A Look into the Acquisition of English Motion Event Conflation by Native Speakers of Chinese and Japanese

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Abstract. Since Talmy (2000 a&b) introduced his linguistic typology based on event conflation, it has been the source of much debate and ongoing research. One area that can particularly benefit from such research is the field of Second Language Acquisition. Cadierno (2008), Inagaki (2002) and many others have attempted to unveil the differences and difficulties that occur when learning a second language that is of a different type than one's native language. However, the current research in this area has thus far only dealt with satellite-framed and verb-framed languages. According to Slobin (2004), Chen and Guo (2008) and others, languages such as Chinese can be considered to be of a third type, known as equipollently-framed languages. This paper presents research that has attempted to observe the differences and similarities in the acquisition of a satellite-framed language (English) by native speakers of a verb-framed language (Japanese) and an equipollently-framed language (Chinese).

Keywords: Second Language Acquisition, Motion Events, Event Conflation, Cognitive Linguistics, Equipollently-framed Language

1   Introduction

Talmy (2000 a&b) introduced the idea of complex events that he termed 'macro-events'. He said that such events can be conceptualized as being comprised of two simpler events and the relation between them. For example, (1a), shown below, can be conceptualized as one event, and thus expressed in one sentence or phrase, but is actually made up of the two events, shown in (1b) and (1c).

(1) a. Jack rode his bike to school.
   b. Jack rode his bike.
   c. Jack went to school.

Talmy (2000 a&b) termed this conceptualization of two or more simpler events into one macro-event 'conflation'. After observing the conflation patterns of several different languages, Talmy (2000 a&b) deemed that all languages could be broken into two types based on where the language encoded the 'main event'. When the macro-event is motion, the 'main event' is considered to be the path of the motion, while the 'sub-event' is considered to be the manner of motion. Talmy (2000 a&b) dubbed languages that encoded the path of motion onto the main verb of the sentence 'verb-framed languages', and those that encoded the path of motion onto another particle 'satellite-framed languages'.

   Talmy (2000 a&b) has determined Spanish to be a verb-framed language, and gives the example shown in (2) as evidence. As can be seen, Spanish encodes the path of motion onto the verb, and puts details about the manner of motion into other particles, such as adverbs.

(2) a. La   botella entró   a   la   cueva flotando.
        The   bottle moved.in to the cave   floating.
        "The bottle floated into the cave."
    b. El globo   subió   por   la   chimenea flotando.
        The balloon moved.up through the chimney   floating.
        "The balloon floated up the chimney."

Meanwhile, English is considered to be a satellite-framed language by Talmy (2000 a&b), as it generally encodes path onto prepositions, and conflates the manner of motion onto the main verb. This can be seen in the English translations of the Spanish examples in (2) above, as well as in example (3), shown below.

(3) a. The boy jumped into the hole.
    b. The bird flew up the chimney.

While there are some exceptions to Talmy's (2000 a&b) typology, most languages have tendencies to generally fall into one category or the other. However, Slobin (2004) has since elicited the need to add a third category, which he calls equipollently-framed languages, to Talmy's original typology. According to Slobin (2004), some languages, such as Sino-Tibetan, Tai-Kadai, Austronesian, and Hokan, express path and manner of motion 'by equivalent grammatical forms' (Slobin 2004: 25), and thus would not fit into either of the original categories.

Based on the typology introduced above, it is highly possible that speakers of the different language types conceptualize motion events differently. This could potentially have great impact on how they learn a second language of a different type. This study sets out to examine the effects of transfer from one's native language on second language motion event conflation acquisition in such a case. It specifically looks to compare the processes of acquisition of English (a satellite-framed language) by Chinese (equipollently-framed) and Japanese (verb-framed) native speakers. Furthermore, it puts forth the following hypotheses: (1) A significant difference between Japanese and Chinese English learners' acquisition of English motion event framing can be found, (2) learners will tend to simply replace path verbs in their native language with "go + {path satellite}" when thinking about motion event conflation in English, leading to a lower number of manner of motion verbs and deictic verb usage different from their native language, and (3) there will be a significant jump in the acquisition of English motion event framing from mid to high level learners.

