

L2 Acquisition of Chinese Locative Inversion

Jin Zhang
University of Arizona

Locative inversion is a non-canonical structure in Chinese and English. According to the Contrastive Analysis theory (Lado, 1957), a structure in L2 is easier to learn if it has the same meaning and distribution as an “equivalent” in L1. Previous studies suggest that English-speaking Chinese L2 learners would have no difficulty in acquiring the unmarked construction (Jin, 2008). The present study investigates how well CFL (Chinese as a foreign language) learners acquire locative inversion in Chinese and whether or not the positive L1 transfer occurs. The data comes from high-intermediate and advanced CFL learners. It consists of two parts - guided picture description and grammaticality judgments. Results from the two tasks show that the CFL learners did not have a good handle of locative inversion despite the existence of a similar construction in their L1. The CFL learners’ L1 did not help in their acquisition of Chinese locative inversion.

1. Introduction

Locative inversion is a non-canonical structure in Chinese. It is also found in a number of languages, including English. Much research has examined the construction from syntactic and morphological perspectives in Chinese (Pan 1996, Du 1999, Lin 2008, Zhang 2008), but very few studies have investigated the acquisition of the construction both in first language (L1) and in second language (L2).

According to the Contrastive Analysis theory (Lado, 1957), when a L1 structure and a L2 structure have the same form, meaning and distribution, positive transfer would occur in L2 acquisition. The L2 structures that already exist in learners’ L1 with the similar syntactic and semantic properties would not cause learning difficulty.

The similarities shared by Chinese and English locative inversion are frequently mentioned in literature (Levin & Rappoport Havov 1995, Du 1999) as they both follow the syntactic structure of “Locative + V + NP” and are very descriptive (Birner & Ward: 243-244, Lu: 462). Jin (2008) conducted a study on the English-speaking CFL learners’ acquisition of Chinese word order in relation to markedness theories. Locative inversion was listed among the four types of sentences surveyed. Jin (2008) argues Chinese locative inversion is not supposed to cause learning difficulty for English-speaking L2 learners, because the uses of locative inversion are very similar in both Chinese and English in terms of applied conditions and distribution in existential verbs, verbs of

motion, and verbs of positions. The results of the study indicate that the subjects surveyed had less difficulty in learning locative inversion compared with the other two more marked types of Chinese sentence structures. However, as it is not a focused study on locative inversion, the study cannot show us the real picture of L2 acquisition of the structure by comparing to the L2 acquisition of other marked structures in Chinese.

Looking at Chinese locative inversion by itself, the current study investigates how well CFL(Chinese as a foreign language) learners acquire locative inversion in Chinese and whether or not the positive L1 transfer occurs. The results will be analyzed to show whether learners' L1 necessarily has a positive influence on their acquisition of the Chinese locative inversion construction and if tasks cause any difference to learners' performance. The main research questions are:

- 1) How well do the American CFL learners recognize and use Chinese locative inversion?
- 2) Do different tasks influence learners' performance on the construction?
- 3) Does English-speaking CFL learners' L1 has a positive influence on learners' acquisition of Chinese locative inversion?

2. Basic properties of locative inversion

Levin and Rappoport Havov (1995: 218-219) give the three properties of locative inversion: first, as a non-canonical structure (PP V NP), it appears to be “the result of switching the positions of the NP and the PP in the canonical ‘NP V PP’ word order, particularly since the ‘inverted’ and ‘non-inverted’ sentences are near paraphrases of each other” (Levin & Rappoport Havov 1995: 218); second, the construction is so named for the presence of PP, a locative or directional PP, in preverbal position; third, the verbs in locative inversion constructions usually are intransitive. The first two properties are true to the languages, Chinese and English, considered in this study, but the third property is questionable in Chinese which does allow transitive verbs to occur in locative inversion. Another distinct characteristic of Chinese locative inversion, as Du (1999) states, is that an aspect marker is usually obligatory in the construction.

Locative inversion in Chinese is considered by researchers as an existential sentence and generally falls into three types according to semantic references of the verbs (Lu 2006: 460). The three types suggested by Lu (2006: 460) are as follows. Examples are provided in comparison with English and their canonical alternatives.

