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從台灣幼兒中英口語故事看構詞與句法能力

Morphological and Syntactic Abilities in Taiwanese EFL Children's Oral Narratives

研究生：江盈潔
Graduate: Ying-Chieh Chiang
指導教授：林律君博士
Advisor: Dr. Lu-Chun Lin

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中文摘要

有鑑於外語學習在台灣的日漸普及，兒童語言習得（children's language acquisition）在過去數十年間比以往更受重視。為了解兒童語言習得，學者廣為研究其構詞與句法發展(morphological and syntactic development)。因著，構詞與句法處理為兒童語言習得中兩項基本要素，孩童的構詞與句法能力將能透過其口語敘事的樣本予以分析。

因此，許多專家研究孩童說故事活動中的構詞與句法能力。許多探討孩童在敘事情境下之構詞與句法發展的研究主要針對正常發展(typically-developing)和異常發展(atypically-developing)孩童以及低成就孩童(children with low school achievement)。有些研究討論孩童的英語與母語習得，而在這些研究當中，大部分所分析的語言，在音節類型和音韻成分本質上十分不同，但同是使用拉丁字母且共有許多同源詞(cognates)，例如，英文與西班牙文。然而，卻較少研究針對英文和非印歐語(例如，中文)的習得。除此之外，鮮少研究專文探討在敘事情境下，以中文為母語，英文為外語之兒童的構詞與句法能力及跨語言影響(cross-linguistic influences)。

因此，本研究為了解以英文為外語之台灣兒童的構詞與句法能力及跨語言影響，致力於分析以看故事書敘述故事的方式所得到的口語述說語言樣本。本研究首要探討在敘事情境下，以中文為母語，英文為外語之兒童的中英文構詞與句法能力。再者，本研究亦探究在中英文口語述說樣本中可能存在的跨語言影響。此外，孩童口語述說能力的分析(productivity)可決定中英文對於孩童的口語述說能力是否有影響。

研究結果顯示，在口語述說能力的分析方面，以英文為外語之台灣兒童的中

文語言樣本中有較多的總共句數(number of modified C-units)、總詞彙數(number of total words)和相異詞彙數(number of different words)，而英文語言樣本中則有較長的平均語句長度(mean length of modified C-unit in words)。在構詞錯誤(morphological errors)分析方面，較多孩童在英文語言樣本中出現較多構詞錯誤，相對而言，較少孩童在中文語言樣本中出現構詞錯誤。在句法結構(syntactic structures)的使用方面，較多孩童在中文語言樣本中使用多種類型的中文語法句型；反之，較少孩童在英文語言樣本中使用不同的英文語法句型。除此之外，和構詞與句法相關的跨語言影響方面，研究發現較多中文影響英文的結構；因此，孩童的中文口語述說能力相對於英文口語述說能力較好。最後，希望本研究的發現，能帶給早期兒童語言習得學者和教師們更多的應用與未來研究上的參考與建議。

ABSTRACT

Children's language acquisition has attracted more attention than it was before because of the widespread of second language learning and the increasing number of young learners over the last decades. In order to understand children's language acquisition, their morphological and syntactic abilities has been widely investigated. Morphological and syntactic processing are the two basic processes involved in acquiring language skills for young learners. Children's morphological and syntactic knowledge can be examined in their oral narratives.

As a result, many researchers have investigated children's morphological and syntactic abilities in the storytelling task. A large number of studies on children's acquisition of morphology and syntax in a narrative context have focused on typically-developing children and atypically-developing children (e.g., children with specific language impairment) as well as children with low school achievement. Some studies have reported children's acquisition of English and their first language. Most of the ESL studies with children have examined languages that differ substantially in types of syllables and phonemic components used, but that are similar in sharing the Latin alphabets and a large number of cognates such as the English-Spanish pairing. However, little research has studied pairings of English with non-Indo-European languages such as Chinese. Moreover, relatively few studies have specially documented Chinese-speaking ESL children's morphological and syntactic abilities as well as cross-linguistic influences in a narrative context.

This study, therefore, aimed at examining Taiwanese EFL children's morphological and syntactic abilities as well as possible cross-linguistic influences observed in their Mandarin and English narratives elicited by a wordless picture book, *Frog, where are you?* (Mayer, 1969). The main purpose of the present study was to

investigate Taiwanese EFL preschoolers' morphological and syntactic abilities in their Mandarin and English stories. A subsidiary purpose was to examine the existence of possible cross-linguistic influences on their storytelling task. The children's language productivity was also measured to determine whether there were significant language effects on the children's language productivity in their stories.

The findings showed that, for language productivity measures, the Taiwanese EFL children produced higher number of modified C-units, number of total words, and number of different words but shorter mean length of modified C-unit in words in their Mandarin narratives than in English ones. Despite the fact that the children told stories of equal length in both the Mandarin and English narrative tasks, there were differences between the Mandarin and English stories in the children's language productivity measures. For morphological errors, more children had more variety of English erroneous uses while relatively fewer children made Mandarin morphological errors. When it comes to measures of syntactic structures, the children used more variety of the pre-specified Mandarin syntactic structures than English ones. In addition, more cross-linguistic structures with influences at morphological and syntactic levels from Mandarin to English were identified. As a result, the children appeared to perform better in their Mandarin stories than in English ones. Finally, the findings from this work can provide early childhood professionals or educators with implications and suggestions for future research.

ACKNOWLEDGEMENTS

“Everyone, please pay attention to the sentences on the blackboard. These sentences were made by some of you. There are some typical errors in these sentences. Is Chiang Ying Chieh here? If yes, please raise your hand.” This is what I heard from my wring teacher after I handed in my writing assignment for the first time in a private language school. Of course, I didn’t raise my hands but at that moment, I felt extremely embarrassed. I wished there was a hole next to me so I could jump into it. I was desperate and didn’t want to write anything in English more. However, now, I have finished my master’s thesis “in English.” It’s hard for me to describe my joyfulness in words. Nevertheless, I would like to show my sincere appreciation for those who supported me during my graduate studies and provided me with assistance in my master’s thesis.

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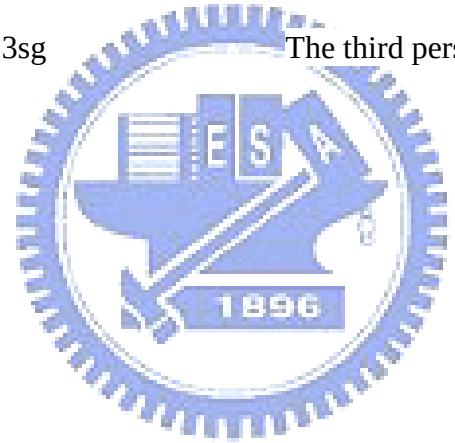
LIST OF ABBREVIATIONS

CL	Classifier
CRS	Currently relevant state
DUR	Durative
EXP	Experiential
FW	Friendly warning
GEN	Genitive
PFV	Perfective
Q	Question particle
REX	Response to expectation
3sg	The third person singular



CHAPTER ONE

INTRODUCTION

In recent years, the review of research evidence in children language acquisition has documented the importance of morphological and syntactic knowledge (e.g., Baayen, Feldman, & Schreuder, 2006; Franklin, Lindsey, & Bailey, 2004; Fukuda & Fukuda, 2001; Gutierrez-Clellen, 1998; Gutierrez-Clellen & Hofstetter, 1994; Lee & Naigles, 2008; Pe´rez-Leroux, Pirvulescu, & Roberge, 2008; Reilly, Losh, Bellugi, & Wulfeck, 2004; Thothathiri & Snedeker, 2008; Treiman & Cassar, 1996). Morphological and syntactic processing are the two basic processes involved in acquiring language skills for young children. Children's morphological and syntactic knowledge can be assessed to understand their language acquisition. One challenge for achieving this understanding is that a large number of studies have measured children's morphological and syntactic knowledge on standardized language assessments (e.g., Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Yamashita, 2008), but these measures may have limited validity and may not elicit children's spontaneous speech, known as speech which is indeed produced spontaneously (Prins & Bastiaanse, 2004), or semi-spontaneous speech, as defined by Prins and Bastiaanse (2004), namely that which is elicited by situational pictures (e.g., *Frog, where are you?*).

Without the implementation of an effective method to elicit children's spontaneous or semi-spontaneous speech, their morphological and syntactic knowledge required to produce speech may either be underestimated or overestimated. Therefore, the selection of a suitable method capable of measuring children's morphological and syntactic knowledge in their spontaneous or semi-spontaneous

speech is important. Oral narratives can provide an excellent quasi-naturalistic measure of children's spontaneous languages, and reflect distinctive structural and linguistic changes (Reilly et al., 2004). Thus, children's spontaneous use of morphological and syntactic knowledge can be measured in their oral narratives.

Most studies on children's acquisition of morphology and syntax in a narrative context have focused on typically-developing children (e.g., Fiestas & Pena, 2004; Gutierrez-Clellen, 2002; Gutierrez-Clellen & Hofstetter, 1994; Hell, Verhoeven, Tak, & Oosterhout, 2005; Miller et al., 2006; Pearson, 2002) and atypically-developing children (e.g., children with specific language impairment (SLI), early focal brain injury, Williams syndrome, or autism) (e.g., Reilly et al., 2004; Tsou & Cheung, 2007; Wulfeck, Bates, Krupa-Kwiatkowski, & Saltzman, 2004) as well as children with low school achievement (e.g., Chi, 2001; 2003; Gutierrez-Clellen, 1998). Hell et al. (2005) studied how Dutch children used pronouns and passive construction in narrative text. Gutierrez-Clellen (1998) compared the syntactic skills of Spanish-speaking children with low and average school achievement using oral narratives.

Some of the aforementioned studies have reported children's acquisition of English and their first language (e.g., Fiestas & Pena, 2004; Gutierrez-Clellen, 2002; Miller et al., 2006; Pearson, 2002; Serratrice, 2007). Serratrice (2007) investigated Italian EFL children's nominal expressions in the Frog Story. Gutierrez-Clellen (2002) examined Spanish ESL children's grammaticality in their oral narratives in two languages using wordless picture books. Miller et al. (2006) measured Spanish ESL children's lexical and syntactic structures in a narrative context. In Pearson's (2002) study, 80 Spanish- and English-speaking and 40 English-speaking children told stories. The children's use of selected verb forms, conjunctions, adverbs, and the specialized noun vocabulary were examined. Fiestas and Pena (2004) documented 12 ESL

children's language productivity, grammaticality, and non-target language influences in their narratives across English and Spanish. Most of the above-mentioned ESL studies have examined languages that differ substantially in types of syllables and phonemic components used, but that are similar in sharing the Latin alphabets and a large number of cognates such as English-Spanish and English-Czech pairings. However, little research has studied pairings of English with non-Indo-European languages such as Cantonese and Mandarin (e.g., Wang, Cheng, & Chen, 2006). Wang et al. (2006) investigated the contribution of morphological awareness in Chinese-English biliteracy acquisition. The findings indicated a cross-language morphological transfer in acquisition of a pairing of an alphabetic language with a non-Indo-European language (e.g., alphabetic and logographic). Moreover, relatively few studies have specially documented Chinese-speaking ESL children's morphological and syntactic abilities as well as cross-linguistic influences in a narrative context.

In a Chinese-speaking environment, a few available studies which examined children's morphological and syntactic knowledge are working from pathological perspective (e.g., Tsou & Cheung, 2007) or with low-achievement learners (e.g., Chi, 2001; 2003). For example, Tsou and Cheung (2007) investigated Taiwanese monolingual children' s performance on linguistic indices (e.g., length of story, mean length of utterance, and use of complex sentences) in a narrative context. Those were high-functioning children with autism. For the purpose of understanding poor Mandarin-speaking readers' language performance, Chi (2001; 2003) examined their linguistic knowledge (e.g., cohesion and syntactic skills) in their oral narratives. Nevertheless, the findings of these studies are difficult to be generalized to typical population. Although in Au's (2002) study, the expressive language abilities (e.g., the

use of syntactic structures and specific lexical items) of typically-developing Cantonese-speaking children were examined in a narrative task (re-telling the story with picture support), it focused primarily on Cantonese-speaking instead of Mandarin-speaking population. Differences may be observed between Cantonese- and Mandarin-speaking children's oral narratives.

Previous studies on children's oral narratives used different types of narrative tasks. Some of these studies asked children to tell stories from wordless picture books (e.g., Fiestas & Pena, 2004; Tsou & Cheung, 2007). Some requested children to retell stories from memory with an ad (e.g., a wordless book and pictures) after a researcher told stories first (e.g., Au, 2002; Miller et al., 2006). For example, Fiestas and Pena (2004) investigated the effect of language on Spanish-speaking ESL children's oral narratives in two languages in two ways– one elicited by using a wordless picture book and the other by using a static picture. Miller et al. (2006) measured Spanish-speaking ESL children's lexical and syntactic structures in a story-retelling task. Once the examiner narrated a prescribed narrative of the story, the children retold the story with the pictures in the wordless book. In the present study, Taiwanese EFL children's oral narratives in English and Mandarin were elicited by a wordless picture book, *Frog, where are you?* (Mayer, 1969).

Purposes of the Study

The main purpose of the present study was to investigate Taiwanese EFL preschoolers' morphological and syntactic abilities in their Mandarin and English stories. A subsidiary purpose was to examine the existence of possible cross-linguistic influences on their storytelling task.

Given the preceding research purposes, four major research questions in this

study were proposed as follows:

1. Do Mandarin-speaking EFL children have differential language productivity in their Mandarin and English narratives?
2. What types of Mandarin and English morphological errors do Mandarin-speaking EFL children make in their oral narratives?
3. What types of Mandarin and English syntactic structures do Mandarin-speaking EFL children use in their oral narratives?
4. Is there any possible cross-linguistic influence in Mandarin-speaking EFL children's oral narratives? If there is, what type is it?

It is hoped that answering theses questions could contribute to the understanding of the relation between children's use of their developing morphological and syntactic knowledge and their language abilities in their English and Mandarin. In addition, the findings of this study might enhance parents' understanding of children's early first and second language abilities. For early childhood professionals or educators, the findings might provide them with insights into their curriculum design. As for researchers, they could be encouraged to conduct more cross-linguistic studies in an EFL context.

CHAPTER TWO

LITERATURE REVIEW

Children's language acquisition has attracted more attention than it was before because of the widespread of second language learning and the increasing number of young learners over the last decades (e.g., Fiestas & Pena, 2004; Gutierrez-Clellen, 2002; Miller et al., 2006; Serratrice, 2007). In order to understand children's language acquisition, their morphological and syntactic development can be investigated. Morphological and syntactic processing are the two basic processes involved in acquiring language skills for young learners. Children's morphological and syntactic knowledge can be examined in their oral narratives.

As indicated in Chapter One, the present study intended to elicit Mandarin and English morphological and syntactic knowledge from Taiwanese EFL children in a narrative context. This chapter, therefore, gave a review of important studies in the research areas involved in this specific research topic. First, this chapter offered a general introduction to the significance of morphological and syntactic development and gradually narrowed the focus down to the children's morphological and syntactic development. Monolingual and ESL children's morphological and syntactic development were then discussed. Findings and results related to the present study were highlighted. Next section examined monolingual and ESL children's morphological and syntactic development in a narrative context. Typically-developing, atypically-developing and low-achievement children's uses of their morphological and syntactic knowledge in their oral narratives were introduced. The last section of the chapter discussed the measures frequently used to evaluate children's language abilities in their oral narratives. Concepts such as language productivity, linguistic

structures, and possible cross-linguistic influences were presented as well.

The Significance of Morphological and Syntactic Development

Children's morphological and syntactic development is of crucial importance for understanding their language acquisition. As children develop their language, their morphological and syntactic knowledge emerges. Morphological knowledge refers to the knowledge "of the internal structure of words and, of the rules by which words are formed" (Fromkin, Rodman, & Hyams, 2003, p. 76). Syntactic knowledge means the knowledge "of sentences and their structures" (Fromkin et al., 2003, p. 118). Children's ability to construct sentences from words reveals their use of morphosyntactic knowledge. In order to understand children's language development, their morphosyntactic knowledge can be evaluated. Wulfeck et al. (2004) in a pathological study mentioned, "We focus on morphosyntax because limitations in grammatical abilities are among the most common and persistent features in [children with] SLI" (p. 215). The morphosyntactic development of atypically-developing children such as children with SLI or with focal brain lesions is usually compared with that of typically-developing counterparts to provide evidence of their vulnerability of morphology and syntax.

Morphosyntactic knowledge also plays an important role in young learners' academic success (Pearson, 2002). Children who experience difficulty in dealing with language tasks that require the use of explicit, precise language in complex sentences and paragraph frequently exhibit academic difficulties (Gregg, 1991). Children's use of morphosyntactic knowledge may reveal important information about their facility to meet academic requirements. When children move up through the grades, their ability to tackle longer passages in all subject matters is crucial. To understand and

produce longer passages, children must be capable of using their knowledge of words and sentences. At early school age, children have acquired most of their knowledge of how to combine morphemes into words and words into sentences.

Finally, morphological and syntactic knowledge (which together comprise grammar) has been regarded as one of the reliable measures of second language proficiency (Komarova, Niyogi, & Nowak, 2001; Marinova-Todd, 2003). For instance, Johnson and Newport (1989) studied English proficiency attained by native speakers of Chinese or Korean learning English as a second language. A grammaticality-judgment test which measured different types of English grammar was used. The findings concluded that the first language did not have a measurable effect on the acquisition of a second language. Therefore, learners' morphosyntactic development can reveal their ESL development.

The Significance of Morphological Development

Morphological knowledge is important in interpreting meaning and assigning grammatical function to the smallest meaningful unit in a language. Goldin-Meadow, Mylander, and Franklin (2007) noted, "Although there is great variability in how much within-word structure a given language has, it is nevertheless difficult to find a language that has no structure at the word level" (p. 89). Due to the universality of morphological knowledge in languages, it has been widely examined to understand learners' language abilities.

Some studies have highlighted the importance of morphological development for children's language acquisition (e.g., Baayen et al., 2006; Franklin et al., 2004; Fukuda & Fukuda, 2001; Hoover & Gough, 1990; Jia & Fuse, 2007; Treiman & Cassar, 1996). For example, Treiman and Cassar (1996) indicated that morphological knowledge played a predictive role in child early spelling acquisition. In a Japanese

language acquisition study, Fukuda and Fukuda (2001) examined children's ability to construct implicit procedural rules for morphology. The results have proved that the deficit in morphology among the children with SLI affected their morphological processing in comparison with their typically-developing counterparts. Baayen et al. (2006) conducted a study on visual lexical decision and word naming experiments to gauge the importance of morphological measures as well as frequency in the lexical processing of morphologically simple words of young participants. The results showed that morphological measures emerged as strong predictors in visual lexical decision, while not in word naming task, providing evidence for the importance of morphological knowledge even for the recognition of morphologically simple words.

