that fully convey the storyline were used for data collection. Five out of the 10 pictures (No. 2, 5, 6, 7, 9) include salient motion of the characters, while the other five pictures (No. 1, 3, 4, 8, 10) mainly depict static scenes or transition of settings.

The Word Ordering Subtest of the Test of Language Development-Intermediate: Fourth Edition (TOLD-I: 4) [28]

was also used to gauge Chinese ESL learners' expressive grammar knowledge and general English proficiency. (The subtest was originally designed as an oral measure to assess syntactic skills, but the modified version of the test was used as a written test.) In this test, the participants were given three to seven randomly ordered words on the projector and asked to formulate a feasible sentence using only the words provided.

3) Procedure

Data were collected during an in-class administration of a paper and pencil test for an exchange of extra credit at a Midwest university in the U.S. The participants were given two minutes to write what they saw in each picture of the story. Next, the TOLD test was administered for Chinese participants with each of the sentence formulation items projected one at a time.

4) Coding scheme

Collected writing data were logged in verbatim into a learner corpus. Adopting Pavlenko and Volynsky's (2015) definition of "voluntary" motion verbs as "figure changing position or location" in this material (p. 40) [9], a coding scheme was created for data analysis. Examples of motion verbal phrases with satellites included *wake up*, *run away*, *run towards*, *fall down*, *look for*, and *search for*. Phrases such as *look at*, *shout for*, *find out* were considered non-motion phrases; thus excluded for analysis in this study. In addition, since particles, prepositions and adverbs could function as satellites after motion verbs to encode Path [4], tokens of post-motion-verbal satellite included post-motion-verbal particles (e.g. *fall down*), prepositions (e.g. *run towards*) and adverbs (e.g. *go outside*). Two coders checked data coding for inter-rater reliability. Reliability coefficient reached 95%.

IV. RESULTS

A. Path of Motion Encoding (RQ1)

In order to answer the first research question, an independent samples t-test was performed as the first step (N=48), using the total frequency of post-motion-verbal satellites produced for the story between the two L1 groups as the dependent variable. There was a significant difference in the total frequency of post-motion-verbal satellites produced by Chinese speakers (M=10.1, SD=3.57) and native English speakers (M=13.68, SD=2.79); $t(46)=-3.692$, $p=.001$.

Depending on the salience of motion in each picture, it was predicted that the participants would produce different amount of motion verbs and post-motion-verbal satellites across pictures. In order to compare Chinese learners' encoding of motion events with native speakers' in particular, it was necessary to probe their performance differences picture by picture. Next, another t-test on each picture of the story was run (N=48). The mean frequency of satellite produced in each picture by the two L1 groups were illustrated in Fig. 1. A significant difference in the mean of post-verbal satellite production between Chinese learners and native speakers was found in picture 6, ($t[46]=-5.464$, $p<.05$), picture 7 ($t[46]=-2.807$, $p<.05$), and picture 9 ($t[46]=-2.038$,

$p<.05$).

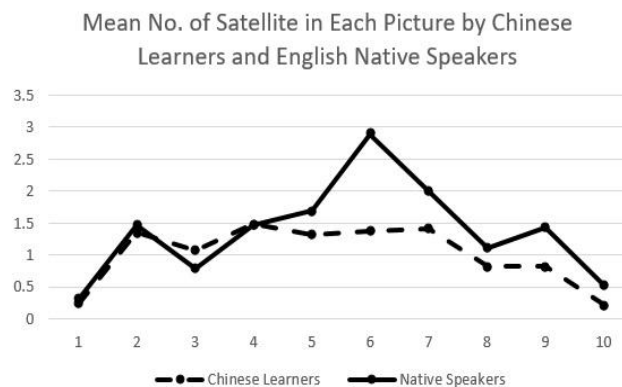


Fig. 1. Production of satellites in each picture by Chinese learners and English native speakers.

B. Characteristics of Chinese Learners' Encoding Patterns (RQ2).

While quantitative data indicated a significant difference in satellite production in general and in motion salient scenes between native speakers and Chinese learners, qualitative evidence showed learners' underuse and misuse of post-motion-verbal satellites, compared with native speakers who showed unanimous and clear encoding of Path as well as diverse use of Manner verbs.

In picture 6, an owl flies out of the tree hole and startles the boy out of the tree, and the dog is chased by the bees. In the description of this scene, native speakers diversely used running away or sprinting away to describe the scene where the dog was chased by the bees, whereas Chinese speakers wrote: The dog run immediately; and The dog is running fast to avoid the bees. In these examples, Chinese learners preferred single verb run for the motion and avoided post-verbal preposition encoded with Path or encoded Path in a separate clause at the end of the sentence: to avoid the bees. In addition, Chinese learners also preferred appear over show up, as in Suddenly, a big bird appear in front of him; Many animals appear to them. In this instance, Chinese learners conflated Path of the motion show up into a main verb appear. Beside underuse, evidence of misuse was also identified, for example: *The branches are twisted [with] each other and *The boy is spreading [out] his arms. In both examples, learners dropped the Path to be represented by prepositions.

