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中文被動句裡語言特性之第一語言習得

L1 Acquisition of Linguistic Properties of the Mandarin Chinese *Bei* Construction

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摘要

本研究採用實證研究方式，探討母語為中文之兒童被字句的語言能力與發展過程，主要分析被字句常見的句法及語意的語言特性，包含長短被動、及物性、不幸性以及有生命性。研究對象為幼稚園大班、小學二年級、小學四年級孩童及一組成人對照組，每組人數皆為二十人。每人皆須完成兩個測驗：第一個測驗為理解測驗，研究對象根據所提供句子的句法和語意完成接受度判斷測驗，第二個測驗為產出測驗，研究對象根據所提供的圖片與提示，說出被字句。

研究發現，如同 Eckman (1977) 標記性理論所提，在中文為母語孩童習得句法和語意語言特性過程中，無標記之語言特性比有標記之語言特性更加容易習得。此外，孩童對於被字句中語言特性整體理解及表達能力是一致的。總的來說，對於中文被動句，幼稚園大班孩童仍需要更多的時間才能擁有與成人一樣的語言能力。對於小二孩童而言，唯獨不及物之被動句仍具挑戰性，其整體表現已趨近於大人。對於小四兒童而言，已完全具備大人的語言能力。因此，本研究結果，中文為母語之孩童於九歲方能完全習得中文被字句。

關鍵詞：被動句、第一語言習得、語言特性、長短被動、及物性、不幸性、有生命性

Abstract

The study aims to explore Chinese children's first acquisition of the Mandarin Chinese *bei* construction from an empirical perspective by examining syntactic properties (i.e., passivization and transitivity) and semantic properties (i.e., adversity and animacy) of the construction. The participants were kindergarteners, Grade 2 and Grade 4 students, and also an adult group, and each age group consisted of twenty subjects. All the participants were asked to complete two tasks in context: a comprehension task (i.e., an acceptability judgement task) and a production task (i.e., a picture-description task).

The results of the present study are as follows: as Eckman (1977) claimed, our Chinese children acquired the syntactic and semantic unmarked properties before the marked ones of the *bei* construction. In addition, Chinese children's comprehension and production of the *bei* construction were consistent. All in all, the KS group needs more time to acquire adult grammar of the *bei* construction. Grade 2 mastered most linguistic features of the construction except for [-trans] of transitivity, and Grade 4 performed almost adult-like. Thus, the result showed that our Chinese children didn't master the *bei* construction until the age of nine.

Keywords: the *bei* construction, first language acquisition, linguistic properties, passivization, transitivity, adversity, animacy

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Chapter One

Introduction

1.1 Motivation

In our daily life, people usually use active sentences to describe events. Sentence (1) is an example of an active sentence, and (2) is its passive counterpart. Shan (2015) states that, in Mandarin Chinese, the morpheme '*bei*' typically appears in a sentence to indicate passivization, which is a transformation that generates a marked syntactic structure.

(1) *Meimei chidiao le wo de mianbao.*
sister eat ASP[1] I POSS[2] bread
'My younger sister ate my bread.'

(2) *Wo de mianbao bei meimei chidiao le.*
I POSS bread *BEI* sister eat ASP
'My bread was eaten by my younger sister.'

Regarding the *bei* construction, some properties have been discussed in the literature (e.g., Chappell 1986, Ting 1998, Chen 2006, Her 2009, Huang et al. 2009, Fan & Kuno 2013, Yang et al. 2015, Liu 2016, Xiao 2016). For example, this construction can be further divided into the long passive (as in 2) and short passive (as in 3) (Ting 1998, Her 2009, Huang et al. 2009, Liu 2016.) The long and short passives

[1] ASP is an abbreviation of an aspectual marker that expresses how an action, event, or state, denoted by a verb, extends over time (Verkuyl et al. 2006).
[2] POSS is an abbreviation form of a possessive marker and used to indicate a relationship of possession in a broad sense (Barker 1992).

can be distinguished from whether there is an agent argument or not.

(3) *Wo de mianbao bei chidiao le.*

I POSS bread *BEI* eat ASP

'*My bread was eaten.'

In addition to the two types of the *bei* construction, there is another syntactic constraint, i.e., the verb in the *bei* construction should be transitive as example in (3) (Ting 1998, Her 2009, Huang et al. 2009). Intransitive verbs are generally prohibited as in (4), where *lai* 'come' is an intransitive verb, which does not have an argument to undergo passivization, thus resulting in the ungrammaticality of the sentence. However, recently, some intransitive verbs seem to be acceptable as shown in (5) (Xiao 2016).

(4) **Pingguo bei lai le.*

apple *BEI* come ASP

'*The apple was come.'

(5) *Baxun laoren turan bei siwang*[3].

eighty-year-old man suddenly *BEI* dead

'An eighty-year-old man was suddenly dead.' (Xiao 2016: 90)

In addition to the above two properties, some semantic features of the *bei* construction have been widely discussed (e.g., Chappell 1986, Chen 2006, Fan & Kuno 2013, Yang et al. 2015, Xiao 2016). For instance, most uses of the Mandarin *bei*

[3] *Bei siwang* 'be dead' shown in a context can mean that somebody was killed by others but was arranged as the person was dead for an unknown reason.

construction express adversity (e.g., Chappell 1986, Fan & Kuno 2013, Xiao 2016). As can be seen in sentence (2), you can imagine that in the context, the sister was hungry and she wanted to eat the bread, but her bread was unfortunately eaten by her sister, yielding an adversity reading. In addition, when a verb denoting a positive meaning used in the *bei* construction, an adversity reading may still be found. For the following sentences express the same event in the active and passive forms. Sentence (6b) carries an adversity reading that somebody was selected as a class leader in an unwanted situation, but this is not the case in (6a).

(6) a. *Tongxue xuan ta wei banzhang.*
classmate select him as class leader
'Classmates selected him as the class leader.'

b. *Ta bei tongxue xuan wei banzhang.*
he *BEI* classmates select as class leader
'He was selected as the class leader.'

Additionally, regarding the semantic properties, animacy of the *bei* NP seems to be constrained. It is easily understandable when the *bei* NP is animate as in (6b). However, as shown in (7), it is less acceptable if the *bei* NP is an inanimate object (Chen 2006, Yang et al. 2015).

(7) ? *Men bei yaoshi dakai le*

door *BEI* key open ASP

'The door was opened by the key.'

The above linguistic properties of the *bei* construction are complicated. They are easy for adults to comprehend and produce; however, they may be challenging for children to acquire these features of the Mandarin Chinese *bei* construction. Thus, it is worth investigating these linguistic properties for children when they acquire the Mandarin *bei* construction.

In order to understand whether children acquire syntactic and semantic properties, we can examine children's language competence through their comprehension and production. According to the definition by Berk (2005), comprehension means how people understand a language; production means how people use the language. Campbell et al. (1982) states that comprehension and production are different and that children may comprehend one language well but produce it poorly. Thus, it is worth exploring the differences between children's competence in comprehension and production of the *bei* construction.

Additionally, in the study of language acquisition, age is an essential issue for researchers to investigate (e.g., Wu 2006, Thatcher 2008, Zeng et al. 2016). For instance, there are some debates about this issue. Some researchers have reported that children are able to master the passive construction by the age of five (Wu 2006,

Thatcher 2008). However, other researchers believe children cannot completely master the passive construction until six (Zeng et al. 2016). In this study, we compared our results with the previous findings.

1.2 Research Questions

To have a deeper understanding of children's acquisition of the Mandarin Chinese *bei* construction, the following four research questions were addressed in the following.

1) Which syntactic linguistic property – 'unmarked or marked[4]' of the *bei* construction is easier for children to acquire?
2) Which semantic linguistic property – 'unmarked or marked' of the *bei* construction is easier for children to acquire?
3) Do children exhibit a similar tendency in the comprehension and production of the *bei* construction?
4) Will children's acquisition of the *bei* construction be improved as their age increases?

The first two questions were to explore whether children's acquisition of the *bei* construction would be influenced by the markedness of syntactic and semantic linguistic properties. The third question was to investigate children's comprehension

[4] Markedness Theory was proposed by Eckman (1977) that A phenomenon A in some language is more marked than B if the presence of A in a language implies the presence of B; but the presence of B does not imply the presence of A.

and production of the *bei* construction. The final question was to find out children's development and their mastery stage of the *bei* construction.

