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The Acquisition of English Past Tense by Mandarin-Speaking Children in Their First Years Post Migration to Australia

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Abstract. This paper reports experimental findings on the acquisition of English past tense by Mandarin-speaking children in their first years post migration to Australia. In the field of Second Language Acquisition, one of the most widely researched topics is the development of tense morphology. In contrast to English, Mandarin Chinese is a language without tense morphology (Smith & Erbaugh 2005; Lin 2008). According to the Full Transfer Hypothesis, this linguistic property of lacking tense morphology should initially transfer to Mandarin-speaking children's acquisition of English (Schwartz & Sprouse 1994; 1996). To evaluate this prediction, the present study investigated Mandarin-speaking children's production of English past tense, using open questions and the elicited production task (Crain & Thornton 1998). The main findings were threefold. Firstly, the participants' overall marking rate of English past tense was very low; nevertheless, the male participants' marking rate was higher than that of the female ones. Secondly, the participants' overall marking rate of irregular verbs was higher than that of regular ones. Thirdly, a subset of the participants used verb phrases that are similar to Chinese resultative verb compounds to express English past tense, e.g., *finish eating*. The findings suggest that Mandarin-speaking children initially adopt their L1 grammar in the acquisition of English past tense. This is consistent with the Full Transfer Hypothesis.

Keywords: second language acquisition; English past tense; Mandarin-speaking children; cross-linguistic transfer

1. Introduction

1.1 English tense

According to Comrie (1986), tense refers to "grammaticalized location in time". Following Reichenbach's (1947), Comrie adopted the terminology -'S' (time of speech), 'E' (time of event) and 'R' (reference point). Unlike Reichenbach, he classified tenses into three absolute ones based on the ordering relations between S and E. The three absolute tenses are

'present', 'past' and 'future'. More specifically, present tense expresses a temporal relation, with S and E being simultaneous. Past tense denotes a temporal relation, with E being before S. Future tense expresses a temporal relation, with E being after S. The reference point R is only used to express absolute-relative tenses. In terms of morphology, tense refers to various inflections of verbs, depending on whether they express the present, the past, or the future, and on the temporal relations of one event to another. These verb inflections are the tenses. To illustrate, here are some examples of English tenses.

(1) Every day we *watch* television for an hour or two.

In sentence (1), the verb *watch* is used to express a simple present tense, denoting a routinely repeated action.

(2) John *painted* the fence just now.

In sentence (2), the verb *paint* with the suffix *-ed* is used to express past tense, indicating that the event of painting took place before the time of speech.

(3) I *will meet* John at the railway station next Monday.

In sentence (3), the auxiliary verb *will* and the verb *meet* are combined to denote future tense, indicating that the event of meeting will take place after the time of speech. This study focuses on Mandarin-speaking children's acquisition of English past tense. Therefore, the next section elaborates the cross-linguistic difference in the expression of past tense between Mandarin Chinese and English.

1.2 The cross-linguistic difference in the expression of past tense between Mandarin Chinese and English

In human languages, temporal information can be encoded with different devices, such as tense, aspect, temporal adverbials, and discourse principles etc. (Klein 1994). However, it varies across languages how temporal reference is expressed. To illustrate, let's consider the expression of past tense in English and Mandarin Chinese.

As discussed earlier, the semantics of English past tense is that it grammatically indicates that an event or a state took place at a point prior to the time of speech (Comrie 1986). For example, consider the English sentence in (4).

(4) John *lived* in Boston.

Sentence (4) is often taken to convey the message that John no longer lives in Boston. In other words, the state of living in Boston occurred at a point prior to the speech time. The simple past tense contains three different semantic meanings: the 'event past', the 'state past', and the 'habitual past'. The 'event past' refers to a single and specific action in the past, e.g., *I met John at the school library just now*. The 'state past' indicates that a verb's meaning is a statement of the past, e.g., *He was a little boy at that time*. The 'habitual past' refers to a repetition of an action in the past, e.g., *I used to go to school by bus*.

In English, past tense is generally formed by adding the inflectional morpheme *-ed* to a verb stem, as in *jump-jumped.* The inflectional morpheme *-ed* is the regular form of English past tense. There are also irregular forms that often involve a vowel change relative to a verb stem, e.g., *sing-sang, eat-ate,* and *blow-blew*. Sometimes, even consonants can change to denote past tense, e.g., *catch-caught, go-went,* and *seek-sought*.

In contrast to English, Mandarin Chinese is a language without tense morphology (Smith & Erbaugh 2002, Lin 2008). Mandarin verbs are not inflected to express temporal information. However, temporal information in Mandarin Chinese is encoded with temporal adverbials, aspectual markers, default aspects, and modal verbs etc. (Lin 2008). To illustrate, let's consider the following three ways of how past tense is encoded in Mandarin Chinese.