2.1 Existential state / posture

The verb describes the posture, the manner of motion, or the existential state of the object, either unanimated or animated. It is present in both English and Chinese.

(1) Chinese:

- a. (在) 桌 上 擺 -著/了 一 本 書。(locative inversion)
 (Zai) *zhuo shang bai-zhe/-le yi ben shu*
 (On) table top lay-DUR/PFV a CL book

“On the table lies a book.”

b. 一 本 書 擺 在 桌 上。 (SVO)

Yi ben shu bai zai shuo shang.

A CL book lay on table top

“A book lies on the table.”

c. 一 本 書 在 桌 上 擺 - 著。

Yi ben shu zai zhuo shang bai-zhe

A CL book on table top lay-DUR

“A book lies on the table.”

English:

d. On the table lies a book. (locative inversion)

e. A book lies on the table. (SVO)

The examples above show that in Chinese the preposition *zai* is optional in locative inversion (as in (1) a) while is required by its two SVO alternatives (as in (1) b, c). Example (1) b uses a postverbal locative phrase to name the place where the object described ends up as a result of the action of the verb. Hence, it does not need an aspect marker. The displacement of the locative phrase in example (1) c mainly shifts the focus of the sentence from the location to the object described. The effect of the change of the word order highly resembles that found in English locative inversion and its SVO counterpart.

2.2 Motions

Verbs in this type of locative inversion describe the motions of the object, unanimated or animated. The object is usually new to the scene, so the verb describes the appearance of the object at a particular location.

(2) Chinese:

a. (從) 遠 處 來-了 一 輛 車。 (locative inversion)

(From) yuan chu lai-le yi liang che

(From) far place come-PFV a CL car

“From afar comes a car.”

b. 一 輛 車 從 遠 處 來-了。 (SVO)

Yi liang che cong yuan chu lai-le

A CL car from far place come-PFV

“A car comes from afar.”

English:

c. From afar comes a bus. (locative inversion)

d. A bus comes from afar. (SVO)

In English, this case of inversion (as in (2) a) is also optional as it can be expressed in an SVO order (as in (2) b). However, in Chinese, the preposition “*cong* (從)” is optional in locative inversion (as in (2) a) but is required by an SVO order (as in (2) b).

2.3 Disappearance

Verbs in this type of locative inversion describe the disappearance or removal of the unanimated / animated object.

(3) Chinese:

- a. (在) 他 家 死-了 一 條 狗。 (locative inversion)
(Zai)Ta jia si-le yi tiao gou
 (At)his home die-PFV a CL dog
 “A dog has died in his home.”
- b. 一 條 狗 死 在 他 家。 (SVO)
Yi tiao gou die in his home.
 “A dog has died in his home.”
- c. 樓 裡 搬走-了 幾 戶 人。 (locative inversion)
Lou li banzou-le ji hu ren
 Building inside move-PFV several CL people
 “A few families have moved out of the building.”
- d. 幾 戶 人 從 樓 裡 搬走-了。 (SVO)
Ji hu ren cong lou li banzou-le
 Several CL people from building inside move-PFV
 “A few families have moved out of the building.”

English:

- N/A (locative inversion)
 e. A few families have moved out of the building. (SVO)

It is hard to find an equivalent of this type of locative inversion in English as it involves issues of agentive locative subject (Lin, 2008) and transitivity and intransitivity of verbs (Pan, 1996; Du, 1999; Lin, 2008) that are particularly complicated in Chinese.

To have a better control over the variables, the current study only examines the first type of locative inversion suggested by Lu (2006, pp. 460) with a verb plus an aspectual marker *zhe*. The four types of verbs covered in this study include: existence (有 *you*), posture (坐 *zuo*, 站 *zhan*, 躺 *tang*, and 趴 *pa*), existential state (放 *fang*, 擺 *bai*, and 種 *zhong*), and manner of motion (飛 *fei*, and 跑 *pao*). Locatives are provided without a preposition as preposition is usually omitted by native Chinese speakers in locative inversion.