1.3 Significance of the Study

Numerous literature has explored the Mandarin Chinese *bei* construction (e.g., Chappell 1986, Ting 1998, Philipp et al. 2008, Thatcher et al. 2008, Her 2009, Huang et al. 2009, Fan & Kuno 2013, Liu 2016, Xiao 2016, Zeng et al. 2016). However, previous studies mainly adopted a theoretical analysis to account for semantic and syntactic properties of the *bei* construction (e.g., Chapell 1986, Ting 1998, Her 2009, Huang et al. 2009, Fan & Kuno 2013, Liu 2016, Xiao 2016). Although some empirical studies investigated the acquisition of the *bei* construction, they only focused on one single linguistic property (e.g., Philipp et al. 2008, Thatcher et al. 2008, Zeng et al. 2016) or only examined children's language competence through their comprehension or production (Zeng et al. 2016). For example, regarding the acquisition of linguistic properties of the Mandarin Chinese *bei* construction, most researchers discussed verb types (e.g. Thatcher et al. 2008, Zeng et al. 2016); however, they seldom looked into syntactic properties or more than one semantic property. Unlike previous literature that only focused on one semantic aspect, the present study explores both semantic and syntactic properties of the construction: passivization, transitivity, adversity and animacy, to provide a more comprehensive picture of

children's acquisition of the *bei* construction

Regarding the investigation of children's language acquisition, a comprehension task or a production task is not adequate to illustrate children's holistic language competence. For example, Zeng et al. (2016) only explored children's acquisition with a comprehension task. Therefore, in the present study, we conducted a comprehension task and a production task to provide a more holistic view of children's performance.

Besides, the age of the participants chosen in previous literature mainly ranged from three to six. According to previous literature and the results of our pilot study, in the study, the participants we chose were five to ten year olds. Compared to previous literature, the age range of the study is broader; hence, our older age group may represent a different mastery level of the *bei* construction.

1.4 Organization of the Thesis

The organization of the thesis is as follows. Chapter Two introduces theories of some common properties related to the Mandarin Chinese *bei* construction. In addition, it reviews some empirical studies on the acquisition of the passive construction whether in the L1 or L2 perspective. Chapter Three presents the complete research design. Chapter Four shows and discusses the results. Finally, Chapter Five provides the conclusion of the present study.

Chapter Two

Literature Review

In this chapter, some theoretical issues regarding the linguistic properties of the Mandarin Chinese *bei* construction and empirical studies of the construction will be reviewed. In the past decades, many studies (e.g., Chen 2006, Wu 2006, Zeng et al. 2016) focused on syntactic and semantic properties of the Mandarin Chinese *bei* construction. In Section 2.1, the discussion will focus on passivization, transitivity, adversity and animacy of the construction with important arguments highlighted. In Section 2.2, some previous empirical studies of the acquisition of passivization are reviewed. Finally, a brief summary of this chapter is presented in Section 2.3.

2.1 Linguistic Properties of the Mandarin Chinese *Bei* Construction

Some issues of the linguistic properties of the Chinese *bei* construction have been widely explored (e.g., Chappell 1986, Ting 1998, Lin 2004, Huang et al. 2009, Her 2009, Kuo & Zhang 2012, Xiao 2016); for example, verb types in the *bei* construction and the feature of adversity (Chappell 1986, Ferreira 1994, Ting 1998, Chen 2006, Philipp et al. 2008, Stabile 2016, Xiao 2016). In the following sections, we would look into four common properties of the *bei* construction, i.e., passivization, transitivity, adversity and animacy; two of them are syntax-related, and the other two are semantics-related.

2.1.1 Passivization

In Mandarin Chinese, the passive construction can be divided into two forms (Ting 1998, Huang et al. 2009, Her 2009), that is, a long passive as in (1a) and a short passive as in (1b).

(1) a. *Laoshu bei maomi chui le.*
mouse *BEI* cat chase ASP
'The mouse was chased by the cat.' (long passive)

b. *Tangguo bei chih le.*
candy *BEI* eat ASP
'The candy was eaten.' (short passive)

A long passive like (1a) with the patient argument *laoshu* 'mouse' and the agent argument *maomi* 'cat' expresses the meaning that the mouse was unfortunately chased by the cat. The analysis of the long *bei* construction can be seen in (2).

(2) Zhangsan$_i$ *bei* [$_{IP}$ OP$_i$ [$_{IP}$ Lisi da-le t$_i$]]
'Zhangsan was hit by Lisi.' (Huang et al. 2009:120)

According to Her (2009), there are four features of the *bei* construction. First, *bei* selects the first NP, *Zhangsan* as its participant and an IP clause as its complement in (2). Second, the embedded clause seems to be headed by a transitive verb such as *da* 'hit' in (2). Third, the object of the verb is a null operator, which moves from the object position of the embedded clause to the IP-adjoined position. Finally, *bei* in a long passive has its participant controlling the null operator in the complement IP.

This kind of movement is a type of A'-movement.

The Mandarin Chinese short passive as in (1b) does not exhibit an agent NP (Her 2009). Sentence (1b) means that the candy was eaten in an unexpected situation by someone. It is said that the short passive has a different underlying structure from the long passive (Huang et al. 2009). Previous researchers (Ting 1998, Huang et al. 2009, Her 2009) believe the Mandarin short passive involves an A-movement as in (3):

(3) Zhangsan$_i$ *bei* [$_{VP}$ PRO$_i$ [$_{v'}$ da-le t$_i$]]

'*Zhangsan was hit.' (Huang et al. 2009:120)

Her (2009) argues that the Mandarin Chinese short passive different from the long passive has the following features. First, *bei* in the short passive selects the first NP, *Zhangsan* as its participant in (3); the complement for *bei* is a VP not an IP clause. Second, the complement of *bei* must be headed by a transitive verb, but its object is a PRO. What's more, it is assumed that there is an external theta role assigned by the transitive verb and the accusative case is absorbed. Therefore, the PRO moves to the specifier of VP to fulfill the Case Filter and the Extended Projection Principle (EPP). Thus, the Mandarin Chinese short passive involves an A-movement.

For the two types of *bei* sentences in Mandarin Chinese, it is hypothesized in the present study that short passives will be easier to acquire, according to Horgan (1976). He stated that short passives are used more frequently in child language.

2.1.2 Transitivity

Transitivity of the embedded verb in Mandarin Chinese *bei* construction has been a discussed issue for several years (e.g., Her 2009, Verhoeven 2010, Xiao 2016). The Mandarin Chinese *bei* construction is a structure that tends to occur with an experiencer object verb, like *gandong* 'touched' (Verhoeven 2010). Her (2009) analyzed *bei* sentences and found the verbs always transitive. Verhoeven (2010) investigated transitivity of Chinese experiencer object verbs and the results showed that only transitive verbs denoting the affection of the direct object show up in the *bei* construction as shown in (1a) the verb *da* 'hit' is transitive.

However, as pointed out by Her (2009), some cases taken from the Internet show that a transitive verb is not always a requirement for the *bei* construction. In (4), *taotuo* 'escape' is an intransitive verb used in the *bei* construction. Thus, it is too restricted to claim that only transitive verbs can appear in the Mandarin Chinese *bei* construction.

(4) *Pengyou bu shou niao xing, weishi deshihou you bei ta taotuo.*
friend not familiar bird trait feed when again *BEI* it escape
'My friend wasn't familiar with the traits of the bird. At the time of feeding, he again had it escape on him. (Her 2009:429)

What's more, in the recent years, a new type of the *bei* construction '*bei*-XX' has become more and more popular on the Internet and on social media. Xiao (2016)

examined the grammaticalization of the *bei* marker and also analyzed the semantic and syntactic change of the new type of *bei* construction. The most special feature of the new *bei* construction is that the verb following the *bei* marker is intransitive, such as *bei-siwang* 'suicide' and *bei-shihzong* 'disappear'. Moreover, not only verbs but also adjective-like verbs *bei-xiaokang* 'middle-class' and *bei-xingfu* 'happiness' can show up in the *bei* construction. It has been found that the adversity meaning was more prominent in this new type of *bei* construction. Even the verb following the *bei* marker is a positive or neutral verb, it expresses an adverse meaning. For example, *juankuan* 'donate' is an intransitive verb without an adverse meaning; however, *bei-juankuan* means that someone is forced to give money to help others, which has an adversity reading. Another example is that *xiaokang* 'middle-class' is an adjective with a positive meaning that describes someone with a middle-class income. However, *bei-xiaokang* means that someone is asked to say he is in a *xiaokang* economy status regardless of whether it is a fact.