2   The Classification of English, Japanese and Chinese

Much debate has arisen over Talmy's (2000 a&b) typology, and several questions concerning how and where languages should be classified have surfaced. Thus, it was crucial to look into the research backing the classification of English, Japanese and Chinese before beginning this study.

2.1   English as Satellite-framed Language

Though English has often been cited as a prototypical example of a satellite-framed language (Talmy, 2000 a&b; Inagaki, 2002; Cadierno, 2008; etc.), there have been some questions concerning its status as such.

One of the main concerns in classifying English as a satellite-framed language has been the existence of verbs in English that conflate path of motion onto the main verb, like a verb-framed language. Some examples, taken from Levin (1993), are shown below.

advance, arrive, ascend, come, depart, descend, enter, escape, exit, fall, flee, leave, plunge, recede, return, rise, tumble

However, many of the above verbs have been borrowed into English from verb-framed languages. For example, *advance, arrive, depart, enter, escape, plunge, recede,* and *return* were taken from French, and *ascend, descend,* and *exit* were taken from Latin (Harper, 2010).

Furthermore, when Slobin (2004) examined data taken from native English speakers by showing them a picture book with no words and having participants tell the story, he found that English speakers have a strong tendency to conflate the manner of motion onto the main verb, and the path onto a preposition. This study has found similar results (refer to section 4.2). For these reasons, English was categorized as a satellite-framed language for this study.

2.2   Japanese as a Verb-framed Language

According to Beavers *et al.*(2009), Japanese grammatically allows a number of different encoding options when describing motion events. For example, the Japanese "*made*" case marker can combine with a manner of motion verb to express motion, much like a satellite-framed language. However, the use of this marker is limited by the fact that it can only encode motion "up until" a certain point (Beavers *et al.*, 2009). Beavers et al. (2009) also points to the fact that Japanese allows for some compound verbs which can encode both manner and path of motion, much like an equipollently-framed language, such as in (4a) below. However, the use of such compound verbs is also rather limited, as only a limited number of verbs can be combined in this manner, as in the incorrect example (4b), and some combinations have meanings other than what might be expected, as in (4c).

(4) a. *Otoko ga kaidan wo   kake-nobotta.*
     Boy   SM stairs DO run   go.up
     "The boy ran up the stairs."
   b. X *Otoko ga heya ni   hazumi-konda.*
      Boy   SM room IO   jump   go.in
     X "The boy jumped into the room."
   c. ? *Otoko ga hashiri-dashita.*
      Boy   SM run   go.out
     ? "The boy took off running." NOT "The boy ran out."

Regardless of the various options that Japanese makes grammatically feasible, many of these speech patterns are limited in their usage, as seen above. Furthermore, the large number of Japanese verbs that conflate path of motion points to Japanese's tendency to use such verbs (Ohara, 2007). Lastly, research done by Slobin (2004), as well as the data from this study shows that Japanese native speakers naturally tend to conflate path of motion onto the main verb and to either encode manner of motion onto an adverbial phrase or to leave this information out completely. For example, of 76 descriptions of motion events by native Japanese speakers taken in this study, only 7 (9.21%) used compound verbs, as opposed to 19 (25%) that encoded manner in a separate clause, and 50 (65.79%) that did not encode manner at all.

Due to the tendencies of native Japanese speakers to use verb-framing, and the grammatical limitations placed on other speech patterns, Japanese is considered to be a verb-framed language.

2.3   Chinese as an Equipollently-framed Language

Chinese was originally considered by Talmy (2000 a&b) to be a satellite-framed language, but research done by Slobin (2004) and Chen and Guo (2008) points to the fact that it is better classified as an equipollently-framed language. One of the first and most important arguments for Chinese's status as an equipollently-framed language comes from the fact that both manner and path of motion are regularly encoded on "equivalent grammatical forms" (Slobin, 2004: 25). In the case of Chinese, both are encoded onto verbs. This differs from English in that Chinese allows

for either manner or path of motion to be encoded in a sentence by simply adding one more particle, whereas an English preposition, which encodes path, cannot stand alone like a Chinese path of motion verb.