3. Methods

3.1 Participants

Eighteen native English speakers learning Chinese as a foreign language and six native Chinese speakers participated in the experiment. They were all undergraduate / graduate students at the University of Arizona. The English-speaking participants were chosen by the criteria that they had learned Chinese locative inversion before. The eighteen English-speaking participants consisted of three groups, second-year Chinese learners (low-intermediate proficiency level), third-year Chinese learners (intermediate proficiency level), and advanced Chinese learners (actively studying Chinese for more than 4 years), with six participants for each group. The six native Chinese speakers formed the control group to be compared with the English-speaking CFL learner groups. They came from different regions of China and spoke both Mandarin Chinese and their own dialects.

3.2 Materials

A survey comprising two written tasks was used for this study to assess CFL learners' knowledge of Chinese locative inversion. One task was a picture description task, and the other was a grammaticality judgment task. The task directions were given in English. The content was appropriate for the proficiency level of the CFL participants. English translations were provided for some words and phrases in case CFL learners forgot or did not know.

PICTURE DESCRIPTION TASK. The picture description task asked students to describe where the assigned objects were on the picture. The picture presents a scene with animated and unanimated objects on it. In order to get a more controlled and quantifiable result, the task assigned six objects to the participants to describe and provided a matched number of verbs, and locatives that are essential to the locative inversion construction. The task tested whether the learners had the intuition to use the locative inversion construction in a context where the construction is preferred.

GRAMMATICALITY JUDGMENT TASK. The grammaticality judgment task consisted of 42 sentence items with 28 fillers and 14 sentences either correctly or incorrectly using locative inversion. The students were asked to judge the correctness of the sentences as perfect, okay, no intuition, awkward, and horrible. A numerical scale ranged from two to negative two was assigned to the five options to differentiate the degrees of the participants' acceptance of the sentences (2 for perfect, 1 for okay, 0 for no intuition, -1 for awkward, and -2 for horrible). Four types of verbs were used in the locative inversion sentences: existence, posture, existence of state, and motion. All these verbs were learned by the participants before and were commonly used in locative inversion. This task examined participants' recognition and understanding of Chinese locative inversion.

3.3 Procedures

An advertisement was sent to enroll learner participants in Chinese language classes. Those who were interested in participating contacted the investigator and scheduled a half-hour session for the week designated for the survey. The native Chinese participants were obtained through the investigator's personal network. The survey was conducted at the teaching assistant area of the Department of East Asian Studies at the University of Arizona. The investigator administered both tasks with each participant individually. The surveys were finished in two weeks.

3.4 Coding

The participants' responses were numerated for statistical analyses. As students were supposed to write six sentences in the picture description task, their responses were analyzed by the proportion of the number of locative inversion they used out of the six sentences. As for the grammaticality judgment task, to get continuous numbers, for each participant a value averaged over the locative inversion items by the 5-point numerical scale (2, 1, 0, -1, -2) represented the score the participant got. The locative inversion items were categorized into grammatical and ungrammatical sentences. That means the bigger the number value for the correct items, the better the participants understand the construction. On the contrary, the smaller the number value for the wrong items, the better the participants master the construction.

When comparing the two tasks, the participants' scores of the grammaticality judgment task were converted to 0-1 scale to keep them consistent with the scores of the picture description task. That is, the number values 2 and 1 for correct items and the number values -2 and -1 for wrong items were coded as 1, while the number values 1 and 2 for wrong items and the number values -1 and -2 for wrong items were coded as 0. A value averaged over the items was considered as the score the participant got.

4. Results and findings

To address the primary research question, "How well do the American CFL learners recognize and use Chinese locative inversion?" one-factor between-subjects analysis of variance (ANOVA) and a 4×2 mixed ANOVA were performed separately to investigate the CFL learners' overall performance on the picture description task and the grammaticality judgment task. A two-way ANOVA was conducted to explore whether the tasks had significant effect on the learners' performance and whether there were any significant interactions between the proficiency levels and tasks. When significant results were found, a series of one-way ANOVA were performed to further test the simple effects of tasks.