An intransitive verb used in the *bei* construction seems to become more common now (Xiao 2016). Thus, we would like to investigate the property of transitivity to see if it will influence children's acquisition of the *bei* construction.

2.1.3 Adversity

In Mandarin Chinese, *bei* is viewed as a representative passive marker (Ting 1998, Her 2009, Shan 2015). It is believed to have the meaning of 'to undergo' or 'to suffer' (Chappell 1986, Ting 1998, Stabile 2016, Xiao 2016, Ferreira 1994, Chen 2006, Philipp et al. 2008) and the function 'expressing adversity' which expresses something unfortunate happened (Fan & Kuno 2013, Xiao 2016). The patient argument in the *bei* construction is forced to receive an unwanted action from the agent argument. Sentence (5) is an example which expresses adversity of the construction. The predicate *bei re da le* 'hit by someone' contains a verb and a PP where the verb has a patient NP *ta* 'he' and the PP consisting of *bei* and *ren* which has an agent role. The sentence could be read as *ta* was hit by someone in an unwanted situation.

(5) *Ta bei ren da le.*
he *BEI* person hit ASP
'He was hit by someone.' (Fan & Kuno 2013: 208)

Some linguistists argue that the adversity reading has been weakened ever since the 1950s (Lin 2004, Kuo & Zhang 2012). For examples, in (6), *kuli* 'encourage' is a verb denoting a positive meaning and the sentence expresses a non-adversity situation.

(6) *Ta bei laoshi kuli le.*

He *BEI* teacher encourage ASP

'He was encouraged by the teacher.'

In addition, Chappell (1986) explored the adversity reading of Mandarin Chinese formal and colloquial *bei* sentences. It was found that the adversity reading was influenced by European languages, and that seemed only restricted to the written forms, which is regarded as a result of translation. *Bei*, as pointed out by him, can be used in fortunate or neutral contexts, for example, in sentence (7), *biaoyang* 'praise' is a verb denoting a positive meaning.

(7) *Wo zuotian bei laoshi haohaor de biaoyang le.*

I yesterday *BEI* teacher resoundingly praised ASP

'I was praised well by the teacher yesterday.' (Chappell 1986:1028)

Furthermore, Lin (2004) investigated whether the adversity reading is derived from the lexical level or the sentence level. At the lexical level, the results showed that adverse verbs (e.g., *bei zeguai* 'be blamed') were more acceptable than neutral (e.g., *nachu* 'be taken out') and non-adverse verbs (e.g., *bei chengzan* 'be praised); at the sentence level, it was significant for the participants to choose the *bei* sentence in adverse sentential contexts. Thus, she concluded that adversity of *bei* sentences came more likely from the higher (i.e., sentence) level more than the lower (i.e., lexical) level. However, in Kuo and Zhang (2012), two corpora data were compared to provide an overview of the adversity reading of *bei* sentences and to examine the

process of grammaticalization of the passive marker '*bei*.' They found the *bei* construction tended to be used to express an adversity reading.

Above all, from the theoretical background, the adversity reading is a featured property of the Mandarin Chinese *bei* construction (Chappell 1986, Lin 2004, Fan & Kuno 2013) although some studies found that *bei* has undergone grammaticalization and that the adversity meaning is less strong now (Kuo & Zhang 2012). Thus, in the present study, we will explore if children's acquisition of *bei* sentences demonstrates of the adversity.

2.1.4 Animacy

Whether animacy is an influential property of the passive construction has been a discussed issue in recent years (Ferreira 1994, Chen 2006, Philipp et al. 2008). In the passive construction, four animacy combinations of the patient NP and the agent NP can be found as in (8).

(8) a. *Mao bei kou yao le.*
cat *BEI* dog bite ASP
'The cat was bitten by the dog.' (animate patient + animate agent)

b. *Dankao bei meimei chi le.*
cake *BEI* sister eat ASP
'The cake was eaten by my sister.' (inanimate patient+ animate agent)

c. *XiaoMing bei shu datao le tou.*

XiaoMing *BEI* book hit ASP head

'Tom's head was hit by the book.' (animate patient+ inanimate agent)

d. *Chuanghu bei chiu dapo le.*

Window *BEI* ball break ASP

'The window was broken by a ball.' (inanimate patient+ inanimate agent)

An acceptable sentence like (8a) is an example of the *bei* sentence in which both the agent NP *kuo* 'dog' and the patient NP *mao* 'cat' are animate. (8b) is another acceptable sentence where *dankao* 'cake' as the patient NP is inanimate and *meimei* 'sister as the agent NP is animate. The sentence (8c) consists of an animate patient NP *Xiaoming* and an inanimate agent NP *shu* 'book', and sentence (8d) consists of both an inanimate patient NP and an inanimate agent NP. The two sentences may not be as acceptable as (8a) and (8b) because of their inanimate agent NP[1], according to Chen (2006), who found that L2 learners' comprehension and production of animate agent was slightly better than inanimate agent in the Mandarin Chinese *bei* construction. Especially, the English L2 learners had a lot worse performance on the inanimate agent in the *bei* construction than the Japanese speakers and the Chinese natives. She believed L1 transfer had a negative interference on L2 acquisition of the Mandarin Chinese *bei* construction. Agent animacy was found to influence L2 learners' acquisition of the *bei* construction.

[1] It seems to be acceptable when the agent NP presents a natural disaster like *dizhen* 'earthquake', but unacceptable when the agent NP is an artificial object like *qui* 'ball'.

In addition, some researches have reported that different animacy combinations of the patient NP and the agent NP influenced their participants' comprehension and production of the passive construction (e.g., Ferreira 1994, Philipp et al. 2008). For example, Ferreira (1994) found that the participants produced more passive sentences when the two NPs were different in animacy than when the two NPs were both animate. What's more, animacy effect was restricted when there was a theme-experiencer verb, for examples, 'scared', 'worried' and 'challenged'.

Philipp et al. (2008) conducted an ERP study to examine participants' reaction of four different animacy combinations of the patient NP and the agent NP. The results of the NP-*bei*-NP-V structure showed that the agent NP could not evoke any special reaction; however, it was found that when the agent NP was inanimate, the animate and inanimate patient NPs could both evoke reaction, which meant the sentence was thought as a weird structure for the participants. They stated that they had no problem processing an inanimate patient or agent in *bei* sentences, but it is the animacy relation between the patient and the agent that decided the processing difficulty of the sentences.

All the literature showed that animacy could have an effect on acquisition of the passive construction. Chen (2006) found that the inanimate agent NP was more difficult for the L2 learners to acquire the Mandarin Chinese *bei* construction, and

Ferreira (1994) and Philipp et al. (2008) also found the relation of the two NPs was important for the processing of the passive construction. Thus, in the present study, we would explore whether the results regarding animacy of the patient NP and the agent NP of the Mandarin Chinese *bei* construction in L1 acquisition are similar to the previous finding that an animate agent NP is better to acquire than an inanimate agent NP.

2.2 Empirical Studies of the Acquisition of the Passive Construction

In this section, two studies related to first language acquisition of the Mandarin Chinese *bei* construction will be reviewed (Wu 2006, Zeng et al. 2016). In addition, one study on the first language acquisition of the English passive (Thatcher et al. 2008) and one study on the foreign language acquisition of the Mandarin Chinese *bei* construction (Chen 2006) will be discussed.