The ability of Chinese to encode (or not encode) both manner and path of motion onto equipollent verbs allows for the information regarding the manner of motion to be easily added or dropped (Chen and Guo, 2008). This is reflected in the fact that according to Chen and Guo (2008), when compared with English (a satellite-framed language) and Turkish (a verb-framed language) native speakers, Chinese native speakers' description of motion events did not lean towards one tendency or the other, but rather hovered close to a 50% probability of usage for both manner of motion verbs and path of motion verbs. These results are congruent with those found in this study (see section 4.2) and combined with the above reasons are grounds for classifying Chinese as an equipollently-framed language for the purposes of this study.

3   Previous Studies on Second Language Motion Event Conflation Acquisition

Talmy's (2000 a&b) typology has been applied to the area of Second Language Acquisition by several researchers (Cadierno, 2008). Some of this research (Cadierno, 2004; Cadierno and Lund, 2004; etc.) has looked at overall acquisition of motion event conflation in a second language, while other research (Inagaki, 2002; etc.) has attempted to outline the acquisition of certain patterns that are incongruent between a second language learner's target and native languages.

Cadierno (2008) summed up previous research performed by herself and other colleagues (Cadierno and Lund, 2004; Cadierno and Ruiz, 2006; Navarro and Nicholadis, 2005; etc.) regarding the ability of second language learners to acquire the motion event conflation patterns of a second language of a different type than their native language. Cadierno and Lund (2004) found that in general, native speakers of Spanish (a verb-framed language) tended to have less descriptions of manner of motion than native speakers of Danish (a satellite-framed language), both in the case of Danish learners of Spanish producing Spanish narratives and Spanish learners of Danish producing Danish narratives. Meanwhile, Navarro and Nicholadis (2005) tested highly advanced Spanish native speaking learners of English against native English speakers and found that even at advanced levels, though Spanish native speakers tended to use satellite-framing to a degree very similar to English native speakers, they retained a tendency to use a higher amount of "bare verbs" (verbs with no manner of motion information) than their English counterparts. From these various experiments, Cadierno (2008) determined that acquiring motion event conflation patterns of a second language of a type different from one's own native language is rather difficult, and tends not to occur until much higher levels of language acquisition. She concluded that "learners will probably tend to pay attention initially to aspects of a motion event they are used to from their L1, and to establish L1-based meaning-from mappings." (Cadierno, 2008)

Meanwhile, Inagaki (2002) looked at the problem by observing the ability of Japanese learners of English to notice the ability of English to express either motion or location by combining a manner of motion verb with certain prepositions (ie: Jack ran in the room could mean that Jack ran and entered the room or that he was running inside of the room). Inagaki (2002) tested English learners of mid-level ability and found them for the most part unable to recognize the existence of the motion meaning, further indicating the difficulty of second language learners to acquire the motion event conflation patterns of their target language. These results further support Cadierno's (2008) conclusion, stated in the previous paragraph.

The above research, while providing valuable insights, did have several points which could be improved upon. First, not all of the data in the experiments mentioned examined native speaker data from both of the languages in question. This data is critical to successful comparison of how the native language of the learners operates within the confines of the given experiment. Furthermore, equipollently-framed languages have not been considered in any of the second

language acquisition research thus far. Additionally, the languages used in almost all of the aforementioned studies were European, which allows for a certain amount of overlap in borrowed phrases and words that could be lessened by comparing languages from different regions, such as in Inagaki (2002). Finally, performing tests on learners of differing language ability would provide for a better view of the process of second language motion event conflation acquisition, but has not yet been adequately done. This study attempts to improve upon past research in these areas.