In another study (Franklin et al., 2004), a word identification task was used to examine Spanish-speaking English-learning children's development of English- and Spanish-reading skills. It has been concluded that morphological measures were identified as strong predictors in the children's lexical processing. Jia and Fuse (2007) conducted a 5-year longitudinal study to investigate the acquisition of six English grammatical morphemes by 10 Mandarin-speaking ESL children and adolescents. Their morphological proficiency was measured by the accuracy of these morphemes in obligatory contexts during spontaneous speech. The results showed that if the average percentage correct across all testing sections was counted, progressive –ing and regular past tense respectively elicited the highest and the lowest level of accuracy. Notably, this pattern was the same for both children and adolescents ESL learners. Morphological knowledge, therefore, has been frequently used to tap into individuals', especially young learners', language abilities.

The Significance of Syntactic Development

Syntactic knowledge, namely the knowledge of complex syntax, has been widely

used in evaluating children's language ability. As Marinellie (2004) noted, "complex syntax is necessary as children are increasingly required to describe, persuade report, predict outcomes, imagine, direct, and infer cause in daily classroom oral and written activities" (p. 518). To meet school requirements, children should be capable of using their complex syntax. In addition, complex language is important to children as meaning relationships in a language can never be adequately expressed in simple sentences (Scott, 1988). Children's capability of producing complex sentences is required for the purpose of expressing their ideas clearly and accurately. Studies with English-speaking children have showed that learners with academic language difficulties may have problems in producing complex sentences (Bradley-Johnson & Lesiak, 1989; Gregg, 1991). Children' production of complex syntax is highly pertinent to their academic language development. On the other hand, learners' proficiency in complex syntax can facilitate literacy development such as reading comprehension (Oakhill & Garnham, 1988; Yuill & Oakhill, 1991).

Several studies have confirmed the importance of complex syntax in children's language acquisition process (e.g., Gutierrez-Clellen, 1998; Gutierrez-Clellen & Hofstetter, 1994; Lee & Naigles, 2008; Pe´rez-Leroux et al., 2008; Thothathiri & Snedeker, 2008). Thothathiri and Snedeker (2008) reported that young children used abstract syntactic representations in an online sentence comprehension task. The results of an experimental work (Pe´rez-Leroux et al., 2008) supported the conclusion that French- and English-speaking children's lexical learning in the verbal domain was driven by syntax. Lee and Naigles (2008) have noted that Mandarin-speaking children used their syntactic knowledge in verb learning. Therefore, the measure of children's developing knowledge of syntax can reflect their current language development and predict their later academic performance.

Morphological and Syntactic Development

The process of acquiring the implicit and explicit knowledge of morphology and syntax is long and gradual. At an early age, children start to develop their implicit knowledge of morphology and syntax. For example, Berko's (1958) pioneering study using the "Wug Test" examined children's ability to give correct morphemes for novel nouns and verbs in an elicited production task. Results showed that the preschool and first-grade children succeeded in such a task. Hence, they possessed internalized knowledge about English morphological rules.

Around the age of 18 months, children start to string words together (Brown, 2000). This can be observed in their early two-word or three-word sentences (e.g., allgone milk). Children are capable of using their syntactic knowledge to form sentences at an early age. Researchers (Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002) supported that typically-developing children progressed through a predictable sequence of stages and became proficient in the basic syntactic relations of simple sentences at a relatively early age. Several studies (e.g., Brown, 1973; Fromkin et al., 2003; Reilly, Bates, & Marchman, 1998; Slobin, 1985) have noted that by age 5, most typically-developing children can generally access most of the morphosyntactic structures of their language. Their understanding of how and when to fluently and flexibly use these structures in specific discourse genres continues to develop well into adolescence (Reilly et al., 2004).

Chinese Morphological and Syntactic Development

Before elaborating on children's Chinese morphosyntactic development, this study should first clarify a critical question, that is, what is a Chinese word? Different schools of linguistics usually have distinctive definitions of a Chinese word. According to Li and Thompson (1981), a word is a unit typical of "syntactic and

semantic independence and integrity" (p. 13). Polysyllabic forms such as *pu2tao2* 'grape' and *bo1li2* 'glass' constitute single words despite the fact that they consist of two characters.

For children's Chinese morphological development, Tse, Tang, Shie, and Li (1991) reported Taiwanese monolingual children's developmental process of morphological acquisition. The following stages were adopted from their study. The children's first identifiable word production appeared at around the 11th month. At this stage, the children simply imitated adults' speech. These initial identifiable words involved nouns, appearing as the largest in number, verbs, and dexical terms including demonstratives, certain time adverbs, certain place adverbs, and deictic verbs. At the age of 11 to 16 months, they started to produce deictic expressions, particles, aspect markers, and adverbs. The emergence of their first particles included *a0* indicating "[the reduction of] forcefulness," (Li & Thompson, 1981, p. 238), *ou1* "friendly warning," (Li & Thompson, 1981, p. 238), and *ye1*, the expression of happiness. Later, they used *le0* expressing "currently relevant state," (Li & Thompson, 1981, p. 238), *ne1* "response to expectation," (Li & Thompson, 1981, p. 238), *ma1* "question," (Li & Thompson, 1981, p. 238), and *ba1*"solicit agreement" (Li & Thompson, 1981, p. 238). For the children's adverb development, Tse et al. also confirmed that manner adverbs "expressing speaker's attitude, manner of action, frequency, and qualification" (p.11) emerged earlier than adverb with presupposition.

One of the most distinctive features of Mandarin noun phrases is the use of classifiers from an English speaker's point of view. In the same study by Tse et al., at the age of 19 months, the children started to use the generic classifier *ge0* (e.g. *yi1ge0ren2* 'a person' and *san1ge0he2zi0* 'three boxes') and the classifier *ben3* (e.g. *yi1ben3shu1* 'a book') without a following noun. A noun phrase in the form of a

classifier phrase, consisting of a number and a classifier, plus a noun appeared at the 20th month. The generic classifier *ge0* was used whenever the children could not think of a specific classifier to use.

The children in the same study began to use their first modal auxiliary (e.g., *hui4* expressing "know how" or "will") at the age of 19 months. The children's first connectors emerged at the 19th month as well. Their earliest connectors functioned as turn holders to proclaim that they wanted to say something (e.g., *a1* expressing feelings and *en0* making a response). However, it was common to discover the children's use of two connectors at the same time. As for coverb acquisition, when they were 22 months old, coverbs (e.g., locative *zai4* and benefactive *gei3*) emerged. Coverbs, as defined by Li and Thompson (1981), are as follows:

… a class of morphemes in Mandarin which includes such words as *gen1* 'with', *cong2* 'from', … *zai4* 'at', used in locative constructions, *ba3*, the marker of the Ba construction , *bi3*, the comparative morpheme, *bei4*, the marker of the passive construction, and . . . *gei3*, the marker of benefactive and indirect object constructions . . . . The coverb introduces a noun phrase, and the phrase formed by the coverb plus the noun phrase generally precedes the main verb and follows the subject or topic. (p. 356)

For example:

wo3	yao3	gen1	ta1	shuo1hua4
I	want	with	3sg	talk-speech

I want to talk with him/ her.

我要跟他說話

Later, prior to the age of 25 months, the children in the same study tended to use nouns in the production where pronouns were more suitable.

In terms of Chinese syntactic acquisition, Tse et al. (1991) observed Taiwanese monolingual children's developmental process. The findings showed that the children's single-word and two-word sentences first emerged at the 11th and 13th month respectively but they were more like imitations of adult speech. Multiple-word sentences appeared as early as the 13th month but not until the 19th month did they occur more frequently.

According to Hsu (2003), Taiwanese monolingual children in his study expanded their utterances roughly from the age of 23 to 30 months. In particular, their verb phrases grew in length. A verb began to take a sentence as its object. This can be classified as belonging to one type of the serial verb construction. The serial verb construction is a structure consisting of two or more verb phrases or clauses juxtaposed without any marker signifying what the relationship is between them (Li & Thompson, 1981). In one type of the serial verb construction, a clause can be the direct object of the first verb. Therefore, it can be inferred that these Taiwanese children began to acquire the serial verb construction around this age.

Sentence linking construction in Chinese is defined as "sentences composed of two linked clauses . . . [and] each of the two constituent clauses contains a linking element . . . ." (Li & Thompson, 1981, p. 632). The meaning completion of each clause depends on the other clause. According to Li & Thompson (1981), this dependence can be established either by a specific linking element (e.g. a conjunction or an adverb) or by the speaker's intention. Children's development of sentence linking can be observed from their acquisition of compound sentences.

Compound sentences include all sentences connected with conjunctions. In Hsu's

(2003) study, during the 2 years from 2;4 (years;months) to 4;2, there were no conjunctions explicitly expressed in the surface structures of Taiwanese monolingual children's compound sentences. However, some conjunctions could be inferred from phonological cues. Later, from the age of 4;2 to 6;0 and beyond, conjunctions began to be used frequently but not always correctly.

As for the children's acquisition of the Ba-construction, Tse et al. (1991) documented that it occurred as early as the children were 1;9. Although the children produced Ba-sentences at an early stage, they still made mistakes as late as the age of 5;10. Their mistakes can be categorized into four types. First, the children used the verb inappropriately. Although they had acquired the meaning of the verb, they had not mastered the sense of disposal of it. The verbs used in the Ba construction should have a clear sense of disposal against the interests of the subject. Second, the children omitted the object when a direct object in Ba-construction must be placed directly after Ba and should never be deleted. Addition of a sentence as the object after the verb was the third type of mistakes. Finally, the children failed to produce Ba-sentences based on its formulaic word order. According to the above-mentioned mistake types, it can be referred that the Ba-construction is a relatively difficult syntactic structure for children to acquire so it can only be fully mastered at a fairly late age.

The Bei-construction is also difficult for children to acquire at an early age. In the same study by Tse et al. (1991), the Bei-construction emerged in the children's production when they were 2;5. The children continued to make mistakes as late as they were at the age of 5;10. These mistakes can be grouped into three types. First, the children produced Bei-sentences without implying a sense of adversity. The verbs used in the Bei construction should have a clear sense of adversity against the

interests of the subject. Second, an intransitive verb or a verb whose meaning was already passive was used in a Bei-passive. Finally, the agent noun phrase and the subsequent verb were omitted.

After the age of 5 years, in Hsu's (2003) study, the children did not really violate any major structural rules; their mistakes were mostly resulted from selection rules, especially in the choice of function words. Their misuse of word order was no longer a serious problem afterwards.

English Morphological and Syntactic Development

Morphological devices (e.g., pronouns, determiners, adverbs, and conjunctions) can help connect individual phrases smoothly (Pearson, 2002). At early school age, children have acquired most of their knowledge of how to combine morphemes into words and words into sentences. Fromkin et al. (2003) have noted that there are several stages of English-speaking children's morphological development. In children's acquisition of morphology, their morphological errors reveal that they have acquired the regular grammatical rules but overgeneralized them. In the acquisition of an irregular morphological form, children use the correct word such as 'brought' or 'broke' which are treated as separate lexical entries. That is, children do not relate the form 'brought' to 'bring' at this stage. Then, at the second stage, children construct a rule for forming a word and attach the regular morpheme to all words. Later, children learn that there are exceptions to the rule. English-speaking children's morphological rules emerge quite early.

There has been a great interest in English-speaking children's acquisition of morphology. In Brown's pioneering study (as cited in Cho & O'Grady, 1997) of three English-speaking children between the ages of 20 months and 36 months, their developmental sequence of bound morphemes and functional words (e.g., determiners

and auxiliaries) was observed. The developmental sequence was as follows: ‘-ing’, plural ‘-s’, possessive ‘-’s’, the and a, past tense ‘-ed’, third person singular ‘-s’, and auxiliary be. This development took place in an orderly sequence with relatively little variation from child to child. Therefore, children before the age of 3 years have used progressive, plural, possessive, determiners, past tense, third person singular, and auxiliaries in their production. Caselli et al. (1995) conducted a study to investigate the initial expressive and receptive lexical development of 659 English infants between 8 and 16 months of age using parental report data. The finding indicated that the children began with words which were difficult to be grouped into adult part-of-speech categories such as "routines" and later, a steady growth of common nouns followed. However, the emergence of verbs, adjectives, and grammatical function words (e.g., prepositions, pronouns, auxiliary verbs, conjunctions, and determiners) were relatively late until the children acquired at least 100 words. That is, among very young English-speaking children, lexical verbs did not emerge until the development of common nouns was well-established in their growing lexicon.

For children’s acquisition of modal auxiliary, Quigley (2000) reported that children’s modal auxiliary emerged gradually between the age of 1;0 and 2;6. Their initial use of verb auxiliary often included a single or negative modal form in limited contexts and with a limited set of meanings. Later on, it developed relatively rapidly. Kuczaj formed that the secondary modals such as "would" developed relatively late around the age of 5 years (as cited in Quigley, 2000). In general, by age 5, most modals were in use.

In the case of pronoun acquisition, Chiat reported that most 3-year-old children used the full range of pronouns spontaneously (as cited in Chiat, 1999). Deutsch and Pechmann (as cited in Chiat, 1999) commented that there were few instances of

incorrect pronoun uses. Pronoun errors mostly included a demonstrative pronoun alone or a demonstrative pronoun combined with a personal pronoun, a combination of two singular pronouns, or a name alone or combined with a personal pronoun in substitution for the target pronoun.

In children's acquisition of English syntax, Fromkin et al. (2003) have proposed the following developmental stages. Around the age of 2 years, English-speaking children began to put words together. These utterances seemed to be strings of two of children's earlier holophrastic utterances with each word having its own single-pitched contour. Soon, they started to form sentences with clear syntactic and semantic relations. In children's earliest multiword utterances, they were inconsistent in their use of grammatical morphemes such as function words. It took children several months to master their use of grammatical morphemes and auxiliary verbs consistently. By the age of 3 years, most children were consistent in their use of function morphemes and began to produce and understand complex sentences including coordinated sentences and embedded sentences of various types.

There are two types of embedded sentences (Przetacznik-Gierowska, 1995). One type of the embedded sentences can play the syntactic roles such as subject, object, or indirect object. A noun clause can be embedded as an object into a sentence (e.g., She knows that Venus is the goddess of love and beauty in Greek mythology). Therefore, children at the age of 3 years have gradually developed their knowledge of noun clauses. Children have also been aware of constituent structures and syntactic rules although they may often omit function morphemes in their correct use of word order, case marking and agreement rules. Roughly between the age of 2;6 and 3;6, children developed their language at a faster rate than they used to do. At this phase, it was difficult to identify different acquisition stages because children developed their

language rapidly.

As for the acquisition of relative clauses, the knowledge of relative clauses enables children to lengthen noun phrases. They can add relative clauses after noun phrases to make them longer. However, relative clauses are not common in children's speech. Ingram (as cited in Ingram, 1989) has argued that there was a lack of relative clauses in spontaneous speech of children between 2 and 5 years old. However, she has indicated that children have acquired relative clauses around age 4;0 but the productivity in their use, which was the characteristic of adult speech, has not appeared yet. Several studies (e.g., Corrêa, 1986; Limber, 1973; Menyuk, 1971, as cited in Corrêa, 1995) have confirmed that children's production of relative clauses began very early in childhood. However, these early production may not fully demonstrate knowledge assumed to be required in comprehension (Labelle, 1990; Menyuk, 1971; Tavakolian, 1981, as cited in Corrêa, 1995). Children show difficulty in comprehending relative clauses at an early age so they produce few relative clauses.

As to the acquisition of passive construction, the passive is frequently taken as an instance of linguistic complexity, relative to active sentences. Studies (e.g., Beilin, 1975; Olson & Nickerson, 1977, as cited in Elliot, 1981) have addressed that a young child's ability to correctly use the passive voice depends on aspects of the event described by the utterances, his/ her role inferred from the utterance and the linguistic context. Around age 4 years, children began to notice the syntactic differences between active and passive sentences (Dewart, 1975; Strohner & Nelson, 1974, as cited in Elliot, 1981). It was not until the age of 7 years that children understood the relation between active and passive constructions (Beilin, 1975, as cited in Elliot, 1981). In general, as informed by scholars (Chomsky, 1969; Slobin, 1973), children

by age 5 have used major syntactic structures of their languages as they continue to enlarge the range and complexity of their applications of these structures during school age.

Morphological and Syntactic Development in Bilingual Children

The predominant view regarding the way that children learn the structure of two languages supports that it is parallel to what is observed among monolingual children in each language. As Romaine (1995) noted, “the majority of studies seem to support the conclusion that the developmental sequence for the bilingual child is the same in many respects as for the monolingual” (p. 217). While learning two languages simultaneously, children understand the distinction between these two languages (Meisel, 1990; 1993). They also learn the structure of each language in much the same way that the corresponding monolinguals do.

In two early studies on the acquisition order of morphemes, Dulay and Burt (as cited in Ellis, 1994) investigated Spanish-speaking and Chinese-speaking ESL children at age 6 to 8 years. They reported that the acquisition order for a group of English morphemes remained the same irrespective of the learners’ native language or of the methods they used to measure the accuracy of the morphemes. Gathercole (as cited in Bialystok, 2001) investigated syntactic mastery of Spanish-English ESL and English and Spanish monolingual children at age 7 and 9 years. The results showed that the ESL children lagged behind their monolingual peers in acquiring the correct syntactic structures. Nonetheless, their progress was identical and the structures were learned in the same order and manner. Therefore, the language acquisition process of monolingual and ESL children is quite similar. ESL children may show delay in their acquisition of the second language or both languages.

Studying Morphological and Syntactic Development in Children's Narratives

Children may show their language-based aspects of academic readiness in their oral narrative production (Gutierrez-Clellen, 2002). To meet academic needs, children should be capable of using their language-based knowledge. While telling stories, children use their language-based knowledge (e.g., morphosyntactic knowledge) in their oral narratives. Morphosyntactic knowledge is essential for young learners to achieve their academic success (Pearson, 2002). Therefore, children's morphosyntactic knowledge can be measured to indicate whether they have academic difficulties in their oral narratives.

Narrative development even at preschool level can predict children's later literacy development (Griffin, Hemphill, Camp, & Wolf, 2004; Snow & Dickinson, 1990; Torrance & Olson, 1984). Preschoolers' narratives can be analyzed to predict their later literacy development. At the preschool age, children are in the process of developing their narrative skills. Children as young as 3 years old have acquired their basic narrative skills (Appleby, 1978). Later on, at age 10, children use richer lexica and more embedding sentences in their stories (Karmiloff-Smith, 1986). Narrative can be a rich context in which researchers examine children's use of syntactic structures to serve narrative functions (Reilly et al., 1998). In addition, researchers can measure children's syntactic knowledge in their narratives to indicate developmental differences (Gutierrez-Clellen & Hoffstetter, 1994). Therefore, children's narratives even at preschool level can provide researchers with insight into their morphosyntactic development.