2.2.1 Wu (2006)

Wu (2006) investigated whether children under the age of three could acquire and produce the non-taught *bei* construction in a rule-based or item-based way. Forty-six Mandarin-speaking children were recruited and further divided into three age groups. There were ten participants in group 1, and the mean age was 2; 8 (ranged from 2; 7 to 3; 3). Fourteen children were put into group 2, and the mean age was 3; 8 (ranged from 3; 5 to 4; 3). Thirteen children were in group 3, and the mean age was 4;

7 (ranged from 4; 1 to 5; 2). An adult group was recruited for the comparison of the results. An elicited task and a comprehension task were designed in this study. Two real transitive actional verbs *da* 'to hit' and *ti* 'to kick' and four novel verbs (*kou*, *mu*, *fi*, *bu*) which do not exist in Mandarin Chinese were included as the materials. There were three phases involved in the production task (training, pretest and formal test.) In the comprehension task, puppets were used to utter correct or incorrect full *bei* sentences in the video, and the participants had to decide which sentence is correct

Although it was claimed that the acquisition of the truncated passive (i.e., the short passive) should occur before the non-truncated passive in previous studies (Horgan 1976), the results showed that the children tended to produce full *bei* constructions with novel verbs. Therefore, the two-to-five-year-olds in the study showed their basic knowledge of the Mandarin Chinese *bei* construction. In the youngest group, although some children could produce the *bei* sentences, there were still four participants not able to produce any nontaught *bei* passive sentences. One possible reason is that the children's acquisition way was item-based; another reason might be that the children were unable to use novel verbs in the bei construction. It could be inferred that the children between two and three years old tended to acquire the *bei* construction in a rule-based way based on the performance of most participants. In group 2, only one child could not produce *bei* sentences, and the child

was the youngest in the group. Thus, the children between three and four years old were believed to acquire the *bei* construction in a rule-based way. In group 3, it was found that the children between four and five years old had mastered the *bei* construction.

Furthermore, it was interesting that group 1 performed better than both group 2 and group 3 on the comprehension task. Two possible explanations were provided: First, the children guessed the answers because there were only two choices in the comprehension task; second, the children might get confused about the sentences which sounded alike in one trial. According to the results of the comprehension task, the children's comprehension was relatively worse than the adults. What's more, she found that the acquisition of the Mandarin Chinese *bei* construction was relatively late than that of the English passive. The comparison of the results between the elicited task and the comprehension task showed that group 1 performed better on the comprehension task than on the production task. Two possible explanations were mentioned earlier. It was usual that comprehension precedes production in language development. Though the children under five years old did not show full competence to master the *bei* construction, they definitely acquired the *bei* construction in a rule-based way according to their overall performance in the production task and the comprehension task. Wu argued that group 1 tended to possess rule-based

performance in the acquisition of the *bei* construction more and that group 2 and group 3 could perform better on the comprehension task if they did not get confused with the experimental sentences. Thus, she concluded that children age from two to five tended to behave in a rule-based way in the acquisition of the *bei* construction as their comprehension and production data showed.

Above all, the older the children were, the better they performed. The children's performance became adult-like as their ages increased. The children under five had knowledge of the *bei* construction but they could not use it freely as the adults. The child groups showed their tendency in a rule-based acquisition way.

2.2.2 Chen (2006)

In this study, Chen (2006) investigated L1 transfer in the acquisition of syntax and semantics by English and Japanese speakers, to see if L1 could be positive transfer or negative transfer and to make a comparison between participants with different mother tongues. Whether children acquired semantics or syntax first was also discussed in the study.

Chen (2006) conducted an experiment including a grammatical judgment task and a picture-description task, and the participants chosen were twenty Japanese and

twenty English adult learners of Chinese at high-beginning or low-intermediate levels. Four properties of the *bei* construction were discussed: agent animacy, sentence reversibility, truncation, and transitivity. Twenty sentences were divided into the grammatical and ungrammatical sentences and were designed for the grammatical judgment task based on the above four features. In addition, four active sentences were designed as distractors. In the picture-description production task, twelve pictures had to be produced in the Chinese proper forms. A pretest was given to see if all the sentences in the task were valid. The participants first finished the picture-description task and later took the grammatical judgment task. The answers were collected, and Repeated Measures and LSD post hoc were employed to analyze the results.

The results of the grammatical judgment showed that L2 speakers responded correctly slightly higher on animate agents than on inanimate agents although no significant difference was found. Furthermore, though the group effect on animate agents was also not significant, but the group effect of inanimate agents was significant that the English speakers seemed to fail to perform an accurate judgment on passive sentences with inanimate agents as the Chinese native group. However, the Japanese group and the native speakers seemed to have similar responses. The results suggested that reversibility should not be a key for the L2 acquisition of the Mandarin

Chinese passive because both the mean scores and the group effect showed no significance. For truncation, the English speakers seemed not to be affected by sentence truncation, and they judged more accurately on the Mandarin Chinese non-truncated passives than the truncated passives statistically. For transitivity, the mean scores on experiential verbs were the lowest, and only the Japanese group and the Chinese native group reached the level of significance. The hierarchy of accuracy between the L2 learners and the native speakers was also compared, but the group effect of verb types was not significant. A comparison among the results of the four properties showed a group effect on animacy and truncation, but not on transitivity and reversibility. The English speakers had less accuracy on animacy and truncation than the native speakers. The Japanese group performed a lot better on truncation than the English group.

In the production task, the English group had similar results as in the grammatical judgment task. They performed better on animate agents than that on inanimate agenta, but the Japanese group produced fewer bei sentences with animate agents than inanimate agents, though no significance was found. Both groups of the L2 learners were statistically behind the native group on animate agents and inanimate agents. The frequency of production between the two L2 learner groups was similar. As the results in the grammatical judgment task, no special findings were found in

reversibility. For truncation, the participants produced more non-truncated sentences than truncated sentences; significance was found in each group. The performance of the two L2 groups was far behind the Chinese native group. For transitivity, the frequency of production from the three groups was totally different. What's more, there was no group effect for each verb type except for the non-prototypical verb; the English speakers did not produce as many sentences with non-prototypical verbs as both the Japanese group and the Chinese native group. Both positive L1 transfer and negative L1 influence were found.

Overall, the results showed that the participants could comprehend much but could not have the similar competence in production. Through the hierarchy of the four properties in the two tasks, the results indicated that reversibility was the easiest property for the L2 learners to acquire, and truncation was the most difficult property. The results also revealed the L2 learner's semantic and syntactic knowledge of the *bei* construction. The L2 learners performed better on the semantic properties than on the syntactic properties, showing that the semantic property should be easier to acquire than the syntactic property.

2.2.3 Thatcher et al. (2008)

Thatcher et al. (2008) adopted a syntactic priming method to investigate whether children had a syntactic representation for the passive at a young age.

Syntactic priming means the tendency among speakers to repeat the syntactic structure of an utterance used in previous discourse and has been both observed in conversational contexts. The participants in the task were primed to produce a syntactic structure only if the structure had been acquired. Some related priming studies (e.g., Huttenlocher 2004) had shown that children produced more passive sentences after hearing a passive structure and that children had an abstract representation for the passive when they were between three to four years old. The study investigated whether children acquired an abstract syntactic representation of the passive construction before the age of five and to examine whether children's early acquisition of the passive construction was constrained by actional verbs.

Twenty pre-school children whose ages ranged from 3:1 to 4:11 were recruited, and their mean age was 4:2. Twenty adults were invited as the native adult group. The SNAP game was adopted to mask the task itself. In the task, two priming structures- active vs. passive and two verb types- actional vs. non-actional were included in four conditions in the experiment. Totally, there were twelve actional verbs for the targets (*shake, wash, tickle, push, kiss, punch, lick, hug, chase, kick, scratch, and pinch*) and respectively twenty-four actional verbs and twenty-four non-actional verbs for the primes.

The participants' answers were recorded into four types: active, passive, minor

errors and truncated passive. There were a total of 312 answers: 49% were active, and 16% were passive. There were also 32% of other answers and 3% strange answers were eliminated. After the ANOVA analysis, the results showed a significant effect of the prime structure that more passives were produced following passive primes than active primes, but that the effect of verb types was not significant. In other words, the childrens produced more passive sentences after passive primes, and the priming effect had nothing to do with verb types. Also, no significant effect between groups was suggested. From the statistical results, Thatcher et al. stated that the participants were influenced by the structure of the prime but not by the verb type of the prime. The children could have an adult-like syntactic representation of the passive construction before the age of five but they were not constrained in an item-based acquisition way. The priming effect occurred in the absence of repeated lexical items between the prime and the target, showing that the representation is abstracted away from an individual verb-based representation by the three-to-four-year-olds. The results indicated that the children's acquisition of the passive construction was earlier than five years old. What's more, the results were consistent with the previous findings that the structural priming of the passive occured at children's early age.