Firstly, past tense can be expressed by past temporal adverbials such as *yiqian* 'before', *zuotian* 'yesterday', *cengjing* 'once', *shangzhou* 'last week', etc. For instance, consider sentence (5).

(5) Ta cengjing zai beijing gongzuo.
He once in Beijing work
'He once worked in Beijing.'

In sentence (5), the verb *gongzuo* 'work' is not inflected to express any temporal information, but the temporal adverbial *cengjing* 'once' is used to indicate that the state of working occurred in a period of time prior to the speech time. Similarly, the temporal adverbials such as *xianzai* 'now' and *mingtian* 'tomorrow' can be respectively used to denote present tense and future tense. It is self-evident that temporal adverbials play an important role in the expression of temporal information in Mandarin Chinese.

Secondly, past tense can be encoded with perfective aspectual markers such as *le* and *guo.* For example, consider sentence (6) and (7).

(6) Ta kan-guo zheben shu
He read-PERF this-CL book
He read this book.

(7) Ta jiao-le hua
He water-PERF flower
He watered the flowers.

In sentence (6), there is no overt tense marking on the verb *kan* 'read', but the perfective aspectual marker *guo* indicates that the event of reading occurred at a point prior to the speech time. Similarly, the perfective aspectual marker *le* in (7) expresses the temporal information that the event of watering took place before the speech time.

Thirdly, past tense can also be expressed by the combination of a resultative verb compound and the perfective aspectual marker *le*. In Mandarin Chinese, a resultative verb compound contains two root verbs: V_1 and V_2. V_1 is usually an action verb indicating the cause, and V_2 is a stative verb or an action verb indicating a change of state or an action caused by V_1 (Li & Thompson 1981). When a resultative verb compound is followed by the perfective aspectual marker *le*, the telicity of verb phrases is expressed by such a combination. To illustrate, consider example (8).

(8) Zhangsan xiao wan-le qianbi.
Zhangsan sharpen finish-PERF pencil
Zhangsan sharpened his pencil.

In sentence (8), the resultative verb compound *xiaowan* 'sharpen-finish' is not inflected to express temporal information, but the combination of the resultative verb compound and the aspectual marker *le* conveys the information that the event of sharpening took place at a point prior to the speech time. In Mandarin Chinese, resultative verb compounds are frequently used to express telicity of verb phrases, e.g., *chiwan* 'eat-finish', *yongwan* 'use-finish' and *dasui* 'hit-broken' etc.

To recap, there is a cross-linguistic difference between English and Mandarin Chinese in the expression of past tense. More specifically, English past tense is mainly expressed by inflectional morphemes, whereas Mandarin Chinese employs temporal adverbials, aspectual markers, and resultative verb compounds etc. to denote past tense.

1.3 Cross-linguistic transfer

In the field of Second Language Acquisition, researchers have advanced many hypotheses on the nature of the initial state of L2 acquisition. One of them is called the Full Transfer Hypothesis, which proposes that the abstract properties of the L1 grammar in its entirety constitute the initial grammar of the L2 (Schwartz & Sprouse 1994, 1996). According to this hypothesis, Mandarin-speaking children are predicted to adopt their L1 grammar at the initial stage of acquiring L2, e.g., English. In addition, it has been proposed

that past tense is not an intrinsic feature of tense, but it is parameterised, with some languages adopting the positive value [+past] and other languages selecting the negative value [–past] (Hawkins & Liszka 2003). In contrast to English, Mandarin Chinese appears not to have selected the positive value of past tense [+past]. In the absence of this linguistic feature, Mandarin verbs are not inflected to express temporal information (Hawkins 2000). According to the Full Transfer Hypothesis, Mandarin-speaking children should initially adopt the negative value of past tense [–past] in the acquisition of English. More specifically, Mandarin-speaking children are predicted to use bare verbs to express English past tense at the initial stage of acquiring English. For example, Mandarin-speaking children may initially produce the sentence *I go to school yesterday*. In addition, Mandarin-speaking children are predicted to use verb phrases that are similar to Chinese resultative verb compounds (e.g., *finish painting*) to express English past tense.

To assess these predictions, the present study investigated 20 Mandarin-speaking children's marking of English past tense in their first years post migration to Australia. Two experimental techniques were adopted, namely open questions and the elicited production task. The main findings were as follows. Most of the participants used bare verbs to express English past tense; nevertheless, the female participants' marking rate was higher than that of the male ones, suggesting a gender difference. In addition, the participants' overall marking rate of irregular verbs was higher than that of regular ones. Finally, a subset of the participants used verb phrases (e.g., *finish eating*) to indicate English past tense. The findings support the Full Transfer Hypothesis.