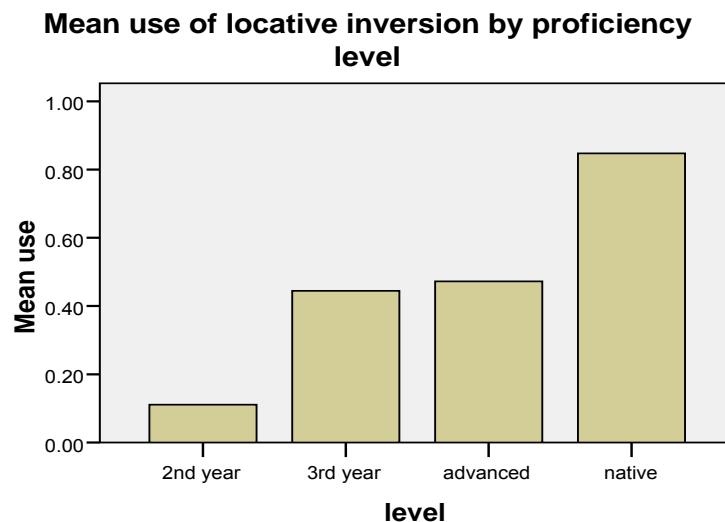
4.1 Overall results

The data on participants' responses to the two tasks was analyzed separately to see how well they use and recognize the locative inversion construction.

The data on locative inversion used in the picture description task was analyzed using a one-factor between-subjects ANOVA with proficiency level (second-year, third-year, advanced, native) as the factor. The subjects' performance was significantly different across different proficiency levels ($F(3, 20) = 18.98, p < .001$). Post hoc pairwise comparisons with Tukey correction were performed among the groups. Significant difference was found between each two groups (2nd year vs. 3rd year: $p < .02$; 2nd year vs. advanced: $p < .01$; 2nd year vs. native: $p < .001$; 3rd year vs. native: $p < .01$) except that between the third-year and the advanced groups ($p = .99$).

PICTURE DESCRIPTION. Figure 1 indicates the overall performance of the CFL learners on this task was poor, although distinct progress was found between the second-year learners and the other two learner groups. The higher the learners' proficiency level was, the more they used locative inversion. The second-year learners barely had the intuition to use locative inversion even with the contextual cues. The third-year learners used locative inversion considerably more than the second-year learners while the advanced learners only used the construction slightly more than the third-year Chinese learners. However, even the advanced learners used locative inversion only half as much as native Chinese speakers did.

Figure 1. Mean use of locative inversion by proficiency level



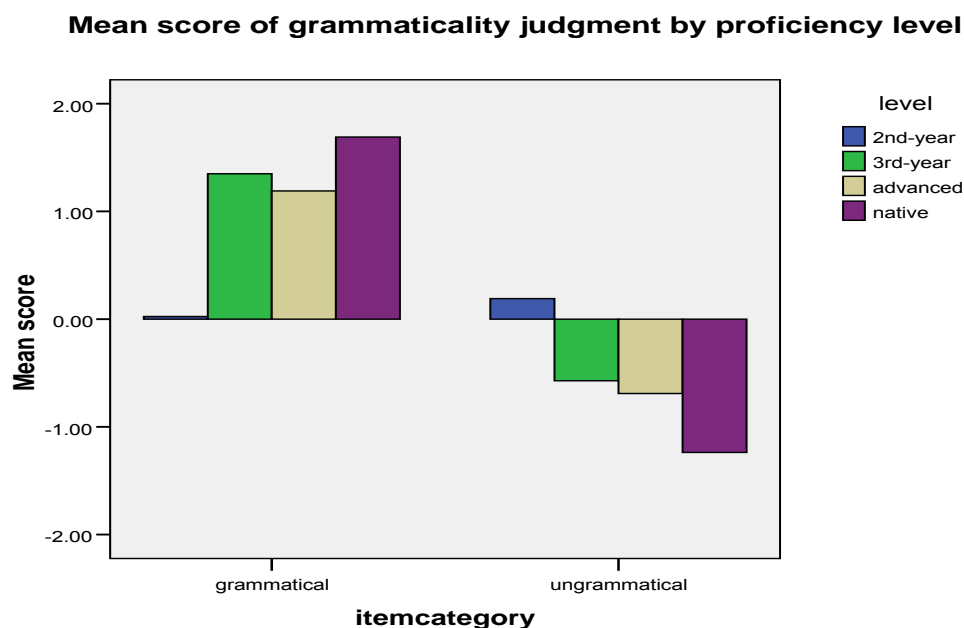
GRAMMATICALITY JUDGMENTS. The data on grammaticality judgments was analyzed using a two-factor mixed ANOVA, proficiency level (second-year, third-year, advanced, native) as a between-subjects factor and item category (grammatical, ungrammatical) as a within-subjects factor. Mauchly's test of sphericity showed there was no violation of the sphericity assumption. The main effect of item category and the