4   Experimentation

The present study gathered 18 Japanese and 21 Chinese learners of English living in America. All subjects were either in the English Language Training Institute (ELTI) at the University of North Carolina at Charlotte (UNCC) or had advanced beyond it into the University itself. The English learners were broken up based on English ability, using UNCC's standard of a 510 TOEFL score for entrance into the University as the cut-off point to divide the groups into mid-level and high-level learners of English. This resulted in 4 groups, high-level Japanese learners of English (HJ), mid-level Japanese learners of English (MJ), high-level Chinese learners of English (HC) and mid-level Chinese learners of English (MC). No learners were considered to be low-level.

For further comparison, the original groups of Chinese and Japanese learners of English were also later broken up based on length of time spent in America. Those who had been in America for one year or less were classified as "short term", while those who had been there longer were considered to be "long term". This resulted in the groups: short-term Japanese learners (SJ), long-term Japanese learners (LJ), short-term Chinese learners (SC), and long-term Chinese learners (LC).Finally, a group of 30 American volunteers from UNCC and Queens College City University of New York, a group of 10 native Japanese speakers from the Tohoku area, and a group of 11 native Chinese speakers from Tohoku University were also tested in their native language for comparative data, and their groups are noted below as NE, NJ, and NC respectively. The background data for the groups of English learners is expressed in Tables 1 and 2.

Table 1: English Learner Data – Divided by English Ability (TOEFL Score)

Group	Number	TOEFL Score		Years in America		Age	
		Avg.	S.D.	Avg.	S.D.	Avg.	S.D.
HJ	11	549.1	36.6	3.8	2.7	23.8	4.2
MJ	7	471.3	48	1.8	2.1	24	4.7
HC	8	541	18.3	5.1	3.2	22.5	3.7
MC	13	482	23.6	1	0.5	21.2	2.6

Table 2: English Learner Data – Divided by Length of Stay in America

Group	Number	TOEFL Score		Years in America		Age	
		Avg.	S.D.	Avg.	S.D.	Avg.	S.D.
LJ	12	514.9	47.89	4.2	2.5	25	4.2
SJ	6	500.6	61.25	0.5	0.1	21.7	4.2
LC	10	518.29	43.95	4.6	2.9	22	3.2
SC	11	483.73	19.96	0.8	0.3	21.5	3

Each group was asked to look at a series of 15 short video clips (between 7 and 31 seconds each) that made up a story. After each video clip, the participants were asked to write one sentence describing what happened in the video clip. Of the 15 video clips, there were 7 videos containing 8 motion events (one clip contained two motion events) that were included in the data analysis for this study. English learner groups and the English native speaker group were given instruction in English and asked to respond in English. Japanese and Chinese native speaker groups were given instruction in their native language and asked to respond accordingly.

First, the data of the native speakers was compared for framing tendencies, to make sure the experiment accurately reflected those predicted by the typological categorization introduced in section 2. Figure 1 shows this data, and indicates that indeed English can be thought of as satellite-framed, Japanese as a verb-framed, and Chinese as equipollently-framed. These results, shown in figure 1, were checked for significance using a chi-square test, and gave the value of $p \approx 0.0 < 0.05$, indicating a highly significant result.
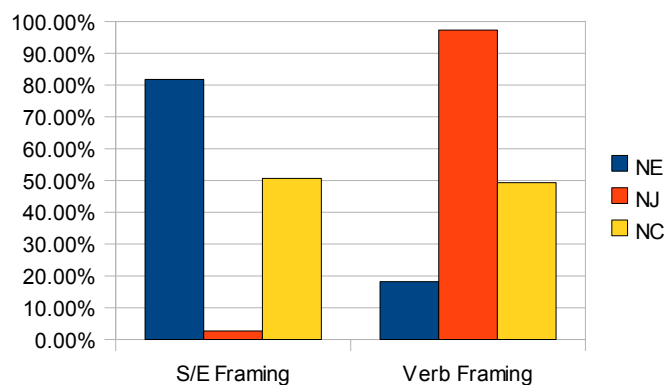