This concludes my introductory remarks. The remainder of the paper is structured as follows. The second section reviews the relevant literature. The third section reports the experimental studies. The fourth section discusses the implications of the findings and concludes the paper.

2. Young bilinguals' acquisition of English tense system

Prior research has found that bilingual children marked English past tense less correctly than the same-aged monolingual English-speaking children. For example, Nicoladis, Palmer, and Marentette (2007) compared the use of English past tense by both French-English bilingual children (4-6-year olds) and same aged monolingual English-speaking children. The main finding was that the bilingual children marked tense less accurately than their monolingual peers, suggesting a lag. In addition, previous studies have reported that bilingual children show signs of transfer in phonology (see e.g., Barlow, 2002; Brulard & Carr, 2003) and in syntax (see e.g., Döpke, 1998; Hulk & Muller, 2000). More specifically, it has been found that young bilingual children delete *-t/d* sound when the affixation *-ed i*s added to a verb with a consonant in final position except the nasals-*n* and *–η* in the early stage of

acquiring English. For example, bilingual children might utter a sentence like *I talk with John over a cup of coffee*, omitting the *-t* sound of the verb *talked*.

To summarize, previous findings suggest that bilingual children lag behind monolinguals in the acquisition of tense morphology. In addition, it has been found that bilingual children show signs of transfer in both phonology and syntax at the initial stage of L2 acquisition. However, less attention has been paid to the acquisition of English tense by Mandarin-speaking immigrant children. Against this background, the present study attempted to investigate the acquisition of English past tense by Mandarin-speaking children in their first years post migration to Australia. With the increasing number of Chinese families migrating to Australia, the present study is of great significance for the following three reasons. First, it helps us understand the nature of the initial stage of acquiring English past tense by Mandarin-speaking children. Secondly, the findings of the present study promise to provide pedagogical implications for teachers that teach English for Mandarin-speaking children. Thirdly, it promises to help Mandarin-speaking children improve their English proficiency and thus become more likely to be socially included by the Anglophone community in Australia (Yates 2011). The next section reports the experimental studies of the present study.

3. The present study

3.1 Participants

20 Mandarin-English children (10 boys and 10 girls) participated in the study. The participants were immigrant children that were recruited via telephone and email from the local communities of Sydney, Australia. They were born and grew up in China with Mandarin as their sole language before migration to Australia. In addition, the participants were attending public primary schools in Sydney when they were tested. At school, they were taught in English, but they spoke Mandarin at home. The participants were aged from 6;5 to 7;3, with a mean age of 6;6, and all of them had two years of English education in Australia.

3.2 Procedures

The participants were tested using open questions and the elicited production task. All of the participants were tested individually in a quiet room at the Children and Family Research Centre, Macquarie University, Sydney, Australia. The main test session included two phases and it lasted about 20 minutes. In the first phase, the child participants were interviewed with open questions, which were designed to elicit English past tense. The open questions were illustrated as in (9) and (10). The interview was recorded for data analysis.

(9) What did you do yesterday?

(10) Could you please say something about your last semester?

In the second phase, the participants were presented with an elicited production task. In this task, the child was first shown a picture such as the one in Fig. 1.

Fig. 1

Fig. 2

Then, the experimenter described the picture using one sentence, e.g., *The boy is painting the fence.* After that, the child was presented with another picture, such as the one in Fig. 2. At that point, the experimenter first described the second picture and then raised a question, e.g., *Now he is done with it. Tell me what the boy did just now*. The child was expected to answer the question using past tense, e.g., *He painted the fence*. In total, there were ten sets of pictures. Five were used to elicit regular forms of English past tense (e.g., *open-opened*), and the other five were used to elicit irregular forms (*eat-ate*). To avoid any cues for marking regular and irregular forms, the presentation of the pictures for eliciting regular verbs and irregular ones was in a randomised order. The participants' responses were also recorded for data analysis.

3.3 Transcription and coding

All of the participants' responses were transcribed, and the number of the verbs that appeared in the transcription was counted. Since the two experimental tasks were designed to elicit participants' production of English past tense, it was assumed that the verbs that were used in the participants' responses were meant to express English past tense. In addition, all of the verbs that had the inflectional morpheme *-ed* were coded as regular forms and all other verbs as irregular ones. Finally, the participants' marking rate of English past tense was calculated.

3.4 Results

The participants' overall marking rate of English past tense was quite low. However, the marking rate of the irregular verbs was much higher than that of the regular ones. A summary of the participants' marking rate is provided in Table 1.

Table 1 The participants' marking rate of English past tense

Percentage / Verb Type	Percentage of Past-Marked	Percentage of Not Past-Marked
Regular	5%	95%
Irregular	17%	83%

As Table 1 indicates, the participants' marking rate of English past tense was very low, with 5% for the regular verbs and 17% for the irregular ones. Interestingly, the participants' marking rate for the irregular verbs was 12% higher than that of the regular ones.