Nevertheless, children's knowledge of language is often examined through standardized language proficiency tests which may have limited or no validity and consequently may not accurately reflect children's language proficiency

(Gutierrez-Clellen, 2002). There are three reasons to support that oral narration is better than traditional language proficiency test in measuring children's morphosyntactic knowledge. First, on the microstructural level, narrators can demonstrate their knowledge of cohesion and coherence through different types of connectives and adjusting tense, pronouns, and anaphoric reference (Hedberg & Westby, 1993). However, most language proficiency tests simply assess learners' morphological and syntactic knowledge separately. To put that differently, traditional language proficiency tests focus on the examination of children's sentence-level knowledge while narration highlights discourse-level knowledge such as pronoun use. Another reason is that there are many features of written discourse in the oral genre of narrative (Chafe, 1980; 1982). Therefore, oral narration can reveal children's writing development. As it is known, testing children's early language skills is difficult because their abilities are still developing until the middle elementary school level. Hence, to understand children's current language development, researchers can assess children's morphosyntactic knowledge in their oral narratives. Thirdly, some literacy educators have long acknowledged that human minds sequence experiences in the mode of story, whether real or virtual (Fox, 2003). Therefore, children can produce linguistic output similar to what exists inside their minds in their stories. To understand young learners' morphosyntactic development to a greater extent, children's narration is an appropriate practice.

Some studies have utilized oral narratives to examine the morphological and syntactic development of young monolingual learners (e.g., Bliss, McCabe, & Miranda, 1998; Gutierrez-Clellen, 1998; Gutierrez-Clellen & Hofstetter, 1994; Reilly et al., 2004; Tsou & Cheung, 2007) and young ESL learners (e.g., Fiestas & Pena, 2004; Miller et al., 2006; Pearson, 2002). In Tsou and Cheung's (2007) study,

Mandarin-speaking high-functioning children with autism and typically-developing counterparts told stories. Their narrative samples were analyzed to disclose their development of morphology and syntax. The findings showed that the high-functioning group performed comparatively well in complex sentences. In Pearson's (2002) study, 80 Spanish-English ESL children at second and fifth grades told stories from the wordless picture book, *Frog, where are you?* Children's use of selected verb forms, conjunctions, adverbs, and the specialized noun vocabulary were examined. The results indicated that ESL children's degree of elaboration and embedding in complex sentences was similar across languages, but knowledge of vocabulary items and general well-formedness of sentences were not similar.

Language Productivity, Linguistic Structures and Cross-Linguistic Influences

Measures of language productivity (e.g., average sentence length) can be used to determine whether there are significant language effects on the children's language productivity (Fiestas & Pena, 2004). Language productivity measures in the present study were calculated as the number of modified communication units (NMC), the mean length of modified communication unit in words (MLMCW), the number of total words (NTW), and the number of different words (NDW). Measures of linguistic structures can provide insight into children's grammatical production (Reilly et al., 2004). Morphological errors as well as syntactic structures used were assessed in the present study to indicate the children's language abilities. Finally, measures of possible cross-linguistic influences can improve the understanding of the processes and the outcomes of acquiring more than one language (Miller et al., 2006).

Language Productivity

When working with language samples, researchers have proposed different types

of language productivity measures to examine speakers' language abilities. The mean length of utterance (MLU) is frequently used to measure children's productive speech (Hsu, 2002). It reflects children's gradually increasing nature of utterance length and continuous revision of the rules applied to generate grammatical structures. As children's memory capacity and grammatical information increase, their MLU expands (Ellis, 1985). Previous studies (Brown, 1973; Klee, 1992; Miller & Chapman, 1981) with English-speaking population indicated that MLU strongly correlated with language proficiency of preschoolers.

The calculation of MLU in English is usually counting the number of morphemes and then it is divided by the total number of utterances. Nevertheless, the way that researchers adopt to calculate MLU in English may not be excellently applied to the calculation of MLU in Mandarin due to the fact that the morphological nature of English is different from that of Mandarin. Before elaborating on how to calculate MLU in Mandarin, the present study should clarify the difference among a character, a morpheme, and a word in Mandarin first. Li and Thompson (1981) provided an account of the relation among a character, a morpheme, and a word as follows. In Mandarin, each character is pronounced as a monosyllable and each word is composed of one or more characters. A word, as defined by Li and Thompson, is a unit typical of "syntactic and semantic independence and integrity" (p. 13). Most polysyllabic words in Mandarin consist of several morphemes but few of them consist of only one morpheme. Polysyllabic forms such as *you2qi1* 'paint', *pu2tao2* 'grape', and *bo1li2* 'glass' constitute single words despite the fact that they consist of two characters. However, *you2qi1* consists of two morphemes but *pu2tao2* and *bo1li2* consist of only one morpheme. If *pu2tao2* is separated as two morphemes, each character has no meaning. In short, the rules used to calculate how many morphemes

constitute a word in Mandarin are not as clear as that in English.

For the calculation of MLU in Mandarin, MLUW (MLU in words) seems more appropriate than MLUM (MLU in morphemes). There are two reasons to support that MLUW is more appropriate than MLUM in calculating Mandarin-speaking EFL children's MLU in both English and Mandarin. First, Liao (1994) investigated the validity of MLU as a developmental index of language production for young Mandarin-speaking children. She suggested that MLUW was better than MLUM and MLUC (MLU in characters) because it highly correlated with the other two measures and conformed to the concept of morpheme. Thus, MLUW is better in measuring the language productivity of Mandarin-speaking population. Secondly, there are considerable differences between the morphology of English and Mandarin. The rules applied to count how many morphemes constitute a word in Mandarin are not as clear as that in English. To provide an equivalent measure of language productivity in English and Mandarin, the number of words in each utterance is calculated instead of the number of morphemes. Therefore, MLUW should be adopted to measure Mandarin-speaking EFL children's language productivity in English and Mandarin.

Nevertheless, the application of MLU has its limitation. MLU is useful at early stages of language development but its validity for English-speaking children beyond 3;6 or MLU score greater than 4 has been questioned (Craig, Washington, & Thompson-Porter, 1998). MLU is also a valid predictor of Mandarin-speaking children's language development only when MLU score is below 4 or participants are preschool children (Cheung, 1998; Liao, 1994). Hence, the limitation of the application of MLU is that the measure may only be valid for learners below 3;6. For older children, MLU may not be a valid language index. Researchers should be more conservative in interpreting the MLU value when either older participants or greater

MLU score is involved.

In order to avoid the limitation of the MLU measure, an utterance can be defined by a communication unit (C-unit; Loban, 1976) which consists of an independent clause plus its modifier or one main clause and all of its subordinate clauses. Instead of using pause, intonation, or semantic segmentation criteria to segment language samples into utterances, C-unit segmentation rules follow structural criteria to segment language samples. Craig et al. (1998) proposed that with older children, an utterance defined by a C-unit is usually used for oral language analysis. Still, Loban (as cited in Miller et al., 2006) noted that "devising an objective method for segmenting the flow of oral language was a critical problem." It becomes relatively difficult when researchers attempt to apply the same segmentation rules across two languages. In Miller et al.'s (2006) study with Spanish-speaking ESL children, Loban's rationale for considering English utterances with compound predicates and the same subjects as one C-unit was modified because this rule was not applicable across languages, such as Spanish. Miller et al. treated coordinated utterances with co-referential subject deletion in the second clause as separate C-units. For example, the utterance "The frog saw the boy and (it) ran away" is composed of two C-units.

In the present study, Loban's C-unit rules for segmenting utterances were modified as well. According to Loban (1976), each C-unit consists of one main clause and all of its subordinate clauses. This rule is not applicable in Mandarin because different linguists have distinctive definition of what a coordinate, subordinate, or adverbial conjunction is. Some researchers such as Li and Thompson (1981) even applied the term "linking elements" instead of conjunctions to describe units used to connect clauses. Therefore, this rule was modified as follows: when two clauses are connected by the linking element, they are two modified C-units (e.g., The boy slept

and the frog went away.).

Loban's rationale for considering English utterances with coordinated predicates and co-referential subject deletion in the second clause should be modified as well. In light of the nature of pro-drop in Mandarin, pronouns may be omitted when they are semantically inferable from the linguistic context. Hence, Mandarin speakers frequently omit the co-referential subject in the second clause without a loss of meaning. The second modified C-unit rule is that when there is an utterance with linked clauses and a co-referential subject deletion in the second clause with a longer modifier, this utterance is composed of two modified C-units. For example, the utterance "A boy wakes up and sees no frog." is treated as two modified C-units; however, "A boy wakes up and cries." is considered consisting of one modified C-unit. The same modified C-unit rules were applied across both English and Mandarin in the present study to maintain consistency and comparability across both language measures. To make an equivalent comparison of older children's language productivity in Mandarin and English, the mean length of modified C-unit in words (MLMCW) was used to measure the Taiwanese EFL children's production in the present study. The following are two examples showing an utterance consisting of one modified C-unit in the first example and two modified C-units in the second example.

gou3	gan4dao4	Yi4	zhi1	Na4ge0	tuo1tao2
dog	see-arrive	one	CL	that	shed-flee

The dog saw one which ran away.

狗看到一隻那個脫逃

dang1	ta1	xiao3de0	shi2hou4,	mei2	ren2	zhao4gu4	ta1
when	3sg	small	time	not	person	care:for	3sg

When s/he was small, there was no one to take care of him/ her.

當他小的時候，沒人照顧他

Studies with English-speaking monolingual children (e.g., Zackheim & Conture, 2003), Chinese-speaking monolingual children (e.g., Au, 2002; Chi, 2001; Tsou & Cheung, 2007), and Spanish-speaking ESL children (e.g., Miller et al., 2006) have measured children's MLU to reflect their language productivity. Research with Chinese-speaking monolingual children (e.g., Au, 2002; Chi, 2001) and Spanish-speaking ESL children (e.g., Fiestas & Pena, 2004) has tallied children's average number of C-units to measure their story length. Some studies with Mandarin-speaking monolingual children (e.g., Chi, 2001; Lin, 2004) and Spanish-speaking ESL children (e.g., Fiestas & Pena, 2004) have calculated the number of total words (NTW) to reveal children's language development. Other research with Mandarin-speaking monolingual children (e.g., Lin, 2004) and Spanish-speaking ESL children (Miller et al., 2006) has measured the number of different words (NDW) to tap into children's vocabulary diversity. Language productivity measures in the present study were calculated for NMC, MLMCW, NTW, and NDW.

For example, in Zackheim and Conture's (2003) study, 12 English-speaking monolingual participants below the age of 6 years were recruited. The influence of utterance length and complexity pertinent to children's mean length of utterance was examined. The results showed that utterances with length greater than children's MLU were more vulnerable to disfluency. Tsou and Cheung (2007) used the wordless

picture book, *Frog, where are you?* (Mayer, 1969) as the elicitation tool to elicit children's production. They investigated the content and linguistic expression of 19 high-functioning Taiwanese monolingual children with autism and a matched group of 19 children with normal development. Their average age was 5;9. The children's MLUW, the total number of utterances, and NTW were measured. They formed that the high-functioning autistic group produced comparatively well on length of story and MLUW.

Chi's (2001) study examined the language productivity of 66 third-grade and sixth-grade Taiwanese monolingual poor readers and 65 peers of the same grade in a storytelling context. The children's MLUW, the total number of utterances, the total number of C-units, NTW, and NDW in Mandarin were measured. The results indicated that there was no significant difference in the MLUW between poor readers and their typically-developing peers. Nonetheless, the NTW of the poor readers was lower than that of their peers. In Au's (2002) study, 100 Cantonese-speaking typically-developing children between 5 and 9 years old retold a story in Cantonese. A 14-page wordless picture book was used to illustrate the story. She examined the children's mean length of C-unit in words (MLCW) and the average number of C-units. The results showed that MLCW had a positive correlation with age. Thus, MLCW can be used as a developmental index of language productivity for school-aged children.

Fiestas and Pena (2004) examined Spanish-English ESL children's language productivity in a storytelling context, using the wordless book, *Frog, where are you?* The children's MLCW, the total number of C-units, and NTW were calculated. Although the children were exposed to a second language after acquiring their first language at home, the finding indicated that the children's expectations about story

length and how much information to address in a specific narrative task in their two languages were interrelated. The above studies have measured monolingual Chinese- or English-speaking or Spanish-speaking ESL children's language productivity in their oral narratives. However, relatively little research has been done on Mandarin-speaking EFL children's language productivity in their oral narratives across English and Mandarin, not to mention the measure of their mean length of utterances defined by modified C-units in words.

Linguistic Structures

Measures of linguistic structures have been considered as developmental indices for children's language development. Measures of morphological errors and syntactic structures comprise measures of linguistic structures. Some studies (e.g., Chen, 2007; Chi, 2001; 2003; Fiestas & Pena, 2004; Reilly et al., 2004; Tsou & Cheung, 2007) have analyzed children's oral narratives to investigate their morphological errors and syntactic structures and to reveal their language abilities. Morphological errors involve all errors of commission or omission (Reilly et al., 2004). For example, one child made a morphological error in the sentence: "The dog looks in the jar." This is a commission of preposition error. The preposition "in" should be replaced by "into" because the dog looks into the jar to check if the frog is there. Syntactic structures refer to the various types of syntactic structures used. For instance, in the sentence with two linked clauses: "The boy is angry because the dog falls down," the independent clause is "The boy is angry" and the dependent clause is "because the dog falls down."

With the aim of obtaining insight into children's morphological knowledge, Chi (2001) examined morphological knowledge of 66 third-grade and sixth-grade Taiwanese monolingual poor readers and 65 peers of the same grade in a storytelling

context. The children's uses of classifiers and pronouns in Mandarin were measured. She concluded that there were more grammatically-incorrect uses of classifiers and pronouns in poor readers' narratives. Reilly et al. (2004) focused on comparing the morphological development in English-speaking monolingual children from two experimental groups (children with early unilateral focal brain damage (FL) and children with SLI) and typically-developing controls. The children were presented with a wordless picture book, *Frog, where are you?* and required to tell the story to the experimenter. The children's morphological errors in pronouns, verb auxiliaries, determiners, noun plurals, verb tense, number marking, and prepositions in their English oral narratives were examined. The results demonstrated that both FL and SLI groups made a greater proportion of morphological errors than the control group did. Although there were differences in the rate at which English morphology was mastered by each group, the researchers noted that for all populations, the kind of errors was similar, but the rate of acquisition was different.

As for ESL children's morphological development, Fiestas and Pena (2004) used the same wordless book to elicit Spanish-speaking ESL children's stories in Spanish and English. The children's morphological knowledge in both languages was examined through participants' use of pronouns, verb auxiliaries, determiners, verb tenses, number marking and prepositions as well as other uses in noun and verb phrases. The results showed that the children demonstrated comparable proportions of grammatical utterances in both languages while there was a slightly higher percentage of grammatically-correct utterances in their first language. Therefore, it may be inferred that their rate of morphological acquisition in each language was slightly different.

As for the syntactic structures used in narratives, Chen (2007) used a wordless

picture book, *Frog, where are you?* to elicit Mandarin narratives from 10 high-functioning children with autism spectrum disorder and 10 matched typically-developing children. The results indicated that there was no significant difference between the high-functioning autism spectrum group and the typically-developing group in syntax complexity (e.g., simple sentence, embedded sentences, and compound sentences). Tsou and Cheung (2007) elicited narrative samples from 19 Taiwanese high-functioning children with autism and 19 typically-developing children using the same wordless picture book. The children's uses of the serial verb construction and sentence linking in their Mandarin narratives were examined. The conclusion showed that the high-functioning group performed comparatively well in complex sentences.

In addition, Gutierrez-Clellen (1998) compared the syntactic skills of Spanish-speaking monolingual children with low and average school achievement from kindergarten to fifth grade. She used a wordless picture book and a film to elicit the children's oral narratives in Spanish in two retelling tasks. Syntactic structures such as relative clauses, noun clauses, and adverbial clauses were analyzed in the children's narratives. The finding indicated that the children with low school achievement exhibited limited use of syntactic structures and greater difficulty in formulating their narratives than their peers. Reilly et al. (2004) elicited 169 English narratives from both typically-developing children and children with FL and SLI using a wordless picture book, *Frog, where are you?* Syntactic structures including coordinate sentences, adverbial clauses, verb complements, relative clauses, and passive sentences were examined in the children's oral narratives. The results indicated that both FL and SLI groups produced fewer complex sentences and significantly fewer types of syntactic structures than the typically-developing group.

In Miller et al.'s (2006) Spanish-English ESL study, they also adopted Mayer's picture book to elicit stories from a large group of children from kindergarten to the third grade. The researchers examined the children's knowledge of syntax. They found that features of oral language such as syntactic skills predict passage comprehension within a language.

Some of the aforementioned studies used Mayer's wordless picture book, *Frog, where are you?* as an elicitation tool to elicit children's oral narratives. This book has created an appropriate story context for children to tell stories. The present study also used this book to elicit the children's oral narratives in Mandarin and English. In addition, results of these studies showed that there is a correlation between children's morphosyntactic knowledge and their language abilities regardless of their language status. In the literature, some ESL studies have been conducted in a storytelling context to disclose the relation between children's morphosyntactic knowledge and their language abilities. However, relatively few were undertaken with Mandarin-speaking EFL children.

Cross-Linguistic Influences

In the process of second language (L2) acquisition, both adult and child learners use their first language (L1) as a basis for understanding or producing the L2. The influence of L1 on L2 is often referred to as transfer from L1 and appears most evidently at the stage in which learners start to produce output productively but have limited L2 resources (Genesee, Paradis, & Crago, 2004). When the earlier knowledge is correctly applied to the current learning task, a positive transfer occurs. Conversely, when the previous linguistic repertoire interrupts a latter task, this presents a negative transfer or interference (Brown, 2000), or a transfer error (Genesee et al., 2004).

Three types of L1 influences can be observed in children's L2 acquisition

(Genesee et al., 2004). The first type is negative transfers including three kinds. First, L1 structures are directly transferred into L2. Children may apply their L1 syntactic rules to produce utterances in English. For example, one child made a syntactic transfer such as: “See inside have one this.” This English sentence, when translated word-for-word into Mandarin, is grammatical. The child transferred some Mandarin syntactic features into English such as the pro-drop phenomenon, the omission of a pronoun. Secondly, phonological transfer is often a major source of L1 transfer. Japanese speakers often have difficulty in pronouncing consonant clusters and word-final non-nasal consonants in English since in Japanese there are no consonant clusters and only a nasal consonant can appear word-finally. Hence, Japanese speakers learning English often insert vowels between the consonants to crumble the clusters or put vowels after word-final non-nasal consonants. For example, the word “English” may be pronounced as “engulisu” by Japanese EFL learners. Thirdly, when L1 and L2 have different word orders (e.g., SVO and SOV languages), this is also a common domain for transfer. For example, object pronouns in Spanish and French appear before the verbs whereas in English they come after the verbs. The sentence “I see it” in French is “je *le* vois” where the object pronoun is “le.” English speakers of French sometimes leave a French object pronoun after the verb so a negative syntactic transfer from their L1 occurs.

The second type is learners’ preference for a structure in the L2 which parallels that in their L1. For instance, in English one can say “the dog’s house” or “the house of the dog” whereas in Spanish or French only the latter construction exists such as “la casa del perro.” Spanish- and French-speaking learners of English have often been observed to prefer saying in English “the house of the dog” rather than “the dog’s house” which is nevertheless considered more natural to be articulated by most native

English speakers. The last type is the avoidance of a L2 structure. For example, English learners of French avoid using direct object pronouns so they may use the demonstrative pronoun in French which comes after the verb or use a lexical object. They may, instead of using "je *le* vois"/ 'I see it,' say "je vois *ça*"/ 'I see that' or "je vois *le chien*" / 'I see the dog.'