Figure 1: Amount of Satellite/Equipollent Framing versus Verb Framing Amongst Native Speakers

Next, the framing tendencies of the English learners divided by English ability (TOEFL score) was observed. Figure 2 shows that the Chinese learners of English tended to use satellite framing in English more than the Japanese learners of English, but that this rate was still lower than that of English native speakers. Analysis through chi-square tests showed that the difference between Japanese English learners, Chinese English learners, and English native speakers was significant ($p=0.02$), but that the difference between mid-level learners and high-level learners was not great enough to be considered significant ($p=0.52$ for Japanese, $p=0.15$ for Chinese).
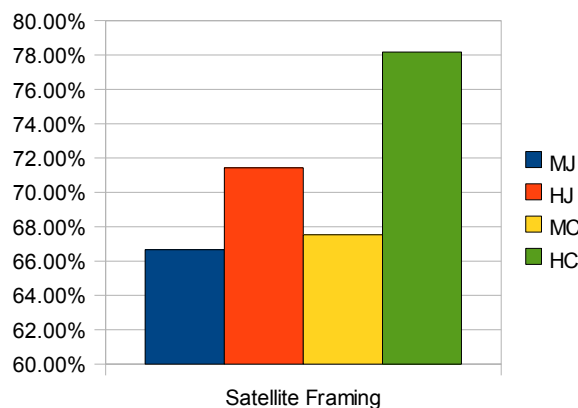

Figure 2: Amount of Satellite Framing Amongst English Learners – Divided by English Ability

The tendencies of English learners to use satellites, though significant, is not the only factor in English motion event framing. The manner of motion encoding tendencies of English learners (divided again by English ability) was compared with those of native speakers, shown in Figure 3. Whereas English speakers tended to encode manner on the main verb (59.33%), and not at all within this experiment in a separate clause, it was observed that Japanese native speakers often did not encode the manner of motion at all in Japanese (64.47%) and were more likely to encode in a separate clause than on the main verb. Meanwhile, Chinese native speakers showed about the same amount of manner encoded on separate clauses as Japanese native speakers, but were much more likely to encode manner on the main verb (39.73%), though not as often as English speakers. English language learners generally encoded manner in English similarly to their native language frame. Once again, though chi-square tests showed extremely significant difference between English speakers and learners, and between the two different groups of learners (p≈0.001), there was almost no difference seen between mid and high level Japanese learners of English, and a significance of only p=0.15 between mid and high level Chinese learners of English. Thus, though one can see a slight increase in the amount of manner of motion verbs used and a decrease in the amount of manner encoded in separate clauses by learners as learning levels increase, it is still quite small.
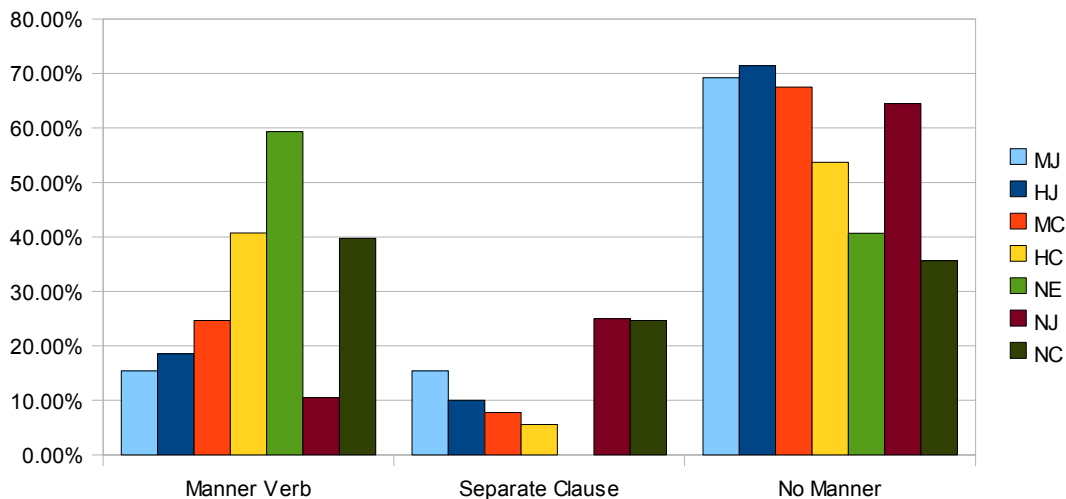