In picture 7, a deer chases the boy and the dog and they fall off a cliff. While native speakers used fall off the cliff, pushed off the cliff or rammed off the cliff to describe the boy and the dog being chased, typical examples such as They dropped from the tree; They fall from the mountain; *He fall down [off] cliff were repeated identified as more tokens of underuse and misuse. In these examples, Chinese learners preferred to encode Path of motion fall off into the main verb drop, or dropped the Path off prior to the prepositional phrase from the mountain. Although fall down could be considered as indicating Path, learners did not distinguish the pragmatic use between post-verbal prepositions down and off in nuanced difference of scenarios.

In picture 9, the boy and the dog lean over a lying tree trunk to look for the frog, after being chased (picture 7) and fall into a pond (picture 8). More fine-grained verbs followed

by Path were used in native speakers' data, such as lean over, climb over, lay over, and pull themselves up. Although such uses as cross over were also identified, most Chinese learners' tended to describe this scene as static as picture 8 where the boy and the dog sit in a pond as a result of being chased, until they saw the next picture (picture 10) where they saw the boy and the dog sitting on the tree trunk. Interestingly, among the descriptions of motion, Path was not encoded, for example: *climb [over] the trunk.

V. DISCUSSION

A. Quantitative Analysis

This study investigated how Chinese ESL learners encoded the Path of motion with the representation of post-motion-verbal satellites, in comparison to that of native English speaking peers. Overall, Chinese learners produced significantly fewer post-verbal satellites to encode Path in satellite-framed English than did the native English speakers. The quantitative results from this study, in response to Research Question #1, was consistent with those of Brown's (2015) and Spring and Horie's (2013) studies wherein native English speakers exhibited a significantly higher tendency in satellite framing than Chinese speakers [10], [17].

As described earlier, the 10 pictures selected from the story book contained five pictures with salient motion events of the characters, namely, No. 2, 5, 6, 7, 9, and five static scenes or transition of settings, namely, No. 1, 3, 4, 8, 10. However, only picture 6, 7, and 9 revealed significant difference between two groups in the mean frequency of post-verbal satellite production. In picture 2, the frog is trying to sneak out of the jar while the boy and his dog are sleeping in bed. In picture 5, the boy climbs on a tree and looks into the tree hole for his missing frog, while the dog shakes another tree and causes a beehive to fall from the tree. Despite overall quantitative results and qualitative exploration on picture 6, 7, 9, insignificant results on these two motion salient pictures induced a hesitance in drawing a conclusion on the typological difference between the two languages and the influence of Chinese learners' L1 on their L2 English motion event encoding.

Often times, comparative L2 research tend to interpret L2 learners' deficiency in the target language as a failure in nativelikeness. However, as Cook (2015) pointed out, we should focus on "the reasons why L2 users create novel ways of thinking rather than in their putative deficiency compared to monolingual native speakers" (p. 157) [19]. Therefore, in addition to providing quantitative evidence on the general tendency of "how" Chinese speakers' perform comparing with native speakers, the second research question addressed the "why" question by elucidating prominent features in Chinese speakers' production of motion verbal phrases.

B. Qualitative Analysis

The qualitative analyses in Chinese speakers' writing data identified prominent features of underuse and misuse in their satellite framing, in response to Research Question #2. For example, learners tended to prefer single verb *run* without a Path *away*, encoded Path of motion *show up* in the main verb appear, *fall off* in *drop*, or mistakenly dropped the post-verbal satellite *off* and *over* in *fall off* and *climb over*, respectively.

Confusion in word class (i.e., part of speech) was also identified in Chinese speakers' writings: **Suddenly, frog attempts to escape to outside*; **So they go to outside in order to shout*. In these instances, learners confused post-verbal adverb *outside* with a noun. In Chinese, an adverb (e.g., *outside*) can function as a noun at the beginning of a sentence; hence, it was natural for a Chinese speaker to produce a sentence like **He goes to outside* as the same structure as *He goes to school*. Moreover, English prepositions such as *down* can function as a directional complement after the main verb in Chinese and can be considered a verb if the main Manner verb is omitted. For example, Chinese sentence *Ta [zou] xia shan chifan* would be problematic in English: **He [walks] down the mountain for food*. Hence, due to L1 influence, Chinese learners could confuse these adverbs with nouns or verbs in verbs phrases.