Evidence from several studies revealed that children learning two languages utilize language-specific linguistic devices to narrate in each of their languages but most devices are grammatical in each of their languages (Dart, 1992; Fiestas & Pena, 2004; Gutierrez-Clellen, 2002; Silliman et al., 2002). However, cross-linguistic influences have still been identified in various studies (e.g., Döpke, 1999; Fiestas & Pena, 2004; Miller et al., 2006; Müller, 1998; Wang et al., 2006; Westby, Moore, & Roman, 2002). Westby, Moore and Roman (2002) investigated cross-linguistic influences at syntactic level in children's narratives. They examined 18 English stories produced by Southwest Native American children from the third- to fifth-grade using a wordless picture book, *A Boy, a Dog, and a Frog* (Mayer, 1967). The result indicated that many stories contained features of Native American syntactic structures. Thus, syntactic transfers from L1 to L2 were observed. Müller (1998) conducted a study on the syntactic progress of children learning German as L1 and French, English or Italian as L2. She reported that these children committed systematic errors in German structures by adopting the simpler rules from their L2 when speaking German. Nevertheless, she argued that they knew that the rules belonged to two different linguistic systems. Hence, they transferred the grammatical construction from the other langauge since the German context was equivocal. She concluded that cross-linguistic influences between the syntactic systems of the children's two languages existed.

A longitudinal study by Döpke (1999) investigated four German-English-speaking children's syntactic knowledge. Their development of negation (NEG) and syntactically relevant modal particles (PRT) revealed the existence of cross-linguistic influences. V_NEG/PRT is a typical mid-sentence modification structure in German while NEG/PRT_V_XP is a structure in English. One of the findings revealed that in the children's German production, the English structure (e.g., NEG_V_XP) was found. For instance, "Katze nicht gehen zu Bett/ Cat not go to bed," was considered to be a result of the children's still developing syntactic knowledge. On the other hand, in their English production, the corresponding cross-linguistic structure, V_NEG/PRT was also observed. For instance, "I want not like that" or "I got also (PRT) my baby in here" was identified. An additional finding further confirmed that code-switching existed in the children's German production. Code-switching is defined as movement back and forth between two languages or dialects within the same sentence or discourse (Fromkin et al., 2003). The children's code-switching on the verb and the modifier was found in their German production such as "kann nicht *spill* das/ can not spill that" or "*just* rutschen runter/ just slide down."

In Fiestas and Pena's (2004) study, the effect of language transfer on 12 Spanish-speaking ESL children's oral narratives in Spanish and English was investigated. The finding indicated that cross-linguistic influences identified in each language were qualitatively distinctive. The Spanish-influenced English utterances showed influences on verb usage, pronoun omission and syntax. On the contrary, the English-influenced Spanish utterances indicated almost solely code-switching on the word or phrase level and modifier + noun instead of the typical Spanish word order as noun + modifier. In addition, it seemed that the children' expectations about story

length and how much information to yield in a specific narrative task in both languages were interrelated. The result supported Cummins's view (1991) that narrative productivity might be more probable to transfer from one language to another.

The above-mentioned ESL research was conducted with children learning two alphabetic languages. Relatively little is known about cross-linguistic influences identified in the oral narratives produced by children learning different language systems (e.g., alphabetic and logographic). Wang et al. (2006) investigated morphological awareness of 36 Mandarin-speaking ESL children. Their results indicated a cross-language transfer on morphological level in the acquisition of two distinct writing systems. The morphological transfer was only found in the direction from English to Mandarin. Given the fact that the children in this study had more rapid improvement in English language compared with Mandarin, they may tend to use L2 strategies in processing L1.

Some aforementioned studies have discussed cross-linguistic influences at the morphological and syntactic levels while relatively few studies have investigated Mandarin-influenced English or English-influenced Mandarin utterances at the morphological and syntactic levels. From the literature reviewed, it is expected that cross-linguistic influences at the morphological and syntactic levels in children's oral narratives are feasible to explore their language abilities.

Summary

The present study focused on Taiwanese EFL preschoolers' morphological and syntactic abilities in their Mandarin and English stories. Possible cross-linguistic influences on the storytelling task were also examined. Language productivity

measures were further calculated to determine whether there were significant language effects on the children's language productivity in their stories. Literature concerning the morphological and syntactic development of children learning two languages has suggested that morphological and syntactic knowledge has been regarded as one of the reliable measures of second language proficiency (Komarova et al., 2001; Marinova-Todd, 2003). Evidence from the literature reviewed confirms that researchers can measure cross-linguistic influences to obtain insight into the processes and the outcomes of acquiring more than one language (Miller et al., 2006).

CHAPTER THREE

METHOD

The Study

The present study collected 44 oral narratives, 22 in Mandarin and 22 in English respectively. Twenty-two Mandarin-speaking EFL preschoolers in Taiwan participated in this study. All of them were required to produce two narratives in both Mandarin and English from reading a wordless picture book. The children's language productivity was measured in the Mandarin and English narratives. Furthermore, a microstructural analysis focused on the children's morphosyntactic abilities in each language. Finally, possible cross-linguistic influences were determined.

Participants

A total of 22 Taiwanese EFL children (10 boys and 12 girls) with a mean age of 5 years and 10 months old (rang = 4;10-6;10) participated in this study. Their mean score on nonverbal intelligence quotient (IQ) test was 110.86. It indicated that their nonverbal IQ was above average (e.g., a score ranges between 110 and120 indicates an IQ above average). A high percentage of their parents received college education or higher degrees (paternal education: 82%, maternal education: 82%). A certain percentage of their parents worked as high-level or senior administrators (paternal occupation: 59%, maternal occupation: 36%). At the time the data were collected, all the children had received at least 12 months of English instruction (*Mean* = 25, *SD* = 11, range = 12-48) at their school or in other institutes. Only 1 of them had ever stayed abroad more than 3 months.

The children were considered EFL learners because they speak Mandarin as their

first language at home and learn English as a foreign language after enrolling in an English immersion kindergarten. This kindergarten offered English immersion programs where English was the primary medium of instruction. All of the children were recruited from two different programs in the same kindergarten in Tainan, a southern city in Taiwan. One of the two programs was an English language immersion program (19 students) and the other was a bilingual program (3 students) in which the children studied in the English immersion course in the morning and learned in Mandarin in the afternoon. The children from the immersion program were supposed to have better English abilities than the children from the bilingual program.

In the immersion program, there were two teachers in each class. One teacher was a native speaker of English from an English-speaking country (e.g., the United States, Australia, or South Africa). The other was a Taiwanese teacher who was not involved in the instruction. She assisted the English teacher in classroom management and communicating with students' parents. She also took care of the children during lunch hours and naptime. All of the students were in four classes, two K4 and two K6 classes (e.g., the fourth and sixth semester in a 3-year kindergarten). The class size was about 10-15 students.

Procedures

All narratives were elicited from the children using a 24-page wordless picture book, *Frog, where are you?* (Mayer, 1969). This storybook is about a boy and his dog, and their search for their missing pet frog. When they search for the frog, the boy and the dog encounter different forest animals that in some way interfere with their search for the frog. After several encounters, they eventually find the frog with a mate and a clutch of little baby frogs. The story ends when the boy and his dog leave for home

with one of the baby frogs as their new pet. Because this storybook provides a fairly rich context for language production, it has been used extensively (e.g., Miller et al., 2006; Reilly et al., 2004; Tsou and Cheung, 2007).

The study was conducted during the summer of 2008. The data collection period lasted approximately 5 weeks. At first, a 2-week classroom observation was conducted by the researcher to familiarize herself with the children. The classroom observation was followed by a task of the Test of Nonverbal Intelligence (TONI; Brown, Sherbenou, & Johnsen, 1990) and two major data collection sessions: a Mandarin narrative task and an English narrative task. The children's mental intelligence quotient (IQ) on the TONI helped understand if the children had language-learning disabilities on the basis of mental age. One participant was dropped from the study because his score was relatively low. The TONI and two data collocation sessions were administered during the children's break time.

Prior to the TONI and data collection sessions, school (see Appendix A) and parental permission were obtained and parents had completed a brief demographic questionnaire (see Appendix B and C) about their children. In order to ensure that the data collection procedures were feasible to be followed in this kindergarten, a pilot study was conducted beforehand. A girl from a K6 immersion program took the TONI and produced a narrative in each language. The data collected in the pilot study was not used in the data analysis.

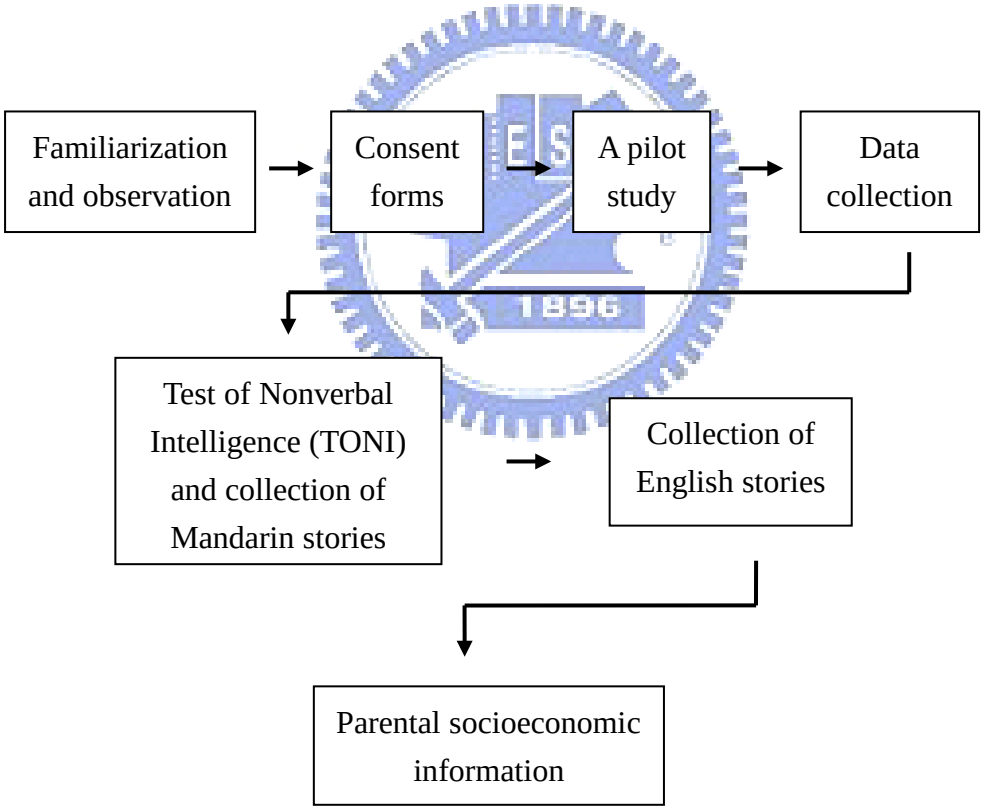
Before the Mandarin narrative task, the children were invited individually into a quiet classroom where they had been accustomed to. The researcher sat next to a child so as to prompt the child's production. The child was administered the TONI right before telling a Mandarin story. It took each child around 10 minutes to finish the test. In the Mandarin narrative task, when required to tell a story, each child began with

looking through the wordless book as long as s/he preferred in the presence of the researcher. Once s/he finished, the researcher requested the child to narrate a story in Mandarin. The child used the pictures in the book as an aid in the narration.

The child was prompted by the researcher saying, “Can you tell me what is happening in this story?” When the child stopped telling the story before going through the remaining pictures, the researcher encouraged production by asking, “Can you tell me more?” Then, as the child merely labeled the pictures, the researcher said, “Tell me what is happening.” Or, when the child addressed questions related to the content of the pictures, the researcher simply replied, “You think what it should be and it would be.” Back-channeling and some short phrases irrelevant to the content of the pictures (e.g., “Yes,” “Aha,” “Go on,” and “Tell me more.”) were also used to encourage the child’s storytelling and to demonstrate the researcher’s attentiveness to the narration. Praises were given freely throughout the session to encourage the child’s participation. The Mandarin equivalents of these prompts and praises (e.g., *ji4xu4* ‘go on’ and *hen3hao3* ‘very good’) were used while the researcher was eliciting Mandarin narratives. Each child spent around five to 15 minutes telling a Mandarin story.

After collecting the children’s stories in Mandarin, the researcher began to collect their stories in English with a time interval between these two data collection sessions. Since Mandarin was their dominant language, telling a Mandarin story first might familiarize them with the task in their second English narration. The children might also be less burdened with the reading and storytelling when required to tell a story in their more familiar language first. In addition, there was a time interval (more than 4 days) between these two sessions in order to avoid the practice effect and create independent performance for each language. The children might have translated

their Mandarin sentences word-for-word into English ones if they had told an English story immediately after a Mandarin story. In order to collect the data within the semester, the researcher asked three of the children to tell stories in Mandarin and English with an only four-day interval. In the English narrative task, the same procedure followed to elicit a Mandarin story was repeated to elicit an English narrative. It took the child about five to 15 minutes to tell an English story. At the end of each task, the children were rewarded with praises and stickers. Finally, with the help from the Taiwanese teachers, parental socioeconomic information was collected and the results were shown in Appendix D. Figure 1 shows the flow chart of the data collection procedures.



Data Collection Procedures

Figure 1. Flow chart of the data collection procedures.

Transcriptions and Coding

All narratives were digitally audio-recorded and transcribed verbatim. The Mandarin-English EFL researcher transcribed the English oral narratives into computer text files based on the conventions from the Systematic Analysis of Language Transcripts (See Appendix E) or SALT software (Miller et al., 2006). The Mandarin oral narratives were manually transcribed by the same trained researcher into computer Word files. The transcripts were segmented into modified communication units (C-units) as defined in Chapter Two. Once transcribed, narratives in each language were coded for linguistic structures and possible cross-linguistic influences.

As for language productivity measures, English measures were generated using SALT while Mandarin measures were calculated manually. SALT was used to transcribe and code narratives in an alphabetic language such as English rather than a logographic language such as Mandarin. Following Au's (2002) procedures for oral language analysis, mazes (e.g., false starts, repetitions, reformulations, and unfinished attempts), comments, habitual starter, and place-fillers irreverent to the narratives (See Appendix F) were excluded from the word counts for the calculation of language productivity.

Transcription and Coding Reliability

Transcription reliabilities were assessed for both Mandarin and English narratives. Approximately 20% of the narratives, that is, five stories in each language were independently transcribed by a trained first-year graduate student in the Graduate Institute of Teaching English to Speakers of Other Languages (TESOL). A point-to-point comparison at the word level between the researcher and the second

transcriber was high, 87% in Mandarin stories and 88% in English stories, when the number of agreements was divided by the number of agreements plus disagreements.

Coding reliabilities were established at 89% agreement in Mandarin stories and 88% in English stories. A trained second-year graduate student in TESOL also independently coded 20% of the transcripts in each language, a total of 10 stories. A point-to-point comparison was calculated by dividing the number of agreements by the number of agreements plus disagreements. All of the remaining percentage of disagreements in transcription and coding were resolved by the researcher for 100% agreement.

Measures of Language Productivity

Language productivity measures were used to determine whether there were significant language effects on the children's language productivity in their stories in the present study. Language productivity was measured for the number of modified communication units (NMC), the mean length of modified communication unit in words (MLMCW), the number of total words (NTW), and the number of different words (NDW).

The number of the children's utterances defined by modified communication units (C-units) was calculated. The number of total words was divided by the total number of modified C-units to calculate MLMCW. The NTW provided a measure of story length. Each word in the story was calculated. As for the NDW, it measured vocabulary diversity. The NDW was calculated by counting the number of different lexemes, specifically their word roots without inflection. For instance, 'runs' and 'ran' were considered as one lexeme 'run'; *ji1guo4* 'have eaten' and *ji1le0* 'ate' were taken as one lexeme *ji1* 'eat.' The measure of lexical diversity in both languages was

comparable since this measure was based on lexemes in respective language.

Measures of Linguistic Structures

To access the children's grammatical knowledge, morphological errors and syntactic structures used in both languages were identified, tallied, and categorized. For morphological errors, all errors of commission or omission were counted. Morphological errors were categorized and limited to only certain types in Mandarin and English narratives respectively. Categories and examples of morphological errors were in the next section. Number of students making each type of morphological errors was calculated. For measures of syntactic structures, the present study limited analyses to only certain types of syntactic structures in Mandarin and English stories respectively. Categories and examples of syntactic structures would be presented in the next section. Number of students using each type of syntactic structures was counted. Unlike the morphological errors, using various syntactic structures is a rhetorical choice the narrator makes when telling a story. Hence, the children's use of various syntactic types was examined rather than their syntactic errors.

Mandarin Morphological Errors

In the children's Mandarin narratives, the types of morphological errors consisting of the following were adopted from Tse et al.'s (1991) study.

1. A deictic expression refers to the interpretation of a unit depending on the context of the utterance including a personal pronoun. A deictic expression could be:

   1.1 A demonstrative expression indicates the noun or noun phrase referred to.

wo3	shou3	li3	de0	na4ge0[EW:zhe4ge0]	hen3	da4
I	hand	in	GEN	that[EW:this]	very	big

That[EW:This] in my hand is very big.

我手裡的那個[EW:這個]很大

1.2 A temporal expression is a unit related to time.

Mother:

zuo2tian1 ze3me0iang4

yesterday how

How’s yesterday?

昨天怎麼樣?

A girl:

jin1tian1[EW: zuo2tian1] bu4 hao3

today[EW:yesterday] not good

Today[EW: Yesterday] is not good.

今天[EW:昨天]不好

1.3 A spatial expression is a unit relevant to space.

Mother:

niao3 zai4 na3li3

bird at where

Where is the bird?

鳥在那裡?

Child:

zhe4li3[EW: na4li3]

here[EW:there]

Here[EW:There].

這裡[EW:那裡]

Mother:

na4li3 na4li3

there there

There. There.

那裡。那裡

2. Particles are known as empty words in Chinese serving various functions, such as *le0* as a change of state marker, *ou0* used to soften the tone of a sentence and *ma1* used to form a typical question sentence.

ta1 xia4 lou2 ou0[EW:ma0]

3sg go:down stairs FW[EW:Q]

* Does s/he goes[EW:go] downstairs?

她／他下樓哦[EU:嗎]

3. Aspect markers are used to refer to how the situation itself is being viewed with respect to its own internal makeup, such as *le0* as the perfective marker, *zai4* as the imperfective marker and *guo4* as the experiential marker.

uo3 zheng4[EW:zheng4zai4] chi1 guo4[EW] fan4

I right:now eat EXP[EW] rice

I have[EW:am] eaten[EW:eating] right now.

我正[EW:正在]吃過[EW]飯

4. Adverbs are units expressing speaker's attitude, manner of action, frequency or qualification.

   zou3 man4dian3[EW: quai4dian3] gan3shi2jian1

   Walk slowly-little[EW:fast-little] rush-time

   Walk more[EW] slowly[EW:faster]. (We are) in a hurry.