The children's poor performance on non-actional passives from some previous comprehension tasks made the verb type remain still an opening issue. The possible

explanation was the methodological problem that children might feel difficult to depict a non-actional verb, and it might be because of their undeveloped ability to perform the task but not their linguistic competence. In the future, more research is desirable to compare the results of children's experiencer non-actional verbs and the present results.

2.2.4 Zeng et al. (2016)

Zeng et al. (2016) testified the A-chain Deficit Hypothesis which states that children cannot apply and interpret arguments before the age of five. In addition, they explored the adjectival passive and provided more scope for universality of the passive development. They also tested whether children could distinguish two different types of short passives- the event passive and the state passive, and they provided the developmental stages of the Mandarin Chinese passive construction. Some distinctions between these two kinds of short passives are as follows. The adverbial *rengren* 'still' can be used to distinguish them. The state passive often expresses a state brought by an action, which can be transitory, so it can be combined with *rengren* 'still.' However, the event passive expresses an action that principle is irreversible, so *rengren* 'still' cannot modify the verb in event passives. Furthermore, the state passive often expresses 'outcomes'. For example, sentence (9) describes that the blue bee was kicked and was broken, but (10) puts emphasis on the situation

where the blue bee was kicked. Also, *chuyu….chuangtai* 'under which state' can only be filled by as an adjective; thus, it can be used to test whether *beiti* and *beitihuai* can be an adjectival expression or not. Overall, *beiti* is a verbal passive and *beitihuai* is viewed as an adjectival passive in Mandarin Chinese.

(9) *Xiao langfen bei ti huai le.*
little blue bee *BEI* kick broken ASP
'The little blue bee was kicked and broken.'

(10) *Xiao lengfen bei ti le.*
little blue bee *BEI* kick ASP
'The little blue bee was kicked.' (Zeng et al. 2016:3)

They employed a picture-identification task to investigate how children acquired the Mandarin Chinese event passives and state passives, and how they distinguished the two types of passives. They employed the short passive because of the similarity of the verbal and adjectival readings in English short passives. A total of sixty four-to-six-year-olds were recruited to participate in this experiment and were further divided into three age groups. Also, twenty college students were recruited as the adult group. In the experiment, accomplishment verbs and achievement verbs were as the stimuli. Three subtypes of verbs (i.e., creative, destructive and resultive) were designed as the materials. For each verb type, it was placed into eight groups, and twenty-four groups of sentences were yielded. It was further comprised into three sentence types: actives, event passives and state passives. For each sentence group,

four pictures were provided for the participants to choose: a correct agent eventive reading, a correct agent stative reading, an incorrect agent eventive reading, and an incorrect agent stative reading.

After the experiment, the correction rate for each group was measured, and the answers obtained in different conditions were also analyzed. The results showed that children under four had preference of a correct agent stative reading under the event passive condition. The five-year-old children chose a correct agent eventive reading more under the event passive condition; thus, it meant the children around five began to distinguish between the event passive and the state passive. With the age increased, the six-year-old children had no problem distinguishing the two types of passives. A further analysis of different verb types indicated that the four-year-old children performed high accuracy for creative verbs and destructive verbs but low accuracy for achievement verbs. The four-year-old children almost got a correct reading among all the three verb types. The six-year-old children also performed quite well on creative verbs. They concluded that the semantic type of verbs did affect the strength and duration of the bias towards a stative reading.

To summarize, the children at a young age mainly treated event passives as state passives. As their age increased, they could distinguish between the event passive and the state passive. Also, the children's acquisition of the two types of passives has to do

with verb types because the achievement verb and the destructive verb were more likely to represent the outcome of actions and some external effects. Thus, it can be interpreted as a stative reading. The creative verb often represents a long-lasting action; hence, it can be interpreted as an event reading more often. These results showed that the three-year-old children acquired abstract knowledge of the Mandarin Chinese *bei* construction, and the developmental stage was first understanding and mastering the stative passive and later acquiring the eventive passive. The findings also showed that the structures of the event passive and the state passive were very different in Mandarin Chinese. The stative passive does not involve any syntactic movement, and they can be explained as the adjectival passive easily acquired by children at a young age. The eventive passive was more difficult for the children to acquire and master because of syntactic movement involved. Thus, it was concluded that the acquisition was influenced by different aspects of factors, syntactic structure and semantic verb types.

Some limitations were also mentioned in the study. First, the frequency accounts for children's acquisition of the passive can be reconsidered since they have been a long-time issue in these years. Second, the subjects heard all the three types of sentences for each verb, which can be changed to let the participants only hear a sentence for each verb. Third, only English short passives with verb complements

have corresponding adjectival counterparts in Mandarin Chinese, but actional verbs in the Mandrin Chinese passive do not have the similar form of adjectival structure as in the English passive.

The above empirical studies gave us insight into some issues in L1 or L2 acquisition of the passive construction. For example, for the age issue, it was indicated that the children around three began to have the knowledge of the passive construction, and the children could gradually master the construction as their age increased. For instance, the children seemed to acquire semantic properties earlier than syntactic ones of the passive construction, and semantic verb types could be an influential factor for children to acquire the passive construction.

Table 2-1. A summary of empirical studies of the passive construction

	Major Issues	Methods and Findings	Limitations
Wu (2006)	1. rule-based vs. item-based 2. early vs. late acquisition	1. tasks- production and comprehension 2. rule-based way in the early acquisition of the *bei* passive 3. young children (under three) can acquire the *bei* passive	1. Group one randomly chose the answers. 2. The participants were confused with the verbs.
Chen (2006)	1. agent animacy, reversibility, truncation and transitivity 2. L1 transfer 3. semantic first or syntax first	1. a grammatical judgment and a picture- description task 2. difficulty in dealing with inanimate agents and truncated *bei* passives 3. non-reversible and non-truncated passives are easier to acquire 4. semantic before syntactic	

Table 2-1. A summary of empirical studies of the passive construction (Continued)

	Major Issues	Methods and Findings	Limitations
Thatcher et al. (2008)	1. syntactic primes 2. actional vs. non-actional verbs	1. a syntactic priming task 2. more passives response after the passive primes 3. acquisition of passives has nothing to do with the verb types	More categories of verb types should be considered.
Zeng et al. (2016)	1. eventive vs. stative reading 2. different verb types- accomplishment and achievement	1. a picture identification task 2. state passives earlier than event passives 3. verb types affect children's acquisition of passives	1. input frequencies issues 2. English long passives had no adjectival counterpart reading

2.3 Summary of Chapter Two

In this chapter, we have taken a look into the previous literature. In Section 2.1, we have discussed the arguments of semantic and syntactic properties of the Mandarin *bei* construction, i.e. adversity, animacy, long and short passives, and transitivity. In Section 2.2, we have reviewed four empirical studies of the acquisition of the passive construction, i.e., Wu (2006), Chen (2006), Thatcher et al. (2008), and Zeng et al. (2016). In Chapter Three, we will introduce our research design and discuss the results.

Chapter Three

Research Design

In this chapter, the participants and the research design of the current study are introduced. The participants chosen in the study are described in Section 3.1. The methodology and materials designed are illustrated in Section 3.2. The procedure of the experiment is presented in Section 3.3. In Section 3.4, the expected findings of the two tasks are reported.

3.1 Participants

This study aims to explore children's first acquisition of the Mandarin Chinese *bei* construction. In previous literature, it was found that children began to acquire the passive construction in their early age whether in English or in Chinese (Wu 2006, Zeng et al. 2016, Thatcher et al. 2008). They master their comprehension and production of the passive construction with their age increasing. For example, Wu (2006) claimed that only some three-year-old children could produce the *bei* construction. In addition, when we conducted our pilot study, our three-year-olds could not understand the instructions, hence failed to give appropriate answers. Wu (2016) also found that four-year-old children would produce the *bei* construction in a rule-based way. Zeng et al. (2006) showed that four-year-old children were confused with different verb types in the *bei* construction. In our pilot study, children at the age

of four seemed to be able to comprehend the *bei* construction, but they produced fewer *bei* sentences. In addition, whether passives in English (Thatcher et al. 2008) or in Mandarin Chinese (Wu 2006), it was found that children at the age of five became mature enough to produce the passive construction, showing adult-like performance. Our pilot study also obtained similar results; however, some studies have found children would be familiar with the *bei* construction until six (Zeng et al. 2016).