In addition to underuse, misuse, and confusion, Chinese speakers also avoided phrasal verbs and took advantage of semantically equivalent verbs that do not require a post-verbal preposition in lexicalization. For example, they replaced look for with find, as repeatedly identified in Picture 4: **The boy and his dog started to find [look for] the frog*. Although semantically similar, verbal phrase look for indicates the process whereas verb find indicates the result. This replacement not only showed Chinese learners' lack of mastery in English phrasal verbs, but also reflected L1 influence: In Chinese, both the notions of process and result are mapped onto the same lexicon zhao3.

Picture 3 needed some explanation because it seemed that Chinese learners produced more satellites on average than native speakers (Fig. 1), although it was considered a static scene where the boy and the dog found the frog gone and the jar empty the next morning. An examination on the writing data revealed that Chinese speakers repeated the action of frog running away in the previous picture as a result of the empty jar in picture 3. In addition, native speakers tended to describe the status of the boy being awake instead of a verbal phrase wake up, as more frequently used by Chinese speakers.

C. Pedagogical Implications

Several pedagogical implications can be drawn from the results of this study. First, L2 English instructional practice in motion event construal is of great importance for learners to fully grapple with phrasal verbs in the English lexicalization system. This goal can be achieved by story-telling activities with unanimated stimuli, considering that animated materials have the concern of eye fixation, concentration, as well as equipment requirement in the classroom settings. Secondly, concerning Chinese ESL learners' errors in satellite framing, it is important to bear in mind the distinction of word class among prepositions, particles, and adverbs, especially to Chinese learners whose L1 lacks these post-verbal elements for verbal phrases and has words from these word classes without a clear boundary. As adult learners have already developed the complete linguistic system of their L1 and cognitive learning ability, such linguistic notions would not be an abstract burden but rather would be helpful for college level ESL learners' L2 syntactic structure building.

D. Limitations and Future Directions

Future research directions were emerged from this study. Although non-motion verbal phrases were not the focus of

current study, tokens of underuse and misuse of non-motion phrasal verbs were identified and needed further exploration because of the overall complication of prepositional verb lexicalization system in English.

In addition, although the results found that overall, Chinese learners encoded Path of motion events significantly less than native speakers, picture-by-picture comparison did not fully support to the holistic result. In two out of five motion salient pictures, Chinese learners' post-verbal satellite production was not significantly different from that of native speakers. Therefore, a closer look at more empirical evidence between the two groups is warranted before drawing a conclusion on the typological difference between Chinese and English. One way to do it is to add another L1 group of verb-framed language, such as Korean or Japanese. Inclusion of verb-framed L1 ESL learners would put three L1s in parallel to depict a clearer picture of typological scale, thus allows the possibility to posit Chinese somewhere in the middle of the spectrum for comparison.

VI. CONCLUSION

This study examined L1 typological and cross-linguistic influence on the encoding of Path in L2 English motion events by comparing Chinese ESL learners and native English speakers' writing data. The results found that overall, Chinese learners encoded Path of motion events significantly less than native speakers. However, picture-by-picture comparison revealed that typological difference between the two languages may be obscure. In addition to quantitative results, qualitative analyses revealed three pivotal features in Chinese learners' writing: underuse, misuse and confusion. This study provided more evidence on previous research and added to the body of motion event encoding research with a focus of Path using static stimuli to elicit writing data. Lastly, instructional implications were provided based on the discussion on Chinese learners' motion event encoding patterns.