   走慢點[EW:快點]，趕時間

5. Classifiers are words occurring with numbers or demonstratives or certain quantifiers, such as *mei3* 'every' before the noun.

   yi1 ge0[EW:ben3] shu1

   a CL book

   a book

   一個[EW:本]書

6. Modal auxiliaries are units with some verbal properties and not full-fledged verbs, such as *neng2* 'be able to' and *hui4* 'know how' or 'will.'

   A boy:

   ta1 hui4 lai2 ma1

   3sg will come Q

   Will s/he come?

   她／他會來嗎?

   A child:

   neng2[EW: hui4]

   be:able:to[EW:will]

(S/He) is[EW:wll] able[EW] to[EW].

能[EW:會]

7. Personal pronouns belong to one type of deictic expressions and are used to substitute the person or people mentioned previously.

ta1men0[EW:ta1]	zai4	ku1
They[EW:3sg]	DUR	cry

They[EW:S/He] is crying

他們[EW:他／她]在哭

8. Coverbs are morphemes which introduces a noun or noun phrase. A phrase formed by the coverb plus the noun phrase generally precedes the main verb and follows the subject or topic, such as *cong2* ‘from’ and *ba3* as the marker of the Ba construction.

ta1	*cong2	gong1yuan2	lai2
3sg	*from	park	come

He comes *from the park.

他*從公園來

9. Connectors are units used to connect two utterances, such as *ke3shi4* ‘but’ or functioning as turn holders such as *en0* or *na4*.

wo3	e4	le0	ke3shi4[EW:suo3yi3]	xiang3	chi1	fan4
I	hungry	CRS	but[EW:so]	want	eat	rice

I’m hungry but[EW:so] want to eat.

我餓了可是[EW:所以]想吃飯

English Morphological Errors

For English narratives, morphological errors were classified and limited to the following types adopted from Reilly et al.'s (2004) study. The examples below were taken from the same study.

1. Pronouns are units used to replace nouns or noun phrases to refer to someone or something.

   Him[EW:He] lost it.

2. Verb auxiliaries are verbs used with main verbs to form different tenses or to make the verb passive. The basic auxiliary verbs are "be," "have," and "do" and modal auxiliaries are verbs, such as "can" and "will."

   They *are hollering at him

   They was[EW:were] hollering.

3. Determiners are words used at the beginning of noun groups to indicate, for instance, which thing one is referring to or whether one is referring to one thing or several, such as "a," "the," "this," "some," and "each."

   *The dog runs faster than the bee.

4. Noun plurals are forms of nouns used to refer to more than one person or thing.

   He found lots of frog/*s.

5. Verb tenses are forms of verbs usually showing whether one is referring to the past, present or future time.

   He fall[EW:fell] down there.

6. Number marking primarily focuses on the relation between the subjects of the sentences and the verbs.

   He have[EW:has] his horns sticking in.

7. Prepositions are words usually taking noun groups as their objects, such as “by” and “into.”

   He’s looking up[EW:into] those woods.

Mandarin Syntactic Structures

For Mandarin narratives, the serial verb construction, sentence linking, the Ba construction, and the Bei construction were examined. The serial verb construction and sentence linking were adopted from Tsou and Cheung’s (2007) study and further definition related to these two structures was adopted from Li and Thompson’s (1981) study. According to Tse et al.’s (1991) study, the Ba construction and Bei construction were relatively difficult for learners to acquire at an early age; they were examined here and defined by Li and Thompson (1981). The examples below were all taken from Li and Thompson’s (1981) study.

1. The serial verb construction is a sentence consisting of two or more verb phrases or clauses juxtaposed without any marker signifying what the relationship is between them. A serial verb construction can be formularized as this (the noun phrases in parentheses are all optional): (noun phrase) verb (noun phrase) (noun phrase) verb (noun phrase) (Li & Thompson, 1981). There are four kinds according to different types of messages conveyed.

   1.1 A sentence includes two or more separate events relating in one or more of the following four ways: (i) Consecutive means that one event occurs after the

other; (ii) Purpose means that the first event is accomplished for the purpose of achieving the second; (iii) Alternating means that the subject alternates between two actions; (iv) Circumstance means that the first verb phrase describes the circumstances under which the event in the second verb phrase or clause occurs. (i), (ii), (iii) and (iv) are placed after each translation to indicate which of the four relationships it represents. The verb phrases in each example are underlined.

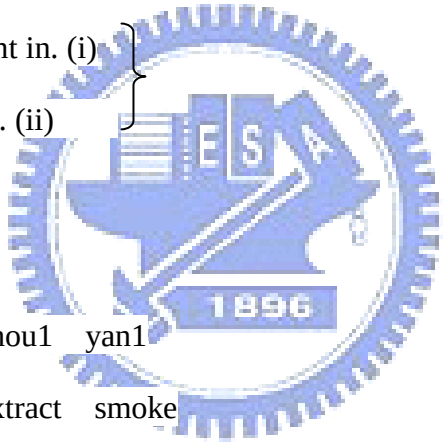
wo3 mai3 piao4 jin4qu4

I buy ticket enter-go

I bought a ticket and went in. (i)

I bought a ticket to go in. (ii)

我買票進去



ta1 qi2 ma3 chou1 yan1

3sg ride horse extract smoke

S/He rode a horse and smoked. (i) (iii)

S/He rode a horse in order to smoke. (ii)

S/He rode a horse while smoking. (iv)

他騎馬抽煙

1.2 A sentence contains a verb phrase or clause functioning as (i) the subject or (ii) direct object of another or (iii) a clause in the question form as a subject or direct object of another clause or verb phrase.

da4	sheng1	nian4	ke4wen2	ke3yi3	bang1zhu4	fa1yin1
big	voice	read	lesson	can	help	pronunciation

Reading the lesson aloud can help one's pronunciation. (i)

大聲念課文可以幫助發音

ta1	bu4	chi1	xi1gua1	tai4	ke3xi2	le0
3sg	not	eat	watermelon	too	sad	CRS

It's too bad he doesn't eat watermelon. (i)

他不吃西瓜太可惜了

wo3	yao4	shang4jie1
I	want	ascend-street

I want to go out. (ii)

我要上街

wo3	pan4wang4	ni3	kuai4	yi1dian3	bi4ye4
I	hope	you	soon	a:little	graduate

I hope you'll graduate a bit sooner. (ii)

我盼望你快一點畢業

ta1men0	bu1	xiao3de0	shei2	ba3	dian4deng1	guan1
they	not	know	who	BA	electricity-light	close

diao4	le0
off	PFV/CRS

They don't know who turned off the light. (iii)

他們不曉得誰把電燈關掉了

1.3 A pivotal construction includes a noun phrase as the subject of the second verb and as the direct object of the first verb simultaneously. The noun phrase functions as a pivot associating the two verbs.

wo3	quan4	ta1	nian4	yi1
I	advise	3sg	study	medicine

I advised him to study medicine.

我勸他念醫

1.4 A descriptive clause is a sentence involving a transitive verb whose direct object is described by a following clause.

ta1	you3	yi1	ge0	mei4mei4	hen3	xi3huan1
3sg	exist	one	CL	younger:sister	very	like

kan4	dian4ying3
see	movie

He has a younger sister who likes to see movies.

他有一個妹妹很喜歡看電影

2. Sentence linking is a structure including at least two clauses. It means “sentences composed of two linked clauses . . . [and] each of the two constituent clauses contains a linking element . . . .” (Li & Thompson, 1981, p. 632). The meaning

completion of each clause depends on the other clause. This dependence can be established either by specific linking elements (e.g. a conjunction or an adverb) or by the speaker's intention. For example, one type of the linking elements is adverbial forward-linking elements including (i) movable forward-linking elements which can be located both clause-initially and after the topic/ subject and; (ii) nonmovable forward-linking elements which must be positioned either clause-initially or after the topic/ subject.

(i) Moveable forward-linking elements: The majority of these forward-linking movable adverbs require the occurrence of a backward-linking element in the following clause. The most general pairings of them are indicated below:

Forward-linking		Backward-linking	
fei1dan4 / bu2dan4	'not only'	er2qie3 / ye3 / hai2	'also'
ru2guo3 / jia3ru2 / jia3shi3 / yao4shi4	'if'	jiu4	'then'
		Ye3	'also'
chu2fei1	'unless'		
ji2shi3 / jiu4shi4	'even if'	ye3 / hai2	'still'
yao4bu2shi4	'if not that'	jiu4	'then'

sui1ran2	‘although’	dao4	‘but’
		ke3shi4	‘but’
		hai2(shi4)	‘still’
yin1wei4 / you2yu2	‘because’	suo3yi3	‘therefore’
		jiu4	‘then’

yao4shi4	jin1tian1	fang4	jia4	jiu4	hao3	le0
if	today	let:go	holiday	then	good	CRS

If today were a holiday, that would be good.

要是今天放假，就好了

yin1wei4	tian1	hei1	le0	suo3yi3	wo3	mei2	chu1qu4
because	sky	black	CRS	so	I	not	exit-go

Because it had gotten dark, I didn’t go out.

因爲天黑了，所以我沒出去

(ii) Nonmoveable forward-linking elements: They must occur after the topic or subject; thus, they do not appear sentence-initially except the absence of the topic. There are four types, all of which require an identical backward-linking.

Forward-linking	Backward-linking	
you4…	you4	
		‘both…and’
		‘not only…but also’
ye3…	ye3	‘not only…but also’

yue4…	yue4	‘the more…the more…’
yi4bian1…	yi4bian1	‘while…V-ing…Ving…’

ta1	yi4bian1	chi1	ping2guo3	yi4bian1	kan4	bao4
3sg	while	eat	apple	while	read	paper

He’s eating an apple while reading the paper.

他一邊吃蘋果一邊看報

The other way to create the dependence between two clauses is based on the speaker’s intention rather than overtly marked; that is, the hearers have to infer the specific relationship between two clauses from their knowledge of the circumstance and of what has been mentioned to that point.

ni3	bu4	xiang1xin4	wo3	zuo4	gei3	ni3	kan4
you	not	believe	I	do	to	you	see

If you don’t believe it, I’ll do it for you to see.

你不相信，我做給你看

wo3	you3	shi2jian1	yi2ding4	lai2	kan4	ni3
I	exist	time	definitely	come	see	you

{When / If} I have time, I’ll definitely come to see you.

我有時間，一定來看你

3. The Ba construction has the basic sentence structure that the direct object is placed immediately after Ba and before the verb (Li & Thompson, 1981). There are two conditions under which a message in the form of a Ba sentence can be expressed appropriately. The first one is that the noun phrase following Ba is definite, specific or generic. The other is that the message involves disposal, something occurring to the entity referred to by the Ba noun phrase.

kuai4	yi1dian3	ba3	zhei4	kuai4	rou4	na2zou3
fast	a:little	BA	this	piece	meat	take-go

Take this piece of meat away quickly!

快一點把這塊肉拿走

ta1	you3deshi2hou4	ba3	yan2	dang1	tang2	chi1
3sg	sometimes	BA	salt	take:as	sugar	eat

He sometimes eats salt thinking it's sugar.

他有的時候把鹽當糖吃

4. The Bei construction is used to refer to the passive voice in Mandarin. The Bei construction is generally applied to sentences including the coverb "Bei," such as this, NP Bei (NP) verb, where NP represents noun phrase (Li & Thompson, 1981). The direct object noun phrase, followed by the coverb Bei, which introduces the agent of the action, is affected by the action of the verb semantically and located sentence-initially. The Bei passive in Mandarin is used mainly to elicit an adverse condition in which something unfortunate has occurred as the following exemplifying:

jiao3zi0 bei4 (gou3) chi1diao4 le1

dumplings BEI (dog) eat-down PFV/CRS

The dumplings got eaten up (by the dog).

餃子被(狗)吃掉了

However, Chao reported that due to the influence from the Indo-European languages, particularly English, the nonadversity usage of the Bei construction which is known as “translatese,” a linguistic system in which from translating foreign passive verbs, ‘by’ or some equivalent in the Western language is mechanically equated to Bei, (as cited in Li & Thompson, 1981), has clearly increased in modern Chinese. Besides adversity, the Bei construction also expresses disposal in the same manner as the Ba construction does.

Zhang1san1 bei4 ren2min2 xuan3 zuo4 dai4biao3 le0

Zhangsan BEI people elect serve:as representative CRS

Zhangsan has been elected by the people to be (their) representative.

張三被人民選作代表了

wo3 bei4 ta1 bang3 le0 yi4 zhi1 tui3

I BEI 3sg tie PFV one CL leg

I had one leg tied up by him/ her.

我被他綁了一隻腿

English Syntactic Structures

For English narratives, syntactic structures were categorized into the following

four types adopted from Reilly et al.'s (2004) and Gutierrez-Clellen's (1998) studies. The examples below were all taken from Reilly et al.'s (2004) study.

1. Noun clauses are embedded clauses which function as nouns and can be the subject or object in a sentence.

   Thy boy knows *that he cannot be late*.

2. Clauses connected by conjuctives which are connective words, especially a conjunction or conjunctive adverb (e.g., a temporal adverb), were examined. Clauses can be connected by a conjunction such as "when" and "because" or a temporal adverb such as "then."

   While the boy was sleeping, the frog snuck out.

3. Relative clauses refer to embedded clauses which modify noun phrases. A relative clause usually begins with a relative pronoun, such as "who," "which" or "that."

   The boy was calling for the frog *that was lost*.

4. A passive sentence is a sentence in which the subject undergoes the action. It is formed by using a form of the auxiliary verb be together with the past participle of a verb.

   He *was thrown* in the water.

Measures of Cross-Linguistic Influences

Possible cross-linguistic influences at the morphological and syntactic levels were measured. When structures unique to Mandarin but not to English are directly transferred into English or structures unique to English but not to Mandarin are

directly transferred into Mandarin, utterances with transferred structures are considered to be influenced by the other language. Possible cross-linguistic influences could be classified into four types:

1. A Mandarin-influenced English morphological expression

qi4 qiu2

air ball

air ball[EW:balloon]

balloon

汽球

hong2 se4

red color

red color[EW:red]

red

紅色

2. A Mandarin-influenced English syntactic expression

wo3 chi1 wan2

I eat finish

I *have eat[EW:eaten] finish[EW:up].

I've eaten up.

我吃完

hao3 nan2 jian3

so hard cut

*It *is so hard to cut.

It’s so hard to cut.

好難剪

zhe4	yi2	ge0	bu4	quan1
This	one	CL	not	circle

This[EU] one[EU], don’t circle *this *one.

Don’t circle this one.

這一個，不圈

ying1wei4	ta1	lei4	le0	suo3yi3	ta1	zao3	shang4	chuang2
because	3sg	tired	CRS	so	3sg	early	go:to	bed

Because[EU] he’s tired so he got to bed early.

Because he’s tired so[EU] he got to bed early.

因爲他累了，所以他早上床

3. An English-influenced Mandarin morphological expression

uo3	xiang3	chi1	mi3[EW:fan4]
I	want	eat	rice

I want to have rice.

我想吃米[EW:飯]

4. An English-influenced Mandarin syntactic expression

ta1	zai4	tai2bei3	zuo2tian1
3sg	in	Taipei	yesterday

S/He’s in Taipei yesterday.

他*昨天在台北昨天[EU]

A visitor:

ma1ma1	bu2	zai4(zhe4li3)	ma1
mother:mother	not	in (here)	Q

Isn’t (your) Mom here?

媽媽不在嗎?

A boy:

you3[EW: mei2 iu3]	ta1	zai4(zhe4li3)
yes[EW:no]	3sg	in (here)

Yes, she’s here.

有[EW:沒有]，她在

CHAPTER FOUR

RESULTS

The present study was conducted with 22 Taiwanese EFL children producing stories for a Mandarin and an English task. The results of this study were presented in the sequence of language productivity, linguistic structures, and cross-linguistic influences. More specifically, descriptive statistics were shown for measures of language productivity. To understand the children's morphological and syntactic abilities, examples of linguistic structures and cross-linguistic influences were excerpted from the children's narratives.

All Mandarin and English narratives were analyzed for four language productivity measures. These measures included the number of modified C-units (NMC), mean length of modified C-unit in words (MLMCW), the number of total words (NTW), and the number of different words (NDW). Measures of linguistic structures consisted of morphological errors and syntactic structures used. Measures of cross-linguistic influences were explored for English-influenced Mandarin morphological expressions, English-influenced Mandarin syntactic expressions, Mandarin-influenced English morphological expressions, and Mandarin-influenced English syntactic expressions.

The children's morphological and syntactic knowledge in Mandarin and English was addressed through the analyses of morphological errors and syntactic structures used in their Mandarin and English narratives. Owing to the different nature of Mandarin and English, types of morphological errors and syntactic structures analyzed in Mandarin narratives were not the same as those calculated in English narratives.

To explore possible differences in language productivity between Mandarin and English, paired sample *t*-tests were conducted. In addition, the relation between the children's language productivity in both languages was also evaluated by Pearson-Product Moment correlations. For linguistic structures, the number of children making each type of morphological errors and the number of children using each type of syntactic structures in Mandarin and English narratives respectively were calculated. Finally, possible cross-linguistic influences shown in the children's Mandarin and English stories were identified and categorized. The number of children producing each type of influenced structures was counted.

Language Productivity

For language productivity, descriptive statistics were calculated, revealing the means, standard deviations, and ranges for each measure of language productivity in Mandarin and English narratives (see Table 1). The effect of language on productivity measures was explored using paired sample *t*-tests with scores (NMC, MLMCW, NTW, and NDW) and languages (Mandarin and English) (also see Table 1). Results demonstrated that NMC in the children's Mandarin stories was slightly higher than that in their English stories. However, the difference was not significant t (21) = 1.34, p = .20. In addition, the children produced a slightly larger number of total words in their Mandarin stories than in their English stories but the difference was also not significant (t (21) = .07, p = .94). On the other hand, for the measure of MLMCW, the children produced shorter utterances in Mandarin than in English and the difference was significant t (21) = -4.25, p = .00. Therefore, the results indicated that the children's English utterances were longer than their Mandarin utterances. For the measure of NDW, the children used more different words in their Mandarin stories

than in their English stories and there was also a significant difference t (21) = 5.93, p = .00.

Table 1

Means, Standard Deviations, and Ranges for Mandarin and English Productivity Measures (N = 22)

	Mandarin			English			
Type	*M*	*SD*	*Range*	*M*	*SD*	*Range*	*t(p)*
NMC	38.73	10.13	26-69	35.64	8.94	20-50	1.34(0.20)
MLMCW	4.80	0.49	3.94-5.6	5.32	0.60	4.27-6.24	-4.25(0.00*)
NTW	185.27	50.92	126-315	184.32	54.13	105-281	0.07(0.94)
NDW	92.14	22.10	64-141	61.64	13.29	42-95	5.93(0.00*)

Note. * $p < .05$

A Pearson-Product Moment correlational analysis was further conducted to investigate whether NMC, MLMCW, NTW, and NDW in the children's Mandarin stories were correlated with the same measures in their English stories. Correlations between Mandarin and English productivity measures are reported in Table 2.