interaction of the proficiency level and item category were significant (itemcategory: $F(1, 20) = 47.22, p < .001$; item category \times proficiency level: $F(3, 20) = 7.40, p < .005$). However, there was no significant main effect of proficiency level ($F(1, 20) = .19, p = .91$). As the interaction of the proficiency level and item category were significant, simple effects of the two factors were tested separately.

Two separate one-way ANOVAs, one for grammatical items and the other for ungrammatical items, indicated that proficiency level had significant effect on grammatical items, $F(3, 20) = 3.36, p < .05$, but not on ungrammatical items, $F(3, 20) = 3.03, p = .53$. The results of post hoc comparisons with Tukey correction showed that the significant effect of proficiency level on grammatical items was caused by the huge gap between the second year CLF learner group and the native speaker group ($p < .03$) but not by any of the other two groups.

A one-factor within-subjects ANOVA, with item category (grammatical, ungrammatical) as the factor, was carried out to examine the simple effects of grammaticality on different proficiency levels. Significant difference between the two types of locative judgment items was found for the third-year CFL learner group ($F(1, 5) = 8.58, p < .05$), the advanced CFL learner group ($F(1,5) = 15.63, p < .02$), and the native speaker group ($F(1, 5) = 25.73, p < .001$), but not for the second-year CFL learner group ($F(1,5) = .19, p = .68$).

Figure 2. Mean score of locative inversion grammaticality judgment by proficiency level



The data reveals that the CFL learners were able to distinguish the grammatical locative inversion sentences from the ungrammatical ones except the second-year learners (see figure 2) who could hardly tell either the right use or the wrong use of the construction. Although proficiency level did not have a significant effect on learners' performance, there was a big leap from the second-year learners' performance to that of the advanced learners. Figure 2 presents that the higher the learners' proficiency level was, the better judgment they tended to have. The third-year learners and the advanced learners had a better judgment on grammatical items than on ungrammatical items. However, the advanced learners did not do significantly better than the third-year learners. In this study, the third-year learners even showed a slightly better performance on judging grammatical locative inversion sentences than the advanced learners (see figure 2), although the difference may be caused by one advanced learner who did particularly poorly on judging the grammatical items. The third-year and the advanced learners did not show a significant difference from the native Chinese speakers in the grammaticality judgment task. Each of the three CFL learner group basically exhibited a consistent performance on judging the two categories of sentences.