Figure 3: Manner of Motion Encoding Methods by English Learners (Divided by English Ability) and Native Speakers

When the English learners were divided by length of stay, as opposed to by TOEFL score, the amount of difference between the learners' tendency to use satellite framing became slightly larger, but not significantly so. However, the difference in how manner was encoded became much more significant. The scores of manner encoding of English learners divided by length of stay are shown below in Figure 4. Surprisingly, no short-term Japanese learners encoded any manner on the main verb, and the gap in amount of Chinese speakers who encoded manner on the main verb increased as well, allowing for significant results among each set of learners (p=0.001 between mid and high level Japanese English learners, and p=0.02 between mid and high level Chinese English learners respectively).
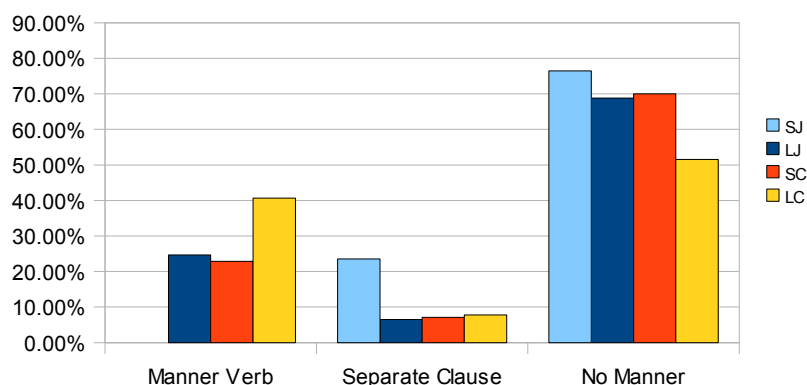
Figure 4: Manner of Motion Encoding Methods by English Learners (Divided by Length of Stay)

Finally, one more noteworthy analysis was obtained from the data collected in this experiment, shown in Figure 5, below. When the English learners' deictic verb (come/go) usage was compared to that of native speaker data, there was a significant difference ($p \approx 0.001$) between the deictic information encoded by the learners and that of Japanese and Chinese native speakers in their native language. Setting the Japanese and Chinese native data deictic usage as "standard" (there was no difference between the two), Figure 5 shows the number of times that the word "go" was used where one would expect "come" to be used, based on native Japanese and Chinese data. The graph shows that mid-level Japanese English learners overused the word "go" (62.5%) significantly more than high-level Japanese English learners (26%; $p=0.05$). While English speakers did not encode deictic information the same as native Japanese and Chinese speakers, this can partially be explained by the fact that English learners were much more likely to use deictic verbs than native English speakers (30.45% versus 10.05%) and thus produced much more viable data.
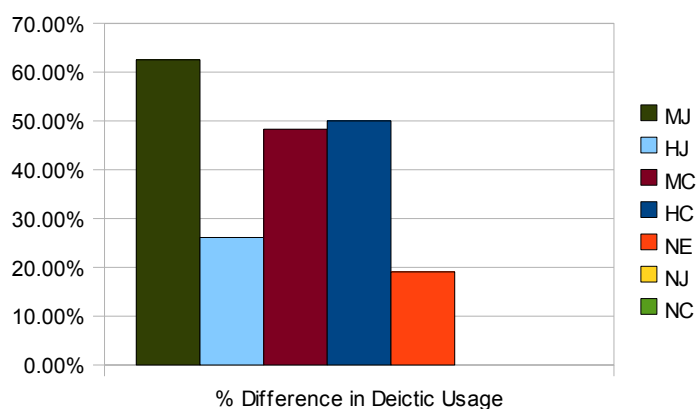