In addition, there was a gender difference in terms of the marking rate. The difference is illustrated in Table 2.

Table 2 The marking rate of both the male and female participants

Percentage / Gender	Percentage of Past-Tense Marking
Female Group	21%
Male Group	6%

As Table 2 indicates, the female participants' marking rate was 15% higher than that of the male ones, suggesting a gender difference. Specifically, the male participants appeared to lag behind their female peers in the acquisition of English past tense.

Due to the high rate of the non-past marked, the data were analysed in terms of the error types. Actually, there were various types of errors in the participants' responses, but this paper only reports the following two salient ones. Firstly, as anticipated, the participants used bare verbs to denote English past tense. For example, they produced sentences like *The boy sharpen the pencil just now* and *The girl eat the apple just now*. The findings suggest a negative transfer from Mandarin Chinese, in which verbs are not inflected to indicate temporal information. Secondly, 5 out of the 20 participants used verb phrases (e.g., *finish painting*) to denote English past tense in the elicited production task. For example, one of the participants provided an answer to the experimenter, 'The boy finish sharpening his pencil.' This finding is also compelling evidence that the Mandarin grammar constitutes the initial state of Mandarin-speaking children's acquisition of English. As discussed earlier, resultative verb compounds in Mandarin Chinese, such as *xiaowan* 'sharpen finish', are used to express

telicity of verb phrases. The child participants adopted this linguistic property of Mandarin Chinese to express past tense in English. In sum, the findings indicate that the participants showed signs of transferring the grammatical features of L1 to the acquisition of L2 at the initial stage.

4. Discussion and conclusion

The present study investigated Mandarin-speaking children's production of English past tense in their first years post migration to Australia. According to the Full Transfer Hypothesis, the grammatical feature of lacking tense morphology in Mandarin Chinese should initially transfer to Mandarin-speaking children's acquisition of English. To evaluate this prediction, the present study investigated 20 Mandarin-speaking children's production of English past tense, using open questions and the elicited production task. At the completion of the experiment, all the participants' responses were transcribed and the number of the verbs was counted. In addition, the data were analysed in terms of the error types and the marking rate of English past tense was calculated.

The main findings were threefold. First, the participants' overall marking rate of English past tense was very low, with 5% for the regular verbs and 17% for irregular ones. Most of the participants used bare verbs to express English past tense. The findings suggest that the participants initially adopted the Mandarin grammar at the initial stage of acquiring English. Secondly, a subset of the participants used verb phrases that are similar to Chinese resultative verb compounds to indicate English past tense, e.g., *finish eating*. As discussed earlier, Mandarin verbs are not inflected to encode temporal information. However, temporal information in Mandarin Chinese is expressed using temporal adverbials, aspectual markers and resultative verb compounds etc. In particular, resultative verb compounds in Mandarin Chinese are typically used to express telicity of verb phrases. In other words, they can be used to encode temporal information, indicating that an event occurred prior to the speech time. Presumably, Mandarin-speaking children initially adopt the negative value of past tense [−past] in their acquisition of English. Gradually, they reset the parameter and switch to the positive value of past tense [+past]. This explains the observation that the participants initially used bare verbs as well as verb phrases (e.g., *finish eating*) to denote English past tense. Thirdly, the participants' marking rate for irregular forms of English past tense was much higher than that of regular ones. This finding is consistent with the Principle of Saliency (Wolfram & Hatfield, 1986), which has proposed that the more phonetically distant a tensed form is from its stem; the more likely it is marked for tense. To illustrate, consider the verbs *go* and *open.* According to the principle of saliency, the verb *go is* more likely to be marked for past tense than the verb *open*. This is because compared with *open-opened,* the irregular form *went* is more phonologically distant from its stem *go.*

Finally, it should be noted that the marking rate of English past tense is influenced by a series of factors, including age of acquisition, length of exposure, and gender. The present study didn't observe any significance difference that was related to age of acquisition since there were no big age differences among the participants. In addition, all of the participants had two years of English education in Australia and their sole language was Mandarin Chinese before they migrated to Australia. Therefore, the present study also didn't observe any significance difference that was related to length of exposure. However, there was a significant difference between the two gender groups, with the female participants' marking rate being 15% higher than that of the male ones. This finding suggests that the male participants lag behind the female ones in the acquisition of English past tense.

In conclusion, the findings are consistent with the Full Transfer Hypothesis. Mandarin-speaking children initially adopt the grammatical features of their mother tongue in the acquisition of English past tense. In addition, there is a gender difference in the acquisition of English past tense, with boys lagging behind girls.

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