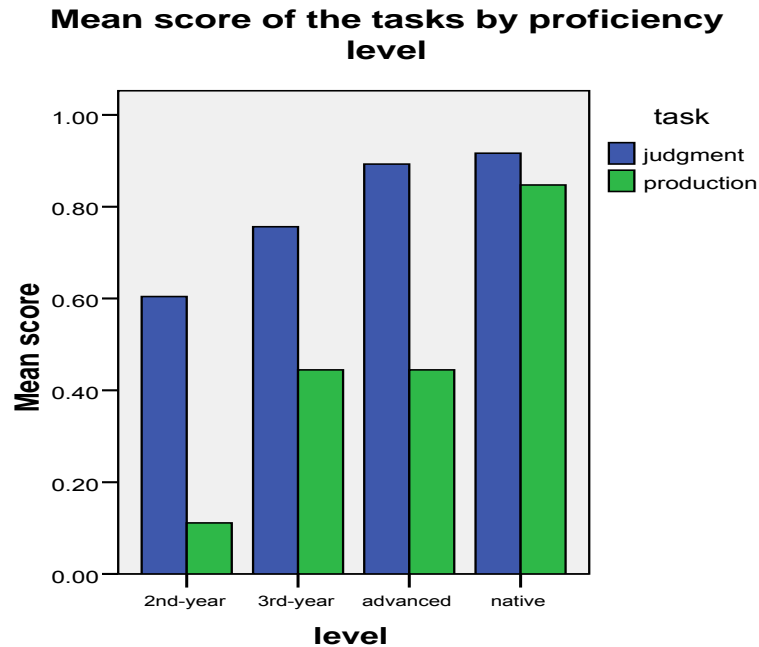
4.2 Task comparison

The data on learners' performance on the two tasks was analyzed using a two-factor mixed ANOVA, with proficiency level (second-year, third-year, advanced, native) and task (picture description, grammaticality judgments) as the two factors. Both the two main effects were significant (proficiency level: $F(1, 15) = 27.33$, $p < .001$; task: $F(1, 15) = 40.48$, $p < .001$), but there was no significant interaction of the two factors ($F(2, 15) = 1.60$, $p = .24$).

A one-factor within-subjects ANOVA was performed to test the simple effects of task at each proficiency level of the CFL learners. The results showed a significant effect of task on the second-year and advanced CFL learner groups (second-year: $F(1, 5) = 18.06$, $p < .01$; advanced: $F(1, 5) = 23.50$, $p < .006$). However, there was no significant difference for the third-year CFL learner group on the two tasks ($F(1, 5) = 5.83$, $p = .06$).

The data suggests that the Chinese learner participants generally did significantly better in the grammaticality judgment task than in the picture description task, while the native Chinese speakers indicated a consistent performance on the two different tasks (see figure 3). Advanced learners' performance on the judgment task was very close to that of the native Chinese speakers. This reveals that the CFL learners had much more trouble using the locative inversion construction than recognizing it, especially at the early stages of learning. The gap became smaller for learners who were more proficient in Chinese. However, while the more proficient learners always did better than the less proficient in the judgment task, the advanced learners did not show a noticeable progress in their ability to use the construction compared with the third-year learners. Compared with native Chinese speakers, the third-year and advanced learners hardly had the intuition to use locative inversion even in a context eliciting the use of the construction.

Figure 3. Mean score of the two tasks by level



5. Discussion

The results of the study essentially answered the research questions and offered some significant findings. First of all, despite the same construction in their L1, the CFL learners did not use locative inversion very well in Chinese. Learners' L1 did not help in CFL students' acquisition of Chinese locative inversion. On most occasions, learners would prefer to use SVO structure rather than the non-canonical locative inversion. This result is consistent with Erbaugh (1982) and Wen (2006)'s finding that Chinese child L1 learners and CFL learners both prefer SVO order in their acquisition of Chinese. In addition, learners' proficiency level played an important role in their using and understanding of the construction. Learners at a higher proficiency level did better on the two tasks than those at a lower level. However, no distinct differences have been found between the third-year learners and the advanced learners in their acquisition of the Chinese locative inversion construction. The findings indicate that the locative inversion construction is not as easy to acquire as it is assumed as an unmarked construction but requires certain amount of exposure to construction and the language as well. It is hard for the CFL learners to learn at the early stage of acquisition, as was demonstrated in their poor performance on judging both the grammatical and ungrammatical sentences of local inversion. Learners at a higher proficiency level showed a better judgment on the correctness of the use of locative inversion. Moreover, the CFL learners performed

significantly better on grammaticality judgment task than on the picture description task. Even the advanced learners still could not successfully use the construction in a context eliciting the use of it. This suggests that after reaching certain proficiency level, learners may have persistent problem which keeps them from doing better with the locative inversion construction.