Thus, according to the previous research (Wu 2006, Zeng et al. 2016, Thatcher et al. 2008) and our pilot study, the participants of the present study were five to ten year- olds, so we can have a closer look at children acquisition of the Mandarin Chinese *bei* construction. The participants were divided into three age groups and there was also an adult group, as shown in Table 3-1:

Table 3-1. Participants of the experiment

Group		Age range	Numbers of Participants
Child Groups	Kindergarten students (KS)	5-6	20
	Grade 2	7-8	20
	Grade 4	9-10	20
Adult Group	Chinese natives	25-30	20
Total			80

As shown in Table 3-1, in each group, there were twenty participants recruited for each group. In KS, 20 children from *Beixin* kindergarten were selected. In their daily classes, they only learn Chinese phonetic symbols and some Chinese vocabulary, no instruction about the Mandarin Chinese *bei* construction specifically is given in their daily Chinese classes. Grade 2 and Grade 4 are *Beixin* elementary school students. In their Chinese classes, they learn some vocabulary and Chinese grammar. The *bei* construction is not taught, either. A group of 20 adults with an undergraduate degree were recruited as the adult group for us to compare the performance between adults and children.

3.2 Methodology and Materials

In the study of language acquisition, the methodology can be mainly divided into qualitative and quantitative (Brannen 2005). In the present study, we took a quantitative method rather than a qualitative method because of the following reasons. First, the qualitative method takes a long period of time to deeply explore children's language performance, and we could not make sure whether children will produce the target sentences we want to investigate. Second, with a quantitative method, we could get the answers from the participants with ease through a designed experiment and statistically analyze the results by using objective instructments. To have a deeper insight and more dimensions of the first acquisition of the Mandarin Chinese *bei*

construction, we decided to explore two aspects of the acquisition- comprehension and production. With the utilization of two tasks, we could eliminate the task bias and obtain overall insights of children's language competence.

In previous studies, it was often constrained to discuss a single property whether in L1 or L2 acquisition of the Mandarin Chinese *bei* construction, i.e., animacy (Chen 2006) and verb types (Zeng et al 2016). Thus, in the present study, we discussed more than one property and in the domains of semantics and syntax. The materials were designed according to the four properties (i.e., passivization, transitivity, adversity and animacy) discussed in Chapter Two.

As seen in Table 3-2, there are four properties examined in both a comprehension task and a production task.

Table 3-2. Types of linguistic properties examined in the study

	Property		Example	Total	Question Numbers	
					CT	PT
T1	passivization	T1-1 [+long]	*Xiaohuangya you bei tamen chaoxiao le.* 'The Little Yellow Duck is mocked by them'	2	Q1, Q4	Q7, Q11
		T1-2 [-long]	*Kapain bei natsao le.* 'The card is taken away.'	2	Q5, Q11	Q10, Q13
T2	transitivity	T2-1 [+trans]	*Panpanhu bei women chaohsiang le.* 'The Fat Tiger is woken up by us.'	2	Q8, Q12	Q15, Q16
		T2-2 [-trans]	*Ni you bei fenshou le a.* 'You are broken up again.'	2	Q3, Q5	Q14, Q16
T3	adversity	T3-1 [+ ad]	*Tamen bei dayalang gentzung le.* 'They are followed by the Big Wolf.'	2	Q2, Q10	Q4, Q6
		T3-2 [-ad]	*Juhxiaodi bei gege men kuajiang le.* 'The Youngest Pig is praised by his brothers.'	2	Q6, Q14	Q12, Q15
T4	animacy	T4-1 [+ani]	*Tamen bei dayalang zhuigan ju.* 'They are chased by the Bid Wolf.'	2	Q3, Q13	Q1, Q8
		T4-2 [-ani]	*Dayalang bei pingguo dazhong le.* 'The Big Wolf is hitted by the apple'	2	Q7, Q9	Q2, Q9

Under each property, it was further divided into different sub-types. T1 (passivization) and T2 (transitivity) are of the syntactic type. T1 (passivization) was divided into 1-1 ([+long]) and 1-2 ([-long]). There were two sentences for each

property of T1. T2 (transitivity) was divided into T2-1 (+trans) and T2-2 (-trans); also, there were two sentences for each property. T3 (adversity) and T4 (animacy) are of semantic type. T3 (adversity) was divided into T3-1 ([+ad]) and T3-2 ([-ad]), and there were two test sentences for each property; T4 (animacy) was divided into T4-1 ([+ani]) and T4-2 ([-ani]). For each property, there were two test sentences. The question numbers of the comprehension task (CT) and the production task (PT) are also given.

3.2.1 The Production Task

For production, as Wu (2006), we adopted a picture elicited task to collect children's output of *bei* sentences. Moreover, pictures were presented in a storyline to give the participants more contextual information. The participants needed to produce sentences to make the pictures of the story connected. The storyteller pretended to forget the story plot and the participants had to make a sentence according to the provided picture to help the storyteller to finish the story. Below is an example of the production task as shown in Table 3-3:

Table 3-3. An example of the production task

The participants will see	The participants will hear
Scene1[1] 	*"Jiezhe Dayelang wang Zhuerge de jia chongle guoqu."* 'Next, the Big Wolf dashed against the second older brother's house.'
Scene2 	"Wa." 'Wow.'
Q  2	*"Xiaopengyou, Jiexialai fasheng le sheme shi?"* 'What happened next?'

For the whole story and the test sentences used in the production task, please refer to Appendix A.

3.2.2 The Comprehension Task

When it comes to comprehension, in previous literature, for example, Wu (2006) used two dolls to demonstrate the correct and incorrect *bei* construction to test, but Zeng et al. (2016) utilized another method to test children's comprehension. All these researches provided a *bei* sentence, and the children had to select the correct picture.

[1] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.
[2] The material was taken from: http://www.51yuansu.com/.

Unlike the tasks they designed, we adopted a grammatical judgment task. The picture told a story, and the main character produced a *bei* sentence, and the participants were asked to judge whether the sentence was acceptable. Below is an example of the comprehension task, as shown in Table 3-4:

Table 3-4. An example of the comprehension task

The participants will see	The participants will hear
 [3]	*Xiaolanmao shuo, "Kapian bei nazou le."* 'The Little Blue Cat says, "The card was taken away." '
	*"Xiaopengyou, ni jiuede Xiaolanmao shuo de zhongwen shi dui de ma?"* 'Do you think the Chinese sentence said by the Little Blue Cat is correct?'

For a complete version of the comprehension task, please refer to Appendix B.

[3] These materials were taken from: https://j.17qq.com/ and http://616pic.com/.

3.3 Procedure

3.3.1 Pilot Study

After the test items and tasks were first designed, we conducted the pilot study in July, 2020. The participants of the pilot study were mainly divided into four groups (three-year-olds, four-year-olds, five-year-olds and adults). In each group, there were three participants. The pilot was conducted in a space where the participants were familiar and felt comfortable, and they did the tasks individually.

There are some major findings of the pilot study. First, we found children did not seem to have special difficulty in acquiring semantic and syntactic properties of the *bei* sentences. Thus, we could not find whether semantic or syntactic properties were easier for the children to acquire. Third, although the child groups showed the same tendency as the adult group in the production task, they still produced far fewer than the adults. Fourth, the children acquired more about the Mandarin Chinese *bei* construction as their age increased.

In addition, from the pilot study, we found some inappropriate designed pictures from which we could not elicit the related sentences, so we revised them by emphasizing the character's action. We also found some vocabulary words in the test items were too difficult for the children to understand. Thus, we revised some test sentences with the substitution of easier vocabulary, such as *jinggao xin* 'warning

letter' was substituted with *xiao zhihtiao* 'note'. Finally, the number of the participants in the pilot study was too limited to see a tendency of the difficulty level in semantic and syntactic properties of the *bei* construction. We found more participants in the formal study to derive better outcomes.

3.3.2 Formal Study

In the first step of the formal study, the consent form (Appendix C) was given to the adult participants and the child participants' parents to make sure that they agreed the participants to participate in the study.