Table 2

Correlations between Mandarin and English Productivity Measures (N = 22)

Variable	Mandarin				
	NMC	MLMCW	NTW	NDW	
English					
NMC	.36				

MLMCW	.48*		
NTW		.28	
NDW			.14

Note. * $p < .05$

A moderate, but still positive and significant, correlation exists between the children's MLMCW in Mandarin and English stories ($r = .48$, $p < .05$). Figure 2 is a display of the language productivity distribution in the children's Mandarin and English stories.

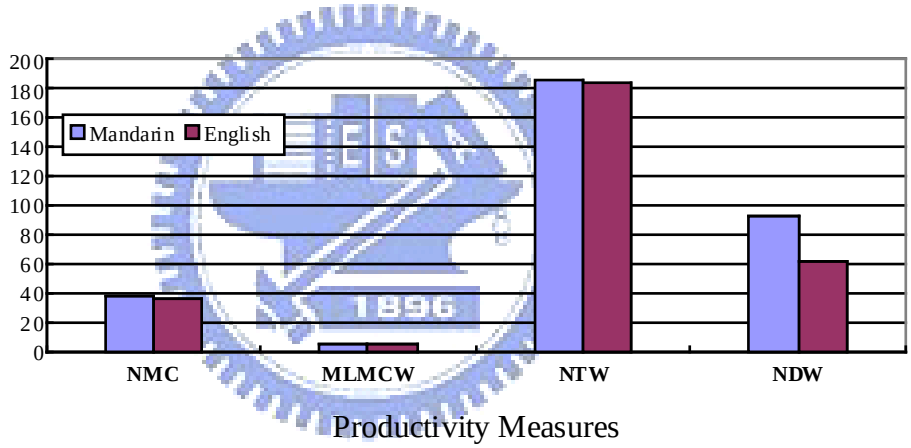


Figure 2. Language productivity measures.

Note. Language productivity measures included the number of modified C-units (NMC), mean length of modified C-unit in words (MLMCW), the number of total words (NTW), and the number of different words (NDW).

Morphological Errors in Mandarin and English Narratives

The second research question identified the types of Mandarin and English morphological errors which the Taiwanese EFL children made in their oral narratives. In Mandarin narratives, the number of students making each type of the

morphological errors was calculated. The Mandarin morphological errors were measured for deictic expression, particles, aspect markers, adverbs, classifiers, modal auxiliaries, personal pronouns, coverbs, and connectors. Results showed that few children made morphological errors in Mandarin. The types of Mandarin morphological errors identified in the children's stories included erroneous uses of adverbs (*n* = 2, 9%), personal pronouns (*n* = 1, 5%), coverbs (*n* = 3, 14%), and connectors (*n* = 1, 5%) (see Table 3). The list of Mandarin morphological errors as shown in Table 4 are all taken from the children's Mandarin stories.

Table 3

Number of Children Making Mandarin and English Morphological Errors (N = 22)

Type	Number of Children(%)	Number of Errors
Mandarin		
Deictic Expressions	0	0
Particles	0	0
Aspect Markers	0	0
Adverbs	2(9%)	3
Classifiers	0	0
Modal Auxiliaries	0	0
Personal Pronouns	1(5%)	1
Coverbs	3(14%)	4
Connectors	1(5%)	1
English		
Pronouns	7(31%)	15

Verb Auxiliaries	12(55%)	30
Determiners	21(95%)	151
Noun Plurals	13(59%)	53
Verb Tenses	13(59%)	119
Number Marking	22(100%)	355
Prepositions	21(95%)	131

Table 4

Mandarin Morphological Errors

Category	Age	Example
Adverb	5;11	na4 yi4 zhi1 gou3 ba3 hua1ping2
		that one CL dog ba vase
		you4[EW][a] da3sui4 le0
		again[EW] smash PFV
		That dog has smashed the vase again[EW].
		那一隻狗把花瓶又[EW]打碎了 [b]
	5;11	ta1men2 zai4 cao3yuan2 you4[EW] jiao4
		they at pasture again[EW] shout
		They shouted at the pasture again[EW].
		他們在草原又[EW]叫 [c]
	6;10	zhao3 yi1 hen3[EW] zhao3
		look-for one very[EW] look-for
		look for (the frog) very[EW] a little
		找一很[EW]找

Personal Pronoun	4;10	ta1men2	jiu4	gen1	ta1men2	jie4	
		they	emphatic	with	they	borrow	
		ta1[EW: ta1men2]	de0	bao3bei4			
		3sg[EW:they]	GEN	baby			
		They simply borrowed its[EW:their] baby from them.					
		他們就跟牠們借牠[EW:牠們]的寶貝					
Coverb	6;6	ta1	yao4	*zai4	ta1	shou3	shang4
		3sg	want-to	*at	3sg	hand	above
		It wants to be *at his hand.					
		牠要*在他手上					
	6;9	ta1	de0	na4[EW]	ge0[EW]	gou3	ye3 *bei
		3sg	GEN	that[EW]	CL[EW]	dog	also *bei
		diu1xia4qu4	le0				
		throw-down	CRS				
		His that[EW] dog was also thrown down.					
		他的那個[EW]狗也*被丟下去了					
	6;10	ta1men2	liang3	ge0	jiu4	*bei4	diu1
		they	two	CL	emphatic	*bei	throw
		dao4	li3mian4	qu4			
		to	inside	to-go			
		They two were simply thrown into the inside (of the pond).					
		他們兩個就*被丟到裡面去					

Connector	6;10	sui1ran2[EW]	ta1	diao4xia4lai2	de0shi2hou4	na4ge4	
		although[EW]	3sg	fall-down	when	that	
		guan4zi0	shi4	bo1li2	jiu4	po4diao4	le0
		jar	be	glass	emphatic	break-fall	CRS
		Although[EW]when it fell down, that jar which was made of glass simply broke.					
		雖然[EW]牠掉下來的時候，那個罐子是玻璃就破掉了					

Note. [a]See Appendix E for the list of transcription and coding conventions. [b]This was the first time the dog broke a vase. [c]This was the first time they shouted at the pasture.

Similarly, the number of students making each type of English morphological errors was counted. Morphological errors examined in English narratives included pronouns, verb auxiliaries, determiners, noun plurals, verb tenses, number marking, and prepositions. Results showed that the children made errors in all seven types of morphological uses. A larger number of the children made errors in number marking, prepositions, and determiners than the number of children had erroneous uses of noun plurals, verb tenses, verb auxiliaries, and pronouns. The most common English morphological errors which almost all the children made were number marking (*n* = 22, 100%), prepositions (*n* = 21, 95%), and determiners (*n* = 21, 95%). On the other hand, more than half of the children produced errors in noun plurals (*n* = 13, 59%), verb tenses (*n* = 13, 59%), and verb auxiliaries (*n* = 12, 55%) while 7 out of the 22 children (31%) used inaccurate pronouns (see Table 3, p. 69). The examples in Table 5 provide an idea of how the children made English morphological errors. The English excerpts in Table 5 are all selected from the children's English narratives.

Table 5

English Morphological Errors

Category	Age	Example
Pronoun	5;5	It[EW:There]/'s[EW:'re] a[EW] many bees.
	6;8	They still can[EW:could]/'t find *it.
	6;10	She[EW:He] look/*ed behind the lake.
Verb	4;10	He *is getting closer.
Auxiliary		
	4;11	*The dog and this boy *are sleeping.
	5;0	The dog and the boy is[EW] fall down fall[EW] to the water.
Determiner	5;7	He go[EW:goes] to *the owl/*'s house.
	6;0	*The dog are[EW:is] running.
	6;2	*An owl came out.
Noun Plural	5;5	The dogs[EW:dog] flow[EW:fall]/*3s out in[EW:to] the garden.
	5;7	*There *are have[EW] so many bee/*s.
Verb Tense	5;7	The dog ran[EW:runs].[a]
	6;3	They did[EW:do]/n't find the frog.
	6;4	One day, they are[EW:were] sleeping.
Number	5;2	This frog jump/*3s out.

Marking		
	5;7	A boy and a dog sees[EW:see] a frog.
Preposition	5;5	A dog looks in[EW:at] the frog.
	6;2	The dog look/*ed in[EW:into] the jar.
	6;6	The boy is angry *about the dog.

Note. [a]If the child told the story using present tense in most sentences, this story was considered to be told in present tense. Likewise, if the child used past tense in most utterances, this story was considered to be told in past tense. Here, the child told the story in present tense but used past tense in a few sentences which should be produced in present tense as well.

With respect to morphological errors, what could be concluded from these results was that the number of children making English morphological errors was higher than the number of children making Mandarin morphological errors. The children seemed to perform better in their Mandarin narratives than in their English narratives.

Syntactic Structures in Mandarin and English Narratives

In answering the third research question, the types of Mandarin and English syntactic structures that Taiwanese EFL children used in their oral narratives were documented. In Mandarin narratives, the number of students using each type of the syntactic structures was calculated. Syntactic structures measured in Mandarin narratives included the serial verb construction, sentence linking, the Ba construction, and the Bei construction. The results indicated that 6 out of the 22 (27%) used all of these four types of syntactic structures in their stories. All of the children (n = 22, 100%) told stories using the serial verb construction and sentence linking, 15 of them (68%) used the Ba construction, and 7 of them (32%) made sentences with the Bei construction (see Table 6). Children can make sentences carrying more information

using the serial verb construction and sentence linking. The Ba and Bei constructions can add diversity to children's sentences. Examples of syntactic structures used in the children's Mandarin narratives can be seen in Table 7.

Table 6

Number of Children Using Mandarin and English Syntactic Structures (N = 22)

Type	Number of Children	Number of Uses
Mandarin		
Serial Verb Construction	22(100%)	343
Sentence Linking	22(100%)	299
Ba Construction	15(68%)	31
Bei Construction	7(32%)	8
English		
Conjunctive	22(100%)	119
Noun Clause	12(55%)	25
Passive Construction	4(18%)	4
Relative Clause	0	0

Table 7

Mandarin Syntactic Structures

Category	Age	Example

Serial Verb	5;11	nan2sheng1	xiang3yao4	duo3		
Construction		boy	want-to	hide		
		The boy wants to hide.				
		男生想要躲				
	6;9	ta1	jiu4	kan4	jiu4	zhao3
		3sg	emphatic	see	emphatic	look-for
		kan4	dao4	zhe4ge4		
		see	to	this		
		He simply sees, simply looks for it, and sees this.				
		他就看就找看到這個				
	6;10	ni3	zhi1dao4	qin1gwa1	zai4	na3li3	ma0
		you	know	frog	at	where	Q
		Do you know where the frog is?					
		你知道青蛙在哪裡嗎					
Sentence	5;7	gou3	dou0[EW]	yi1zhi2	pao3	yin1wei4	
Linking		dog	all[EW]	all-the-time	run	because	
		mi4feng1	yi1zhi2	dou0	zai4	zhui1	ta1
		bee	all-the-time	all	DUR	chase-after	3sg
		The dog all[EW] keeps running all the time because the bees all are chasing after it all the time.					
		狗都一直跑，因爲蜜蜂一直都在追牠					

	6;2	ta1	jiao4	gou3	bu4	ke3yi3	chu1	
		3sg	ask-to	dog	not	be-able-to	produce	
		sheng1yin1	ta1men2	jiu4	pa2	guo4qu4	le0	
		sound	they	then	climb	go-by	PFV	
		ta1men2	jiu4	kan4	dao4	qin1gwa1		
		they	then	see	to	frog		

He asked the dog not to produce sounds. They then climbed over. They then saw the frog.

他叫狗不可以出聲音，他們就爬過去了，他們就看到青蛙

	6;9	na4ge4	nan2hai2	qi3lai2	de0shi2hou4	jiu4
		that	boy	get-up	when	emphatic
		mei2	kan4	dao4	qin1gwa1	
		no	see	to	frog	

When the boy got up, he simply didn't see the frog.

那個男孩起來的時候，就沒看到青蛙

Ba	5;5	ta1	jiu4	ba3	shou4	fang4	zai4	qian2mian4
Construction		3sg	then	BA	hand	put	at	in-front

He then put his hands in front of himself.

他就把手放在前面

	6;9	na4	zhi1	lu4	ba3	ta1men2	diu1jin4
		that	CL	deer	BA	they	toss-enter
		shui3	li3				
		water	inside				

That deer tossed them into the water.

那隻鹿把他們丟進水裡

Bei	5;4	na4ge4	xiao3	gou3gou3	jiu4	
Construction		that	little	dog-dog	emphatic	
		bei4	ta1	bao4zou3		
		BEI	3sg	hug-leave		
		That little dog simply was held and taken away by him.				
		那個小狗狗就被他抱走				
	6;0	xiao3peng2you3	jiu4	bei4	kaz3hu4	le0
		child	emphatic	BEI	get-stuck	PFV
		The child was simply got stuck.				
		小朋友就被卡住了				

In the children's English narratives, the number of students using each type of the syntactic structures was calculated. English syntactic structures measured consisted of noun clauses, clauses connected by conjunctives, passive clauses, and relative clauses. The results demonstrated that none of the 22 children (*n* = 0, 0%) told English stories with all of these four types of syntactic structures. All of the children (*n* = 22, 100%) connected sentences with conjunctives and more than half of them (*n* = 12, 55%) embedded noun clauses into sentences. Nevertheless, few of them (*n* = 4, 18%) used the passive construction to describe the action of story characters and none of them (*n* = 0, 0%) produced relative clauses (see Table 6, p. 75). Table 8 provides examples of how syntactic structures were used in the children's English narratives.

Table 8

English Syntactic Structures

Category	Age	Example
Conjunctive	6;4	They woke up and saw the frog was gone.
	6;9	When they get up, they saw[EW:see] the frog is gone.
	6;9	They just saw[EW:see] the frog is not in this bottle. Then this boy just quickly put/*3s on the shirt.
Noun Clause	5;2	This boy thinks why the frog did[EW:is]/n't in[EW] here.
	5;5	The people[EW:person] and the dog see the fog is not here.
	6;8	He think/*3s let's go climbing up on[EW] here.
Passive Construction	4;10	*The bee/*s/*z house is broken.
	5;5	The glass is broken.
	5;7	The frog/*z house is broken.
	6;3	The jar is broken.

Overall, the participants used more variety of the pre-specified Mandarin syntactic structures than English ones. That is, they made more rhetorical options while telling stories in Mandarin.

Cross-Linguistic Influences in Mandarin and English Narratives

The last research question asked whether there was any cross-linguistic influence

in Taiwanese EFL children's oral narratives. Cross-linguistic influences were indeed observed in the children's narratives. Cross-linguistic influences were measured for English-influenced Mandarin morphological expressions, English-influenced Mandarin syntactic expressions, Mandarin-influenced English morphological expressions, and Mandarin-influenced English syntactic expressions. The number of children producing each type of influenced structures was measured. The results demonstrated that few children told Mandarin stories with influences from English (see Table 9). Only 2 of the 22 children (9%) produced English-influenced Mandarin morphological expressions (see Table 10 for examples) and 5 (23%) generated English-influenced Mandarin syntactic expressions (see Table 11 for examples). However, more than half of the children (*n* = 14, 64%) had Mandarin-influenced English morphological (see Table 12 for examples) and syntactic (see Table 13 for examples) expressions.

Table 9

Number of Children Producing Influenced Utterances (N = 22)

Type	Number of Children	Number of Uses
EMM	2(9%)	6
EMS	5(23%)	7
MEM	14(64%)	66
MES	14(64%)	58

Note. Cross-linguistic Influences included English-influenced Mandarin morphological expressions (EMM), English-influenced Mandarin syntactic expressions (EMS), Mandarin-influenced English morphological expressions (MEM), and Mandarin-influenced English syntactic expressions (MES).

Table 10

English-Influenced Mandarin Morphological Expressions

Age	Example
5;0	zai4 ta1 de0 tou2 *shang4 at 3sg GEN head *above on its head 在牠的頭*上
6;2	na4ge4 xiao3peng2you3 sheng1qi4 na4 zhi1 gou3 that child anger that CL dog That child angered that dog./ That child was angry about that dog. 那個小朋友生氣那隻狗 那個小朋友生那隻狗的氣 [a] He was angry at the dog.[b]

Note. [a]The grammatical Mandarin morphological expression; [b]A partially corresponding utterance found in the child's English story

Table 11

English-Influenced Mandarin Syntactic Expressions

Age	Example
5;4	fen1kai1 zuo4 zai4 ta1 de0 mian2 bei4 *shang4[WO] divide-open sit at 3sg GEN cotton quilt *above[WO] Sit down separately on his quilt. 分開坐在他的棉被*上[WO] 在他的棉被*上分開坐 [a]

5;5 ta1 qi3lai2 le0 gen1 gou3gou3[WO]

3sg get-up PFV with dog-dog[WO]

He got up with the dog.

他起來了跟狗狗[WO]

他跟狗狗起來了 [a]

6;9 ta1men2 tu2ran2 kan4 dao4 yi1 ge4 shu4mu4

they suddenly see to one CL tree-wood

dao3 de0[WO]

collapse GEN[WO]

They suddenly saw a tree which collapsed.

他們突然看到一個樹木倒的[WO]

他們突然看到一個倒的樹木 [a]

Note. [a]The grammatical Mandarin morphological expression

Table 12

Mandarin-Influenced English Morphological Expressions

Age	Example
4;10	He are[EW:is] looking *at a frog. ta1 kan4 zhe0 qin1gwa1 3sg see DUR frog 他看著青蛙

5;0 *He fall to[EW:into] the water inside[EW]

ta1 diao4 dao4 shui3 li3mian4

3sg fall to water inside

*他掉到水裡面

6;10 The bee do[EW:does]/n't want to give he[EW:him].

mi4feng1 bu4 xiang3 gei3 ta1

bee not want-to give 3sg

蜜蜂不想給他

Table 13

Mandarin-Influenced English Syntactic Expressions

Age	Example
5;2	Here *there have[EW:is] a bee *which go/*3s out. zhe4li3 you3 yi1 zhi1 mi4feng1 chu1lai2 here exist one CL bee exit-come 這裡有一隻蜜蜂出來
5;5	The dog and the people[EW:person] come out *to get the dog[EW:frog]. gou3 he2 ren2men0 chu1qu4 zhua1 gou3 dog and people exit-go get dog 狗和人們[EW:人]出去抓狗[EW:青蛙]
6;10	I not can sleeping[EW:sleep][WO]. wo3 bu4 neng2 shui4jiao4

I not can sleep

我不能睡覺

The distribution of cross-linguistic influences in children's narratives can be seen in Figure 3.