Figure 5: Percentage of Deictic Verbs Used Differently From Native Japanese/Chinese Speaker Data

Overall, the experimentation presented above was able to produce the following results:

1) There is a significant difference in the learning curves of native speakers of Chinese and Japanese in the acquisition of English motion event framing.
2) The effect of length of stay in an English speaking country has a much larger effect on English motion event framing acquisition than perceived English ability (TOEFL scores).
3) English's ability to combine satellites with manner of motion and alternate deictic verbs was more difficult for learners to acquire than the concept of using satellites to encode

path of motion in place of English path verbs

5   Conclusion

The results of this study have been able to support the first two hypotheses stated in section 1. A significant difference was found between the acquisition of English framing patterns by Chinese and Japanese learners of English. This differs from results reported in Cadierno and Ruiz (2006) that used Italian and Dutch learners of Spanish, but this can be thought to be due in part to using non-European language learners of English (a European language), as well as due to a more in-depth analysis of the data. Furthermore, the results from section 4 also reported that learning to combine manner of motion verbs with satellites proved difficult for learners. This was likely less difficult for Chinese learners of English, as Chinese native speakers are more used to encoding manner of motion onto a verb than Japanese native speakers. The fact that Japanese learners became more able to encode deictic information in English like native speakers of Japanese in Japanese with English language ability improvement also indicates the likelihood of mid-level learners' replacing Japanese path verbs with "go + {path satellite}", rather than understanding that the word "go" can be replaced with any number of verbs (manner of motion or deictic). Chinese learners' seemingly stagnant results in deictic verb usage could be due to the fact that Chinese native speakers are used to encoding both manner and deictic information simultaneously and equipollently onto verbs, whereas English only allows for one or the other to be encoded onto the main verb. This could cause interference in the Chinese learners' acquisition of encoding deictic information. This interference would not be as likely to occur in Japanese learners, as they are only used to encoding deictic information on verbs – not manner.

The third hypothesis given in section 1 was not exactly supported by the data. There was not as large of a gap in the framing or manner encoding as was originally expected between mid and high level learners of English. However, in making a second group division based on length of time in America, this study was able to uncover the fact that length of time in an English speaking country seems to have a greater effect on the acquisition of English motion event framing than perceived English ability (test scores) does. This discovery hints at the very likely possibility that the input provided to second language English learners in both China and Japan is not adequately representative of natural English motion expressions. Hopefully, the results and conclusions drawn in this study can be used to better second language education of English in these countries.

From the results and conclusions drawn in this paper, the following advice could be considered in the future of English as a second language education:

1) When teaching about motion events, showing students English's manner of satellite-framing and encoding manner on the verb should be shown first. Although it would be easier for students of verb-framed languages especially to learn English path verbs such as "enter" and "exit", such phrases would be likely to fossilize quickly, resulting in less natural English speaking and a weaker grasp of English's standard motion event conflation patterns.

2) Some popular patterns taught in English as a Second Languages, such as "go to X by Y" (where X is the goal and Y is the means of transportation) are easily acquired, but are rather unnatural in English (no native English speakers used such a pattern once out of 209 responses in the data). Furthermore, they promote the cognition of ungrammatical English, such as "I went to the store by running", and are easily fossilized. Such patterns should be reconsidered in second language English education.

3) More effort should be expended to bring learners to an understanding of the various meanings that English prepositions can encode, such as path of motion.

Future research in the area of second language motion event framing acquisition should

hopefully build on the experiment reported in this paper. Ideally, such experimentation would include low, mid, and high level learners, and would hopefully deal with languages form at least two different geographical locations. It would also prove beneficial to look further into the differences of acquisition between groups divided by test scores and length of time living in a country in which the target language is spoken natively. Once further research is performed, it would prove beneficial to second language education to attempt to test alternative methods of teaching to help bring learners' second language production further away from a product of their L1 transfer, and closer to that of native speakers.

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