In the study, the test items were presented with PPT slides, and we first introduced the instructions of the tasks themselves and there was a training session for the participants to ensure they know how to answer the test contents. In the production task, we gave the participants several scenes and told the participants when to answer the question. In the comprehension task, we provided sentences with syntactic or semantic errors to tell the participants the criterion of the judgment of the sentences. For example, we provide the sentence *Wo der gege mai le yi ge qunzi.* 'My brother bought a skirt.' The sentence is with semantic errors in the quantifier. These sessions proceeded around ten minutes. In the production task, the experimenter was as a storyteller and pretended to forget some contents of the story. The participants were asked to answer the task items of questions with a sentence to help the

experimenter make the story connected and finished. In the comprehension task, because there was no absolutely true or false answer to the questions, the participants only had to answer the task questions following their thoughts. They were asked to circle the "O" as true or "X" as false on the answer sheet to answer the questions

3.3.3 Scoring and Data Analysis

After the experiment finished, we scored the answers given by the participants. For the production task, if the participants' answer contained a related *bei* sentence for the test items, the answer was counted as 1 in the property and 0 in the other property. Otherwise, the answer was counted as 0 in the property and 1 point in the other property. For the example of the question shown in Table 3-4, we designed the answer to be a long passive. The following table presents examples for our scoring criteria (Table 3-5).

Table 3-5. Examples for the scoring criterion of the production task

The expected answer: a long passive	Frequency
Fangzi bei Dayelang zhuangkua le. 'The house was crashed by the Big Wolf.'	1 > [+long] 0 > [-long]
Dayelang zhuangkua le fangzi. 'The Big Wolf crashed the house.'	1 > [-long] 0 > [+long]

For the comprehension task, if the participants chose "O" as their answers, they were counted as 1 point in the property and 0 in the other property. If the participants' answers were "X", they were counted as 0 point in the property and 1 point in the other property. For example, regarding the feature of [+ad] of adversity, if the

participants chose “O”, it was counted as 1 point in [+ad] of adversity; otherwise, if the participants chose “X”, it was counted as 1 point in [-ad] of adversity. Later, we counted the frequency of each property. Furthermore, the Chi-squared test was adopted to see whether significant differences were shown in the results.

The following figure (Figure 3-1) presents the whole procedure of the experiment, including three stages- before the experiment, during the experiment and after the experiment.

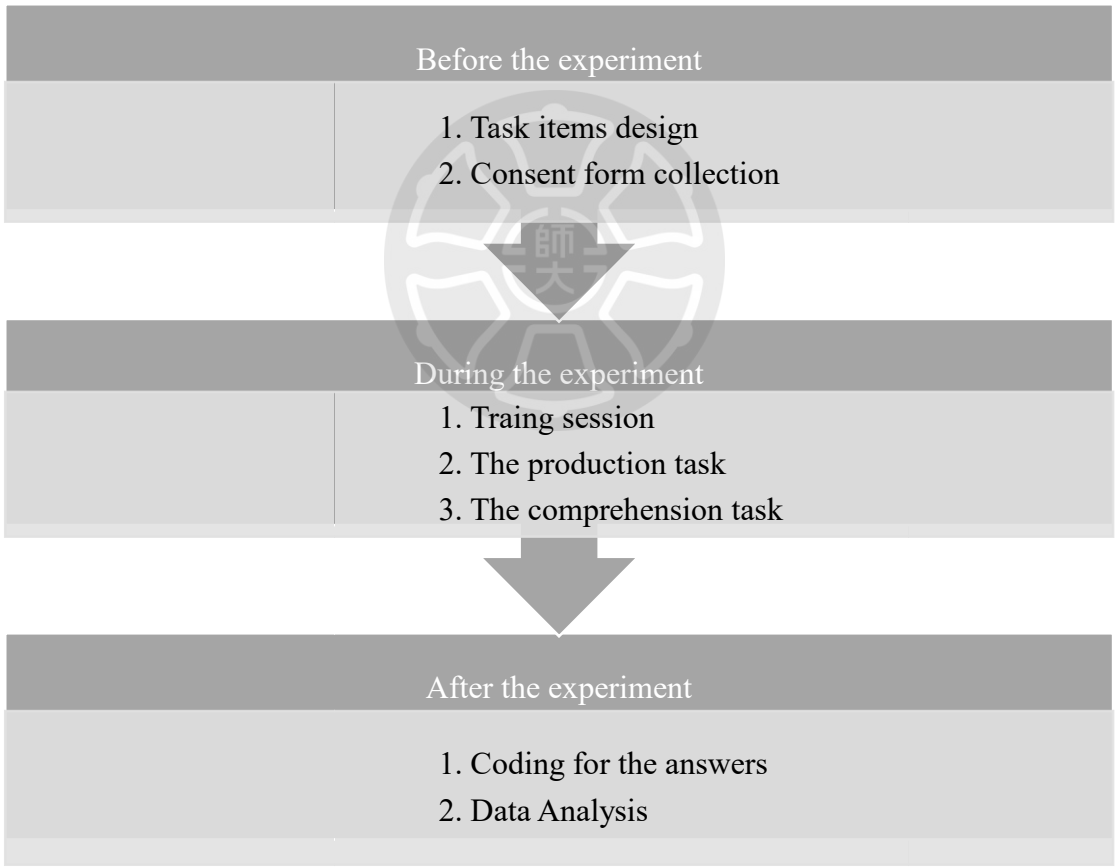

Figure 3-1. Procedure of the experiment

3.4 Summary of Chapter Three

This chapter introduces the methods of the present study, including the participants, the test items designed for the comprehension and production task of the Mandarin *bei* construction, the procedures of the experiment and the data analysis. KS, Grade 2 and Grade 4 were recruited as experimental groups, and one adult group was recruited as a control group. Twenty participants were consisted in each group. Two tasks were conducted. In the production task, the participants had to produce one sentence according to the picture provided. In the comprehension task, the participants judged the sentences provided in context according to their own acceptable level. The participants' answers were statistically analyzed to explore Chinese children's first acquisition of the *bei* construction.

Chapter Four

Results And Discussion

In this chapter, the results and discussion of the four research questions are presented. The marked and unmarked linguistic properties of syntax and semantics are examined in Sections 4.1 and 4.2, respectively. The participants' comprehension and production of *bei*-sentences are compared in Section 4.3, and the age effect is discussed in Section 4.4. Finally, the findings of the present study will be summarized in Section 4.5.

4.1 Syntactic Properties： Marked vs. Unmarked

This section discusses the marked and unmarked syntactic properties of the *bei* construction, including passivization and transitivity. Section 4.1.1 provides the overall findings, and Section 4.1.2 discusses the results.

4.1.1 Overall Findings

Table 4-1 presents the participants' performance on the marked or unmarked syntactic properties (i.e., passivization and transitivity) of the *bei* construction.

Table 4-1. Participants' overall performance on passivization and transitivity

Property / Group	Passivization					Transitivity				
	[+long]		[-long]		*p*-value	[+trans]		[-trans]		*p*-value
	f	%	*f*	%		*f*	%	*f*	%	
KS	81	51	79	49	0.8744	87	54	73	47	0.2684
Grade 2	84	53	76	47	0.5271	88	55	72	45	0.2059
Grade 4	93	58	67	42	**0.0398**	115	72	45	28	**3.13e-08**
Adults	97	61	63	39	**0.0071**	115	72	45	28	**3.13e-08**

As can be seen in Table 4-1, regarding passivization, it was found that all the participants performed better on the unmarked property ([+long]). As for transitivity, it was also shown that the participants all did better on the unmarked property ([+trans]). The tendency was obvious for Grade 4 and the adults regarding the features ([+long] vs. [-long]) of passivization (Grade 4: $*p<.05$, Adults: $**p<.01$), and those ([+trans] vs. [-trans]) of transitivity (Grade 4: $***p<.001$, Adults: $***p<.001$). Now, let us turn to the unmarked properties. Table 4-2 shows that although the results did not reach a significant difference ($p>.05$), all the groups performed better on transitivity than on passivization (KS: 87>81, Grade 2: 88>84, Grade 4: 115>93, Adults: 115>97). As for the marked properties, the results were different in that all the participants performed better on passivization than on transitivity (KS: 79>73, Grade 2: 76>72, Grade 4: 67>45, Adults: 63>45), and only Grade 4 reached a significant difference ($*p<.05$).