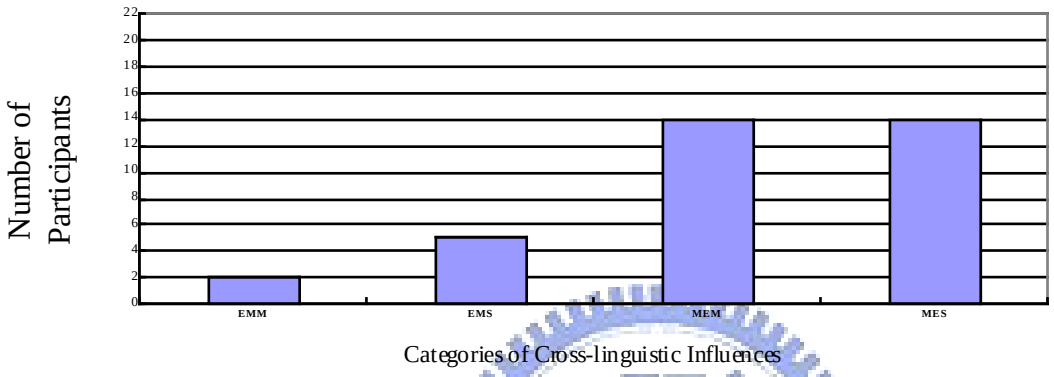


Figure 3. Cross-linguistic influences.

Note. Cross-linguistic Influences included English-influenced Mandarin morphological expressions (EMM), English-influenced Mandarin syntactic expressions (EMS), Mandarin-influenced English morphological expressions (MEM), and Mandarin-influenced English syntactic expressions (MES).

For cross-linguistic influences, more children were observed to produce Mandarin-influenced English utterances at the morphological and syntactic levels than those were noted to have English-influenced Mandarin utterances. That is, the children produced cross-linguistic structures with influences predominantly but not exclusively from Mandarin to English.

To briefly summarize here, for language productivity measures, the children produced higher NMC, NTW, and NDW but shorter MLMCW in their Mandarin narratives than in English ones. For morphological errors, more children had more variety of English erroneous uses while relatively fewer children made Mandarin morphological errors. When it comes to measures of syntactic structures, the children

used more variety of the pre-specified Mandarin syntactic structures than English ones. Finally, more cross-linguistic structures with influences at the morphological and syntactic levels from Mandarin to English were identified. As a result, the children appeared to perform better in their Mandarin stories than in English ones.

CHAPTER FIVE

DISCUSSION

The primary purpose of the present study was to explore Taiwanese EFL preschoolers' morphological and syntactic abilities in their Mandarin and English stories. The subsidiary purpose was to examine the existence of cross-linguistic influences on their storytelling task. In the present study, language productivity measures were also calculated for each story sample to determine whether there were significant language effects on the children's language productivity in their stories. A total of 22 Taiwanese EFL preschoolers served as participants. They produced 22 stories in Mandarin and 22 stories in English for a total of 44 stories. The study focused on certain types of Mandarin and English morphological errors and syntactic structures as well as possible cross-linguistic influences present in the oral narratives. The results demonstrated that the language in which the story was told to some extent had an effect on the children's language productivity. In addition, the children made particular types of morphological errors and used certain types of syntactic structures in their Mandarin and English stories. Finally, possible cross-linguistic influences were identified.

Language Productivity of the Children's Mandarin and English Narratives

Analyses of language productivity measures revealed that the Taiwanese EFL children produced higher NMC, NTW, and NDW but shorter MLMCW in their Mandarin narratives than in English ones. The children told stories of equal length in both Mandarin and English which were conveyed through NTW. This finding is consistent with that of Fiestas and Pena (2004). In their study, the children primarily

spoke their native language at home and learned English at school. They indicated that the children's expectations about story length in a specific storytelling task in each language were interrelated. In the present study, the children primarily spoke Mandarin at home and studied English at school. As observed in their Mandarin and English narratives, the story lengths in terms of NTW in both languages were comparable. Despite the fact that the children told stories of equal length in both the Mandarin and English narrative tasks, there were differences between the Mandarin and English stories in the children's mean length of modified C-unit in words (MLMCW) and the number of different words (NDW). Although the children might have been expected to have better language productivity in Mandarin than in English, this trend was only evident in the children's number of modified C-units (NMC), the number of total words (NTW) and NDW. Here, the children tended to produce significantly longer MLMCW in English than in Mandarin.

There are two possible explanations for this finding. The tendency to produce more words in an English utterance could reflect differences in grammatical structure between Mandarin and English. First, English has a strict Subject-Verb-Object word order and in nearly all cases, pronominal subjects or objects cannot be omitted in English sentences. In contrast, Mandarin is a pro-drop language (Gelman & Tardif, 1998); that is, pronouns can be omitted when they are pragmatically inferable from the context. Thus, pronoun uses are different between Mandarin and English. This is further complicated by the fact that pronouns are expressed more frequently in English than in Mandarin (Gelman & Tardif, 1998). Thus, English pronouns are used more frequently and omitted much more rarely than Mandarin ones. The children in the present study tended to more frequently express pronouns in their English stories, but drop pronouns in their Mandarin stories. Therefore, this may have increased the

children's MLMCW in English.

From the same perspective, in English, a discourse often begins with the use of indefinite articles (e.g., *A* frog was in the jar.); and once speaker and listener agree on the referents, definite articles (e.g., A dog chased *the* frog.) start to appear. A violation of the discourse rule produces unacceptable utterances (Fromkin et al., 2003). Nevertheless, the discourse rule is not applied to Mandarin sentences. Mandarin speakers do not need to use definite articles to specify the agreed upon referents (e.g., *qing1wa1* zai4 quan4zi0 li3 '*A frog* was in the jar.' gou3 zhui1 *qing1wa1* 'A dog chased *the frog*.'). Therefore, the children's MLMCW in English was longer than that in Mandarin.

In addition, in the present study, the children's vocabulary diversity in their Mandarin stories was significantly higher than that found in their English stories. There are two possible reasons for the difference in vocabulary diversity. First, the children's tendency to use significantly fewer different words in their English stories may be related to the fact that Mandarin was their dominant language. The children in the present study primarily spoke Mandarin at home and were only exposed to English in an English immersion program (19 students) or a bilingual program (3 students) in which the children studied in English-medium classes in the morning, and were taught in Mandarin in the afternoon. All the children's average time of English learning was only 25 months. Therefore, they might have better Mandarin language skills than English. English language learners are assumed to have much better first language skills than English, at least initially (Miller et al., 2006). Thus, it is expected that these children had larger vocabulary in their stronger language (i.e., Mandarin) than in their still-developing foreign language (i.e., English).

Secondly, when the data were being collected during the summer session, all of

the children were taking a 2-week intensive Mandarin course in which they learned how to pronounce and recognize Mandarin vocabulary. Intensive instruction can improve students' academic achievement to a large extent (Hardman & Dawson, 2008). The children's intensive Mandarin course may have enlarged their Mandarin vocabulary in a short period of time when the story samples were being collected.

It was observed that the children in the study performed better in Mandarin than in English on three language productivity measures. Two of the three language productivity measures analyzed were comparable between Mandarin and English; however, the children had significantly lower vocabulary diversity in their English stories than in their Mandarin stories. On the other hand, the children's MLMCW was significantly higher in English than in Mandarin.

Morphological Errors in Mandarin and English Narratives

Overall, different types of morphological errors in the children's Mandarin and English stories were found. The children made fewer types of morphological errors in Mandarin than in English, and the number of students making morphological errors in the Mandarin stories was relatively smaller than that in English ones.

Mandarin Morphological Errors

The second research question asked what types of Mandarin morphological errors the Taiwanese EFL children made in their oral narratives. The present study limited analyses to predetermined nine types of morphological errors in Mandarin stories. The analyses revealed that four types of Mandarin morphological errors identified in the children's stories included erroneous uses of adverbs (n = 2, 9%), personal pronouns (n = 1, 5%), coverbs (n = 3, 14%), and connectors (n = 1, 5%). However, the number of the children making each type of morphological errors was

small. Given that Mandarin is the dominant and primary language spoken in Taiwan, the children were exposed to Mandarin. Hence, the children were expected to make few Mandarin morphological errors. Another explanation is that the children have acquired the nine types of word classes; thus, few of them had erroneous uses of these word classes. Taiwanese monolingual children's first emergence of the aforementioned nine types of word classes occurred at the age of no later than 22 month (Tse et al., 1991). Usually, it takes children a couple of months after the first emergence of a word class to produce a word class with greater frequency. The children in the present study were between the ages of 4;10 and 6;10. They appeared to have acquired and mastered the knowledge in these aspects of Mandarin morphology to a large extent. Perhaps it was for this reason that they committed few Mandarin morphological errors.

What can be concluded from these results is that the morphological knowledge of these Taiwanese EFL children appeared to be well developed when the Mandarin stories were narrated. It can only be supposed that as age increases, the Taiwanese EFL children become more proficient in their morphological uses. A longitudinal study with younger Mandarin-speaking EFL children may see more instances of children's morphological errors as well as their developing abilities in acquiring morphological knowledge in their Mandarin stories.

English Morphological Errors

As was the case with Mandarin morphological errors, the children committed morphological errors in their English narratives. Unlike the morphological errors in the children's Mandarin stories, the children committed more types of English morphological errors, and a larger number of students made morphological errors in their English stories. The present study limited analyses to predetermined seven types

of English morphological errors. The Taiwanese EFL children committed a greater proportion of errors in number marking, prepositions, and determiners than that in noun plurals, verb tenses, verb auxiliaries, and pronouns. The most common English morphological errors which almost all the children made were number marking (*n* = 22, 100%), prepositions (*n* = 21, 95%), and determiners (*n* = 21, 95%). On the other hand, more than half of the children (*n* =13, 59%) produced errors in noun plurals as well as verb tenses, and 12 out of the 22 children (55%) had errors in verb auxiliaries while 7 out of the 22 children (31%) used inaccurate pronouns. These results were partially consistent with the findings of Reilly et al. (2004), which suggested that both typically-developing and atypically-developing monolingual children tended to make English morphological errors in the aforementioned seven types. These seven types of morphological errors seem to be typical for both monolingual English-speaking and EFL children.

As expected, a larger number of the children making English morphological errors and more types of morphological errors were observed. In the present study, the children's average time of English learning was 25 months. Fifteen out of the 22 children (68%) had received English instruction for less than 25 months. Seven of them (32%) had been exposed to English for no more than 18 months. The Taiwanese EFL children may still be in the process of developing their English morphological knowledge. Furthermore, a greater proportion of the children making errors in number marking, prepositions, and determiners may have been an indication of the different nature of morphology between Mandarin and English.

All the children had erroneous use of number marking in their English narratives. English is a language with subject-verb agreement (Vigliocco, Butterworth, & Garrett, 1996), while Mandarin is a topic-prominent language (Li & Thompson, 1981). When

speaking English, speakers have to use number marking to indicate the relation between the subjects of the sentences and the verbs (Vigliocco et al., 1996). However, Mandarin speakers do not need to reveal this relation. Therefore, the children tended to make errors in number marking when speaking the non-dominant language. Also, instead of using prepositions, Mandarin speakers use coverbs (e.g., locative *zai4*) to introduce a noun or noun phrase, and sometimes a locative particle (e.g., *li3mian4* 'inside') can follow the noun or noun phrase to specify a spatial relationship (Li & Thompson, 1981). Finally, when referents to which a Mandarin speaker is referring can be pragmatically inferred from the context, determiners preceding the referents usually can be omitted in Mandarin.

In sum, the Taiwanese EFL children's morphological errors in Mandarin and English stories suggested that the children's Mandarin morphological abilities appeared stabilized, while their English morphological skills were still in development. The children were clearly acquiring English as an additional language, and there was no obvious evidence indicating that their morphological skills in the native language were affected during the process.

Syntactic Structures in Mandarin and English Narratives

In contrast to the above-mentioned morphological errors, narrators have to make rhetorical decisions about which types of syntactic structures to use when they tell stories. The number and type of syntactic structures used in stories do not affect the grammaticality of the narrators' utterances. Using various types of syntactic structures can suggest the narrator's capability to manipulate and combine information into different discourse forms. Narrators may use various types of syntactic structures in their stories; therefore, it is not easy to predict which types of syntactic structures they

may use in their utterances, especially in spontaneous or semi-spontaneous speech such as the storytelling task in this study. In the present study, the analyses were limited to predetermined types of syntactic structures in Mandarin and English respectively for the sake of conciseness.

Mandarin Syntactic Structures

The analyses of the children's Mandarin syntactic skills were limited to the serial verb construction, sentence linking, the Ba construction, and the Bei construction. The results demonstrated that 6 out of the 22 children (27%) used all four of these types of syntactic structures in their stories. All of the children (100%) told stories using the serial verb construction and sentence linking, 15 of them (68%) used the Ba construction, and 7 (32%) made sentences with the Bei construction.

All the 22 children used the serial verb construction and sentence linking in their stories. This finding was partially consistent with that of Au's (2002) study, which reported that all 100 Cantonese-speaking children in her study used the serial verb construction in their story-retelling task. The possible explanation for the children's frequent use of the serial verb construction and sentence liking is that they can use the serial verb construction and sentence linking to make sentences longer. They may produce utterances carrying more information using the serial verb construction. For example, a child said, "*你知道青蛙在哪裡嗎? (Do you know where the frog is?)*" In addition, sentence linking can help children to relate an utterance to another in a particular sense. For instance, a child said, "*那個男孩起來的時候，就沒看到青蛙* (*When the boy got up, he simply did not see the frog.*)" Thus, all of these children used both the serial verb construction and sentence linking in their stories.

In comparison to the serial verb construction and sentence linking, a smaller number of the children used the Ba and Bei constructions in their stories. One

possible reason for this may be that the Ba and Bei constructions have a unique structure and function (Tse et al., 1991); therefore, the Ba and Bei constructions do not frequently appear in children's naturalistic language samples when compared with the serial verb construction and sentence linking. The Ba construction is usually the preferred and often the only accepted form, if the verb is morphologically complex or modified (Li & Thompson, 1974). The children in the present study were not frequently observed to produce utterances with verbs which were morphologically complex or modified in their Mandarin narratives. Therefore, the Ba construction was not frequently used in the children's utterances.

In addition, the Bei construction was the least used in the children's Mandarin utterances. Children do not fully understand the relation between active and passive constructions until they are at the age of 7 years (Beilin, as cited in Elliot, 1981). The Taiwanese EFL children recruited in the present study were with a mean age of 5;10. Their Bei construction might be still in development. Thus, fewer children made sentences with the Bei construction.

Overall, all the children used the serial verb construction and sentence linking in their Mandarin narratives. However, due to the unique structure and function of the Ba and Bei constructions, not all of them made Ba and Bei sentences.

English Syntactic Structures

The analyses of the children's English syntactic skills focused on noun clauses, clauses connected by conjunctives, passive clauses, and relative clauses. The results demonstrated that none of the 22 Taiwanese EFL children (0%) told English stories with all of these four types of syntactic structures. All the 22 children (100%) connected sentences with conjunctives, 12 (55%) embedded noun clauses into sentences, 4 (18%) used the passive construction to describe the action of story

characters, but none (0%) produced relative clauses.

All the children produced stories with conjunctives. Conjunctives can be conjunctions or conjunctive adverbs (e.g., temporal adverbs), which can signify a relation between two utterances or relate an utterance to another in a particular sense. Children can make their stories more semantically complex in their use of conjunctives. In the present study, the children's use of conjunctives suggested that they were capable of encoding information about time, place, quantity, or manner in their narratives (Gutierrez-Clellen & Hoffstetter, 1994).

Twelve of the 22 children embedded noun clauses into sentences. Eight of them came from the K6 classes at the age of more than 6;3. In comparison to the children from the K6 classes, the other 4 children from the K4 classes at the age of less than 5;6 produced a slightly smaller number of noun clauses. The followings are two examples indicating a noun clause produced by a child from the K4 class in the first example and the other made by a child from the K 6 class in the second example.

The people and the dog see *the fog is not here* (5;5).

He think *let's go climbing up on here* (6;8).

One possible explanation was that the children in the present study had not yet acquired noun clauses. By the age of 3 years, most English-speaking monolingual children begin to produce embedded clauses (Fromkin et al., 2003). Although the Taiwanese EFL children in the present study were older than 3 years old, they possibly lagged behind their English-speaking monolingual peers in acquiring noun clauses. Thus, they produced fewer noun clauses in their stories.

Four of the children incorporated the passive constructions into their stories,

using the auxiliary verb “be” together with the past participle of a verb. Yet, the children’s capabilities to use the passive construction at this stage were doubted for two reasons. First, all 4 of the children who appeared to use the passive construction used a single past participle “broken” in their passive construction; that is, they all produced the passive structure as the auxiliary verb “be” together with the past participle “broken” (e.g., The glass *is broken*). However, “broken” can also function as an adjective in the predicate, like the auxiliary verb “be” together with an adjective (e.g., The bee’s house *is beautiful*.). Therefore, when a child uttered, “The jar is broken,” it was difficult to determine if the word “broken” was used as a past participle or simply as an adjective.

Secondly, there was a high possibility that the Taiwanese EFL children had not yet acquired the passive construction at the mean age 5;10. According to Beilin (as cited in Elliot, 1981), it was not until the age of 7 years that children understood the relation between active and passive constructions. Nevertheless, around age 4 years, children began to notice the syntactic differences between active and passive sentences (Dewart, 1975; Strohner & Nelson, 1974, as cited in Elliot, 1981). Thus, the Taiwanese EFL children in the present study might still have been in the process of acquiring the passive construction.

With respect to the children’s performance on relative clauses, none of the 22 children was observed to embed relative clauses in sentences. This result was partially consistent with that of Ingram (as cited in Ingram, 1989), who found that there was a lack of relative clauses in spontaneous speech of English-speaking children between 2 and 5 years old. He also pointed out that children had acquired relative clauses around age 4;0, but their extensive and stabilized use of relative clauses, which was the characteristic of adult speech, had yet to appear. In light of the phenomenon that ESL

children often lag behind their English-speaking monolingual peers in acquiring complex English syntax, in the present study, the Taiwanese EFL children might have lagged behind their English-speaking monolingual peers in acquiring relative clauses. Therefore, although some of the Taiwanese EFL children in the present study were older than 5 years of age, they might still have difficulty in producing relative clauses.

In the present study, the findings suggested that the Taiwanese EFL children had not fully acquired the use of noun clauses, passive clauses, and relative clauses. Research with elder Mandarin-speaking EFL children may see more instances of children's use of these English syntactic structures.

Cross-Linguistic Influences in Mandarin and English Narratives

It was also interesting to note the possible influence of one language on the other at the morphological and syntactic levels in the Taiwanese EFL children's stories. The analyses clearly showed that the children used English-influenced Mandarin and Mandarin-influenced English morphological and syntactic expressions. Fewer of the children were influenced by English while telling Mandarin stories. Only 2 of the 22 children (9%) used English-influenced Mandarin morphological expressions and 5 (23%) generated English-influenced Mandarin syntactic expressions. However, 14 of the children (64%) made Mandarin-influenced English morphological and syntactic expressions.