REFERENCES

- [1] H. Clahsen and C. Felser, "Grammatical processing in language learners," *Applied Psycholinguistics*, vol. 27, no. 1, pp. 3-42, 2006.
- [2] M. Hickmann, H. Hendriks, and C. Champaud, "Typological constraints on motion in French and English child language," in *Crosslinguistic Approaches to the Psychology of Language*, J. Guo, E. Lieven, N. Budwig, S. Ervin-Tripp, K. Nakamura, and S. Ozcaliskan Eds., New York, NY: Psychology Press, 2009, pp. 209-224.
- [3] L. Talmy, "Lexicalization patterns: Semantic structure in lexical form," in *Language Typology and Syntactic Description: Grammatical Categories and the Lexicon*, T. Shopen Ed., Cambridge: Cambridge University Press, 1985, pp. 57-149.
- [4] L. Talmy, "Path to realization: A typology of event conflation," in *Proc. the Seventeenth Annual Meeting of the Berkeley Linguistics Society*, pp. 480-519. Berkeley, CA: Berkeley Linguistics Society, 1991.
- [5] L. Talmy, *Towards A Cognitive Semantics*, vol. 2, Typology and Process in Concept Structuring, Cambridge, MA: MIT Press, 2000.
- [6] D. Slobin, "The many ways to search for a frog: Linguistic typology and the expression of motion events," in *Relating Events in Narrative, Typological and Contextual Perspectives*, S. Strömquist and L. Verhoeven Eds., Mahwah, NJ: Lawrence Erlbaum, 2004, pp. 219-257.
- [7] D. Slobin, "What makes manner of motion salient? Explorations in linguistic typology, discourse, and cognition," in *Space in Languages: Linguistic Systems and Cognitive Categories*, M. Hickmann and S. Robert Eds., Philadelphia/Amsterdam: John Benjamins, 2006, pp. 59-81.
- [8] A. Ewert and W. Krzebietke, "Manner and path of motion in descriptions of motion trajectories by Polish L2 users of English," *EUROSLA Yearbook*, vol. 15, pp. 95-113, 2015.
- [9] A. Pavlenko and M. Volynsky, "Motion encoding in Russian and English: Moving beyond Talmy's typology," *Modern Language Journal*, vol. 99, pp. 32-48, 2015.
- [10] A. Brown, "Universal development and L1-L2 convergence in bilingual construal of manner in speech and gesture in Mandarin, Japanese, and English," *Modern Language Journal*, vol. 99, pp. 66-82, 2015.
- [11] J. Treffers-Daller and A. Calude, "The role of statistical learning in the acquisition of motion event construal in a second language," *International Journal of Bilingual Education & Bilingualism*, vol. 18, no. 5, pp. 602-623, 2015.
- [12] P. Larrañaga, J. Treffers-Daller, F. Tidball, and M. G. Ortega, "L1 transfer in the acquisition of manner and path in Spanish by native speakers of English," *International Journal of Bilingualism*, vol. 16, no. 1, pp. 117-138, 2012.
- [13] Y. Ji and J. Hohenstein, "The syntactic packaging of caused motion components in a second language: English learners of Chinese," *Lingua*, vol. 140, pp. 100-116, 2014.
- [14] S. Choi and J. P. Lantolf, "Representation and embodiment of meaning in L2 communication: Motion events in the speech and gesture of advanced L2 Korean and L2 English speakers," *Studies in Second Language Acquisition*, vol. 30, no. 2, pp. 191-224, 2008.
- [15] A. Brown and M. Gullberg, "Multicompetence and native speaker variation in clausal packaging in Japanese," *Second Language Research*, vol. 28, no. 4, pp. 415-442, 2012.
- [16] A. Brown and M. Gullberg, "L1-L2 convergence in clausal packaging in Japanese and English," *Bilingualism: Language & Cognition*, vol. 16, no. 3, pp. 477-494, 2013.
- [17] R. Spring and K. Horie, "How cognitive typology affects second language acquisition: A study of Japanese and Chinese learners of English," *Cognitive Linguistics*, vol. 24, no. 4, pp. 689-710, 2013.
- [18] A. Brown and M. Gullberg, "Changes in encoding of path of motion in a first language during acquisition of a second language," *Cognitive Linguistics*, vol. 21, no. 2, pp. 263-286, 2010.
- [19] L. Chen and J. Guo, "Motion events in Chinese novels: Evidence for an equipollently-framed language," *Journal of Pragmatics*, vol. 41, no. 9, pp. 1749-1766, 2009.
- [20] W. Shi, and Y. Wu, "Which way to move: The evolution of motion expressions in Chinese," *Linguistics*, vol. 52, no. 5, pp. 1237-1292, 2014.
- [21] V. Cook, "Discussing the language and thought of motion in second language speakers," *The Modern Language Journal*, vol. 99, pp. 154-164, 2015.
- [22] K. A. King and A. Mackey, "Research methodology in second language studies: Trends, concerns, and new directions," *The Modern Language Journal*, vol. 100, no. 1, pp. 209-227, 2016.
- [23] E. Bylund and P. Athanasopoulos, "Televised Whorf: Cognitive restructuring in advanced foreign language learners as a function of audiovisual media exposure," *Modern Language Journal*, vol. 99, pp. 123-137, 2015.
- [24] Open doors report on international educational exchange, (2016). Institute of International Education. [Online]. Available: <http://www.iie.org/opendoors>
- [25] M. Mayer, *Frog, Where Are You?* New York: Dial Press, 1969.
- [26] E. Kellerman and A. van Hoof, "Manual accents," *International Review of Applied Linguistics in Language Teaching*, vol. 41, no. 3, p. 251, 2003.
- [27] S. Wu, "Learning to express motion events in an L2: The case of Chinese directional complements," *Language Learning*, vol. 61, no. 2, pp. 414-454, 2011.
- [28] D. D. Hammill and P. L. Newcomer, *Test of Language Development: Intermediate-4*, Austin, TX: Pro-Ed, 2008.

Jing Sun is a Ph.D student in second language studies from the University of Cincinnati. Her research interests include second/foreign language education of English and Chinese from a psycholinguistic approach.

Hye K. Pae, Ph.D., is an associate professor in the literacy and second language studies at the University of Cincinnati. Her research interests include psycholinguistics, assessment, and second language acquisition.