Some factors may contribute to the learning difficulty. It is a rarely-used and an alternative construction for its canonical counterpart both in the learners' L1 and in Chinese. The use of the construction to a great extent is determined by discourse; although all languages share a similar way to produce "non-canonical" sentence structure, they differ in the realization of the construction. Also, Chinese locative inversion is not exclusive to intransitive verbs as in English. Transitive verbs can also be applied to the construction. The CFL learners may not be aware of the difference, which is indicated by the errors they made in the picture description task. The pragmatic, syntactic, and morphological differences could be the obstacles in the CFL learners' acquisition of the construction.

Besides the major findings mentioned above, the study also indicates that the verb types may influence the learners' acquisition of the construction or learners' acquisition of the construction may follow a certain sequence which is characterized by the verb types. The results of the picture description task show that learners had less difficulty in using locative inversion with the existential verb *you* which in most cases is bound to the construction and does not allow a canonical alternative. Therefore, learners seemed to be aware of the constraint set by *you* on locative inversion either in an explicit or an implicit way. Also, textbooks may influence learners' acquisition of the construction, too. The learners felt more comfortable with locative inversion wherever the verbs with which they were taught the construction were used, such as *bai* and *fang*. Although verb types were considered, it is not the focus of this study. A more detailed classification of verbs is needed in future study to investigate the acquisition pattern of locative inversion in terms of verb types.

6. Conclusion and implications

To conclude, my study provides evidence that Chinese locative inversion is not easy to acquire for English-speaking CFL learners. They showed a notable learning difficulty at the early stage of learning either in recognizing or using the construction. The CFL learners could hardly use locative inversion very well in Chinese even after reaching a high proficiency level. Although locative inversion has the same grammatical structure in English and Chinese, L1 did not help much in the English-speaking CFL learners' acquisition of Chinese locative inversion.

The results of the study also shed light on classroom instruction. First, instructors should draw students' attention to the similarities between Chinese and English locative inversion. They should also address and treat consistent errors made by students with locative inversion. Second, contextualized practice should be provided for students to get

them familiar with the discourse constraints set by locative inversion. Third, as mentioned previously, teachers should be aware of the acquisition pattern determined by verb types in their instruction.

REFERENCES

- Birner, Betty J. & Ward, Gregory. (1998). *Information Status and Noncanonical Word Order in English*. Amsterdam, Philadelphia: John Benjamins Publishing Company.
- Erbaugh, Mary S. (1982). *Coming to Order: Natural Selection and the Origin of Syntax in the Mandarin Speaking Child*. Berkley: University of California.
- Du, JulietWai-hong. 1999. Locative inversion and temporal aspect in Mandarin Chinese. *Chicago Linguistic Society Regional Meeting*, 35 (1), 339-353.
- Jin, Lingxia. 2008. Markedness and second language acquisition of word order in Mandarin Chinese. *Proceedings of the 20th North American Conference on Chinese Linguistics (NACCL-20)*, 1, 297-308.
- Lado, Robert. (1957). *Linguistics Across Cultures*. Ann Arbor, MI: University of Michigan Press.
- Levin, Beth & Rappaport Havov, Malka. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge, MA: MIT Press.
- Lin, T.-H. Jonah. 2008. Locative subject in Mandarin Chinese. *Nanzan Linguistics*, 4, 69-88.
- Lu, Qinghe. 2006. *實用對外漢語教學語法 Shiyong duiwai hanyu jiaoxue yufa*. Beijing: Peking University Press.
- Pan, Haihua. 1996. Imperfective aspect ZHE, agent deletion, and locative inversion in Mandarin Chinese. *Natural Language and Linguistic Theory*, 14, 409-432.
- Wen, Xiaohong. 2006. Acquisition sequence of three constructions: an analysis of the interlanguage of learners of Chinese as a foreign language. *Journal of the Chinese Language Teachers Association*, 41 (3), 89-113.
- Zhang, Lan. 2008. Locative inversion and aspect markers of *le* and *zhe* in Mandarin Chinese. *Proceedings of the 20th North American Conference on Chinese Linguistics (NACCL-20)*, 1, 893-902.