It is important to mention that the types of morphological and syntactic expressions possibly influenced by the other language were qualitatively different in each language. In the children's Mandarin stories, two types of morphological expressions were influenced. The first one was strictly the word class unique to Mandarin but not to English, that is, locative particles. One child in the study omitted

a locative particle that should follow a noun phrase to specify a spatial relationship (i.e., *在牠的頭 'on its head'*). In English, instead of a locative particle, a preposition that precedes a noun or noun phrase describes a spatial relationship. The other was the language-specific use of the compound verb, *sheng1qi4* 'anger'. For instance, a child said, "*那個小朋友生氣那隻狗* (*That child angered that dog.*)" When this compound verb is used in Mandarin utterances, it should be divided into two parts. A noun or noun phrase as an object should follow *sheng1*and precede *qi4.*

The influence of English on the Mandarin syntactic expressions of the children showed up primarily in the word order of their narratives. In Mandarin, the typical word order is modifier + modifiee, instead of modifiee + modifier (e.g., a relative clause), which is regular in English. The children in the present study produced English-influenced Mandarin expressions in which the modifiees preceded the modifiers. For example, a child said, "*他們突然看到一個樹木倒的* (*They suddenly saw a tree which collapsed.*)"

The influenced morphological expressions seen in English stories included influences on prepositions and cases as well as erroneous uses of locative particles and pro-drop parameter. In English, an intransitive verb (e.g., look) is often followed by a preposition preceding a noun or noun phrase, while in Mandarin, a verb is not followed by a preposition to specify the relation between the verb and the object. The children in the present study omitted prepositions after the intransitive verbs in their English utterances (e.g., *He are looking a frog.*).

In addition, instead of using different forms to show case relations, Mandarin speakers use word order to express case relations. For example, in the sentence *ta1 da3 ta1* 'He hits him,' the first *ta1*preceding the verb is the subject while the second *ta1* following the verb is the object. The subject and object case of *ta1*in Mandarin

share the same form. One child in the present study used the subject case “he” in the position of the object case (i.e., *The bee don’t want to give he*).

Another cross-linguistic pattern was to keep the position of locative particles (e.g., *li3mian4* ‘inside’) and replace them with nouns, which was observed in a large proportion of the influenced utterances. The pro-drop parameter of Mandarin appeared in a large number of influenced utterances in English as well. When pronouns are pragmatically inferable from the context, they can be omitted in Mandarin but not in English. For example, a child’s utterance shows both instances: “*Fall to the water inside.*”

The Mandarin-influenced English syntactic expressions included the use of the serial verb construction and presentative sentences as well as influences on word order. The serial verb construction and presentative sentences are characteristic of Mandarin syntax. Some of the children used the serial verb construction in their English sentences. That is, they produced English sentences containing two verb phrases juxtaposed without any marker indicating what the relationship was between them (e.g, *The dog and the people come out get the dog.*).

In addition, in the children’s English narratives, presentative sentences with Mandarin syntactic structure were identified. A presentative sentence introduces a noun phrase which names an entity into a discourse (Li & Thompson, 1981). According to their definition, a presentative sentence may have the form of locus + existential verb (e.g., you3 ‘exist’) + presented noun phrase. Some children produced presentative sentences with this form in their English narratives (e.g., *Here have a bee go out.*).

As for the influences on word order, the children produced English sentences in which the negative preceded the auxiliary verb (e.g., I *not can* sleeping.). In Mandarin,

the negative can sometimes be placed before the auxiliary verb but not in English. In addition, some children translated their Mandarin phrases word-for-word into English ones. For instance, a child said, "*這裡有一隻蜜蜂出來 (Here have a bee go out.*).

Overall, in the present study, more Mandarin-influenced English utterances than English-influenced Mandarin utterances were observed in the children's stories. The number of influenced utterances the children made in either language was obviously different. There are two possible explanations for this finding. First, the Taiwanese EFL learners may still be in the process of acquiring second language (L2). Although the children in the present study spoke two languages, they learned Mandarin first at home and then English later at school. Mandarin is the ambient language. Fifteen out of the 22 children (68%) had received English instruction for less than 25 months. They had limited L2 proficiency; thus, they used their first language as a base for understanding or producing the second language. Therefore, the influence of L1 on L2 was most in evidence at this stage, at which learners' output was more productive, but their L2 resources were still limited (Genesee et al., 2004).

The other possible explanation for the difference in the number of influenced utterances the children made in either language may be that telling English stories was a more demanding task for the children. When telling stories, children use their microstructure knowledge of morphology and syntax, their knowledge of how to achieve cohesion and coherence as well as their knowledge of how to represent the content and overall structural organization of the story. Therefore, telling stories is an arduous task, as children must use both their linguistic and cognitive knowledge at the same time. When the EFL children in the present study were requested to tell stories in English, the storytelling task appeared to be more linguistically and cognitively

challenging. It might be inferred from the data that the children had to draw on their knowledge of Mandarin morphology and syntax in order to produce complex and long sentences in English to fully deliver the plots of the story. The reason why the children produced a larger proportion of Mandarin-influenced English expressions may be because they decreased self-monitoring of their English morphology and syntax in a more cognitively-demanding storytelling task.

To sum up, while Mandarin was the children's dominant language, they still generated Mandarin utterances influenced by English. However, this should not be used as strong evidence indicating that the children's native-language proficiency was affected by learning a L2, because the data were limited and only applied to the specific task assigned to the children in the study. This may only indicate that the mental operation executed in the Mandarin narrative task was influenced by English. On the other hand, the children made more Mandarin-influenced English utterances. While they were still in the process of acquiring English, they used Mandarin as a basis for understanding or producing English. Therefore, the Taiwanese EFL children in the present study generated more Mandarin-influenced English utterances than English-influenced Mandarin utterances.

Limitations and Future Directions

Several limitations of this study are noteworthy. For one, the present study limited analyses to only certain types of morphological errors and syntactic structures in Mandarin and English narratives respectively. It should be noted that the present study reported findings of only these particular types of morphological errors and syntactic structures in the children's Mandarin and English narratives. Further research could address other types of morphological errors and syntactic structures

shown in Taiwanese EFL children's narratives in Mandarin and English. Another limitation is that the present study is a preliminary attempt to systematically analyze the possible cross-linguistic influences in the Taiwanese EFL children's narratives. There is a possibility that the children's influenced utterances may result from other factors such as the number of years the L2 has been learned, the authentic contact with L2 or not (Cortês, 2006), and their still-developing language systems. Future research with Mandarin-speaking EFL learners is needed to determine cross-linguistic influences with more specific evidence.

Finally, the small sample size and the inclusion of only one age group of the Taiwanese EFL children did not provide sufficient evidence to chart the process of acquiring morphological and syntactic knowledge. It would be of future interest to include a larger number of Mandarin-speaking EFL preschoolers with a wider age range. This would help understand the developmental process of acquiring morphological and syntactic knowledge. In addition, the present study used SALT to analyze the children's English productivity measures. The analyses of Mandarin productivity measures, however, were carried out manually because SALT cannot analyze Mandarin language samples. Other studies (e.g., Au, 2002) used the CHAT format from the Children's Data Exchange System (CHILDES, MacWhinney, 1994) to analyze children's Mandarin language samples. It would be of particular importance to use other computerized language sample analysis tool to calculate children's language productivity measures in their English as well as Mandarin narratives and to see if the results of language productivity measures are comparable.

Implications

This study is a preliminary attempt to systematically analyze the grammatical

structures and cross-linguistic influences in the Mandarin and English narratives of EFL preschoolers from Mandarin-speaking backgrounds. There are several implications that this work has for understanding Taiwanese EFL preschoolers' morphological and syntactic abilities as well as cross-linguistic influences. First, there is no denying that the Taiwanese EFL preschoolers tended to have language-specific morphological errors and uses of syntactic structures in their Mandarin and English narratives. The children's performance on the measures of linguistic structures might provide teachers with insights into their curriculum design for Mandarin-speaking monolingual or EFL preschoolers. For example, teachers can conduct activities or tasks focusing on the specific word classes which students would tend to have erroneous uses of. In addition, some activities or tasks can target on the syntactic structures which learners might not frequently use in their utterances in order to certify that they are capable of using these structures.

Secondly, the children's influenced utterances at the morphological and syntactic levels might inform teachers about the influences from one language on the other. The children produced cross-linguistic structures with influences predominantly but not exclusively from Mandarin to English. Therefore, teachers should be encouraged to pay attention to students' influenced utterances in order to facilitate their first and second language development. Finally, for early childhood professionals or educators, this research might indicate that a narrative task is an effective activity for eliciting oral production from children even at the preschool level. They can analyze children's narratives to evaluate their language proficiency and multifaceted language abilities.

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APPENDICES

Appendix A

Consent Form for the Kindergarten Administration: Chinese

學校研究同意書

您好！我是江盈潔，就讀於交通大學英語教學研究所。我的碩士論文研究計畫是要了解台灣學齡前及學齡雙語兒童之敘事能力。在獲得學校同意後，我將在貴校進行此研究約二個星期。

此一研究將包括二個階段，首先我會先觀察小朋友在學校的活動與語言使用，並藉此與孩子認識、熟悉我。同時，我會從貴校選出 50 至 60 位小朋友進行此研究，接著將以訪談的方式，提供一本故事書，讓孩子用自己的方式說故事，以了解他的語言敘事能力 (例如：語言使用)。訪談過程將進行兩次 (中、英文各一次，兩次間隔一星期)，每次時間大約二十至三十分鐘，且盡量以不影響孩子的正常學習爲原則。

爲確保參與研究者及貴校的權益及隱私，所有研究紀錄及研究報告將使用識別號碼或匿名來替代真實姓名與校名。只有我、我的指導教授及研究助理能夠調閱本研究資料，包括錄音、錄影帶、訪問內容、或研究筆記；所有的研究資料將列爲機密。日後任何研究錄音帶或錄影帶的播放將侷限於學術或教育目的；所有的錄音帶、錄影帶及所有研究資料將存放於指導教授的實驗室。

參與本研究須徵得學校及家長的同意。貴校及學生能隨時退出本研究，不須負任何形式的責任。

Appendix A (Continued)

Consent Form for the Kindergarten Administration: Chinese

本人及我的指導教授相信此研究能對了解台灣雙語兒童語言發展有極大的助益。身爲英語教學所研究生，我希望我的專業能對貴校有所協助。若有需要，請保留此同意書複本一份。如果貴校對本研究有任何疑問，觀迎與我聯絡，聯絡電話：0919-722-361 或電子郵件：u9141340@yuntech.edu.tw；貴校也可以與我的指導教授林律君老師聯絡，聯絡電話：03-5712121 #52716 或電子郵件 reginelin@mail.nctu.edu.tw

敬祝

事事順心！

江盈潔敬上

江盈潔　交通大學英語教學研究所碩士生

林律君　交通大學英語教學研究所助理教授

****

我已閱讀並充分了解上述訊息，我身爲學校代表，同意江盈潔在

_____ (學校名稱)進行研究。我亦持有此同意書複本。

校方代表簽名：　　日期：

Appendix B

Informed Consent Letter for Parents: Chinese

家長研究通知書

親愛的家長，您好：

我是江盈潔，就讀於交通大學英語教學研究所碩士班。我的碩士論文研究計畫是要了解台灣學齡前及學齡雙語兒童之敘事能力。在獲得您的同意後，您的孩子將可能參與本研究。

如果您同意讓您的孩子參與本研究，我會先觀察小朋友在學校的活動與語言使用，並藉此讓孩子認識、熟悉我。接著將以訪談的方式，提供一本故事書，讓孩子用自己的方式說故事，以了解他的語言敘事能力 (例如：語言使用)。訪談過程將進行兩次 (中、英文各一次，兩次間隔約一星期)，時間大約二十到三十分鐘，且盡量不以影響孩子的正常學習爲原則。

爲確保受試者的權益及隱私，所有研究資料、紀錄及報告將使用辨別號碼或匿名來替代真實姓名。只有我、我的指導教授及研究助理能夠調閱本研究資料，包括錄音、錄影帶、訪問內容或結果；所有的研究資料將列爲機密。

參與本研究須徵得學校及家長的同意。您的孩子能隨時退出本研究，不須負任何形式的責任。本人及我的指導教授相信此一研究能對了解台灣雙語兒童語言發展有極大的助益。如果您對本研究有任何疑問，歡迎與我聯絡：0919-722-361 或電子郵件 u9141340@yuntech.edu.com；您也可以與我的指導教授–交通大學英教所林律君老師聯絡：03-5712121 #52716 或電子郵件 reginelin@mail.nctu.edu.tw

Appendix B (Continued)
Informed Consent Letter for Parents: Chinese

敬祝

闔家平安！

江盈潔敬上

江盈潔 交通大學英語教學研究所碩士生

林律君 交通大學英語教學研究所助理教授

Appendix C
Parental Consent Form: Chinese

家長同意書

我已看過交通大學英語教學研究所碩士生江盈潔之研究通知書，並同意我的孩子參與研究。我明白此研究的目的是爲了解台灣學齡前及學齡兒童故事中的語言使用。

我和我的孩子都了解我們可以隨時退出本研究，不須負任何形式的責任。我明白所有的研究報告、文件與研究結果都會使用匿名來替代我孩子的真實姓名。

我同意在研究觀察與資料收集時，江盈潔可以使用錄音及錄影設備，以供語料謄寫及分析。我明白日後任何錄音、錄影帶的播放將只保留予學術或教育目的。我也了解所有的錄音、錄影帶及所有研究資料將存放於指導教授的研究室；只有研究員、研究助理、其指導教授有權調閱相關資料。

☐ 同意我的孩子參與此項研究（請填寫以下小朋友基本資料）

家長簽名：_____

☐ 不同意我的孩子參與此項研究

小朋友的基本資料：

姓名：_____ 孩子的生日：_____ 性別：☐ 男 ☐ 女

出生地：_____

Appendix C (Continued)
Parental Consent Form: Chinese

孩子學習英語學多久？約_____年 _____月

家中使用的語言（請依使用頻率標號，1代表最頻繁）:

____國語 ____閩南語 ___客家語 ___原住民語 ___英語

___其它：_____（語言）

是否曾居住外國超過三個月以上：☐ 是，_____（國名及時間） ☐ 否

您是否擔心過孩子語言或其它方面的發展？☐ 是，_____（哪方面）☐ 否

＊請在簽名後，讓孩子帶到學校給老師，謝謝您！

Appendix D
Parental Socioeconomic Information

Parental socioeconomic information

	Paternal												Maternal											
Type	*Occupation*					*Education*							*Occupation*					*Education*						
Code	1	2	3	4	5	1	2	3	4	5	6		1	2	3	4	5	1	2	3	4	5	6	
Number	0	0	2	7	13	0	0	0	4	12	6		8	0	2	4	8	0	0	0	4	14	4	
Total	22					22							22					22						

Occupation Codes:

1. Homemaker or the unemployed (e.g., housewives, students, and etc.)
2. Non-technical workers (e.g., street venders, sanitary workers, and etc.)
3. Semi-professional workers (e.g., store owners, assistants, painters, salesmen, and etc.)
4. Professional, middle-rank administrators or workers (e.g., college faculties, doctors, engineers, and etc.)
5: High-level or senior administrators (e.g., employers, general managers, school principals, and etc.)

Education Codes:

1. The illiterate
2. The literate, elementary school level
3. Junior high school level
4. Senior or vocational high school level
5. College or university level
6. Graduate school level or above

Appendix E

List of Transcription and Coding Conventions Based on SALT

Some SALT conventions (Miller & Chapman, 1993) were used to transcribe and code children's narrative samples.

1. Bound morphemes: A slash is used to separate morphemes.

   (i) /s: Plural. Words that end in "s" but represent one entity are not slashed.

   Ex: kitten/s, baby/s, pants

   (ii) /z:Possessive inflection. Do not mark possessive pronouns.

   Ex: dad/z, Mary/z, his, yours

   (iii) /s/z:Plural and possessive.

   Ex: baby/s/z

   (iv) /ed: Past tense. Predicate adjectives are not slashed.

   Ex: love/ed, die/ed, is interested

   (V) /3s: The third person singular verb form. Irregular forms are not slashed.

   Ex: go/3s, tell/3s, does

   (VI) /ing: Verb inflection. The gerund use of the verb form is not slashed.

   Ex: go/ing, run/ing, went shopping

   (VII) /n't, /'t: Negative contractions. Irregular forms are not slashed.

   Ex: can/'t, does/n't, won't

   (VIII) /'ll, /'m, /'d, /'re, /'s, /'ve: Contractible verb forms.

   Ex: I/'ll, I/'m, I/'d, we/'re, he/'s, we/'ve

2. Mazes: Mazes in parentheses are not counted. When a word in a sentence is repeated, the repeated word is parenthesized. When a sentence is repeated more than twice, the third one is parenthesized.

Ex: (The little boy) the little boy saw there was still a dog. The dog barks. The dog barks. (The dog barks.)

3. *: Omissions. It indicates the omission of a word; /*: It means the omission of an obligatory bound morpheme.

   Ex: The dog barks *at him. The car go/*3s fast.

4. [ ]: Codes. Codes are used to mark words or utterances. Codes are placed in brackets [ ] and cannot contain blank spaces.

   (i) [EW:__] is used to mark word-level errors.

   Ex: He were[EW:was] look/ing.

   (ii) [EW] is used to mark extraneous words.

   Ex: The boy is a[EW] sleep/ing.

   (iii) [EU] is used to mark utterance-level errors.

   Ex: They came to stop/ed[EU].

   (iv) [WO] is used to mark utterance with non-standard word order.

   Ex: Fall down the dog and the boy[WO].

Appendix F

Exclusion of Items for Word Count

The following items were excluded for word count and analysis. Words marked by parentheses in the transcript were not counted. The following were adopted from Au's (2002) study.

1. Mazes: False starts, repetitions, reformulations and unfinished attempts were composed of mazes (Miller & Leadholm, as cited in Au, 2002, p. 51).

(i) False starts:

(然後…小…然後…鹿把…)然後鹿趕快跑

(Then…the little…then…the deer took…) then the deer ran in a hurry

(boy ...) the boy drinks much water.

(ii) Repetitions

(小男孩…)小男孩看還有一隻狗狗

(The little boy) the little boy saw there was still a dog.

(And) (and and and) the boy shout.

(iii) Reformulations:

(他…看…)他聞聞看洞裡面

(He…looked) he smelled into the hole.

The boy sees outside (and a ...) and no more.

Appendix F (Continued)
Exclusion of Items for Word Count

(iv) Unfinished attempts:

狗狗就嚇一大跳，(男孩就…然後…然後…)

The little dog was scared a lot. (The boy then…then…)

The boy ran to the frog. (A boy is...)

2. Comments: Comments irrelevant to the narrative were excluded.

(可是這邊我還不懂)

(But I still don't understand this.)

(I don't know.)

3. Habitual Starters: Words that children used habitually sentence-initially were excluded.

(然後)小男孩就說:「噓」。(然後)他們兩個就爬到…那個上面。(然後結果)看到青蛙爸爸青蛙媽媽。

(Then) the little boy said:"Shh." (Then) they two climbed up to that. (Then as a result) saw Father frog and Mother frog.

(And) the boy sleeps and the frog goes. (And) a boy wakes up and sees there is no frog. (And and) the boy looks at his shoes.

Appendix F (Continued)
Exclusion of Items for Word Count

4. Place-fillers: Words which serve to fill a pause or transition were excluded.

然後(呢)，狗狗就趕快跑(呀)

Then (REX) the dog ran (REX) in a hurry.

The boy falls down (uh) because the dog is pushing the tree.