Table 4-2. Within-type between-group comparisons on passivization and transitivity

Property / Group	Passivization		Transitivity	
	[+long]	[-long]	[+trans]	[-trans]
KS vs. Grade 2	0.8153	0.8096	0.9397	0.9338
KS vs. Grade 4	0.3630	0.3206	**0.0488**	**0.0099**
KS vs. Adults	0.2304	0.1794	**0.0488**	**0.0099**
Grade 2 vs. Grade 4	0.4987	0.4517	0.0580	**0.0125**
Grade 2 vs. Adults	0.3339	0.2702	0.0580	**0.0125**
Grade 4 vs. Adults	0.7717	0.7257	1	1

When it comes to the performance of different age groups, regarding passivization, the performance of each age group did not show a significant difference in the features [+long] and [-long] (p>.05). As for transitivity, Grade 4 and the adults performed similarly on both the features [+trans] and [-trans] (p>.05). With respect to [+trans] and [-trans], KS was statistically behind Grade 4 and the adults ([+trans]: KS vs. Grade 4: *p<.05; KS vs. Adults: *p<.05; [-trans]: KS vs. Grade 4: **p<.01; KS vs. Adults: **p<.01). Regarding [-trans], Grade 2 were also statistically behind Grade 4 and the adults (Grade 2 vs. Grade 4: *p<.05; Grade 2 vs. Adults: *p<.05).

4.1.2 Discussion

In Section 4.1, we have discussed the difficulty level of the marked and unmarked syntactic properties of the *bei* construction. According to the Markedness Theory (Eckman 1977), the linguistic property which is universal and often-used is unmarked; in contrast, the one which is rare is marked. In the present study, we found that regardless of whether it is passivization or transitivity, the participants all

performed better on the unmarked syntactic properties. This findings is consistent with the claim that unmarked features are acquired before marked ones (Eckman 1977). For passivization, the results indicated that all the age groups tended to perform better on long passives, and this was quite different from the finding of Horgan (1976) in that few long passives but more truncated passives were found in children's spontaneous speech. The reason might be attributed to the task effect. Horgan (1976) observed children's free oral production, but the present study adopted a picture-elicited task which was easier to elicit full passives. Furthermore, our participants performed similarly as the Chinese group in Chen (2006). For transitivity, our participants as a whole performed better on transitive verbs than on intransitive verbs. In previous literature (e.g., Her 2009, Verhoeven 2010), most *bei* sentences of the Chinese passive construction contain transitive verbs although intransitive verbs have been used as a new form on the Internet (Her 2009, Xiao 2016).

After we compared the overall performance of the unmarked properties (i.e., passivization and transitivity), we found all the participants performed better on transitivity, showing that transitivity which is a categorical concept is easier to acquire. However, in order to fully acquire the *bei* construction, the sentential-level linguistic competence of two kinds of movements (A'-movement for the long passive and A-movement for the short passive) should also be equipped. As shown in previous

studies (e.g., Tomasello & Brooks 1998, Hyams & Orfitelli 2015), it was found that children began to produce multiple-word utterances around the age of two. Tomasello & Brooks (1998) further stated that children at this stage started to acquire abstract knowledge of transitivity. However, Hyams & Orfitelli (2015) stated that children at the stage of age two did not have any knowledge of syntactic movement. It was not until the ages of six to seven that syntactic movement, such as verbal passives emerged. Thus, the performance of our participants was consistent with what has been found in previous literature (e.g., Tomasello & Brooks 1998, Hyams & Orfitelli 2015).

Regarding the age issue, first, although all the child groups performed better on the unmarked than on marked properties, only Grade 4 and the adults showed a significant difference in response to the unmarked properties. The participants of Grade 2 only slightly performed better on the unmarked than on the marked properties. Second, after comparing the unmarked properties in different age groups, as for passivization, the feature [+long] was easier to acquire so that the children and the adults performed equally well; regarding transitivity, the feature [+trans] was still challenging for KS and their performance lay behind the adults, but the other three age groups had similar performance. Third, the comparison of the marked properties showed that with regard to passivization, the feature [-long] was not difficult to

acquire since the child participants and the adults performed equally well; however for transitivity, the feature [-trans] seemed very difficult in that both KS and Grade 2 were far from Grade 4 and the adults in response to *bei* sentences.

4.2 Semantic Properties：Marked vs. Unmarked

This section discusses the marked and unmarked semantic properties of the *bei* construction, including adversity and animacy. Section 4.2.1 provides the overall findings, Section 4.2.2 takes a second look at the results, and Section 4.2.3 discusses the overall performance.

4.2.1 Overall Findings

The participants' performance on the marked and unmarked semantic properties of adversity and animacy is shown in Table 4-3.

Table 4-3. Participants' overall performance on adversity and animacy

Property / Group	Adversity					Animacy				
	[+ad]		[-ad]		*p*-value	[+ani]		[-ani]		*p*-value
	f	%	*f*	%		*f*	%	*f*	%	
KS	59	37	101	63	**0.0008**	77	48	83	52	0.6353
Grade 2	100	63	60	37	**0.0015**	72	45	88	55	0.2059
Grade 4	77	48	83	52	0.6353	92	58	68	42	0.0577
Adults	100	63	60	37	**0.0015**	69	43	91	57	0.0819

As can be seen in Table 4-3, regarding adversity, it was found that Grade 2 and the adults performed better on the unmarked property ([+ad]); however, KS and Grade 2 did better on the marked property ([-ad]). As for animacy, it was also found that only Grade 4 did a better job on the unmarked property ([+ani]); however, KS, Grade

2 and the adults did better on [-ani]. Table 4-3 also shows that Grade 2 and the adults significantly performed better on the feature [+ad] to [-ad] (Grade 2: **p<.01, Adults: **p<.01) of adversity and that KS significantly did better on the feature [-ad] to [+ad] (KS: ***p<.001). As for animacy, in each age group, no significant difference in the feature [+ani] or [-ani] was found (p>.05). Now, let us turn to the unmarked properties. As can be seen in Table 4-4, although the results did not reach a significant difference (p>.05), KS and Grade 4 had better performance on animacy than on adversity (KS: 77>59, Grade 4: 92>77) and that Grade 2 and the adults performed better on adversity and animacy (Grade 2: 100>72, *p<.05, Adults: 100>69, *p<.05). As for the marked properties, Table 4-4 shows that although the results did not reach a significant difference (p>.05), KS and Grade 4 had better performance on adversity than on animacy (KS: 101>83, Grade 4: 83>68). Grade 2 and the adults performed better on animacy and on adversity (Grade 2: 88>60, *p<.05, Adults: 91>60, *p<.05).

Table 4-4. Within-type between-group comparisons on adversity and animacy

Property / Group	Adversity		Animacy	
	[+ad]	[-ad]	[+ani]	[-ani]
KS vs. Grade 2	**0.0011**	**0.0012**	0.6821	0.7022
KS vs. Grade 4	0.1227	0.1845	0.2486	0.2222
KS vs. Adults	**0.0011**	**0.0012**	0.5079	0.5442
Grade 2 vs. Grade 4	0.0838	0.0544	0.1183	0.1093
Grade 2 vs. Adults	1	1	0.8005	0.8226
Grade 4 vs. Adults	0.0838	0.0544	0.0698	0.0681

When it comes to the performance of different age groups, as for adversity, KS performed significantly differently from Grade 2 and the adults in both the feature

[+ad] (KS vs. Grade 2: **p<.01, KS vs. Adults: **p<.01) and [-ad] (KS vs. Grade 2: **p<.01, KS vs. Adults: **p<.01.) Concerning animacy, all the age groups did not show a statistical difference in both features (i.e., [+ani] and [-ani]) (p>.05).

4.2.2 A Second Look at the Participants' Overall Performance

Considering the unexpected results of the participants' performance on adversity and on animacy as shown in 4.2.1, we found it important to see whether there were any cases or test items in the comprehension and production tasks that needed to be reconsidered. After checking the raw data and the participants' recordings, two test items of adversity in the comprehension task and two test items of animacy in the production task were deleted for reanalysis because they were slightly ambiguous.

For the comprehension of adversity, the participants' mean scores on Q10 (*Maozhi chayidian bei Xiaohuangya yongdiao*. 'The hat was almost dropped by the Little Yellow Duck.') were far lower than their scores on Q2 (*Xiaohuangya you bei tamen quxiao le.* 'The Little Yellow Duck was mocked by them again.') One possible explanation might be that the adversity was not strong enough in Q10 as it was in Q2 for the participants. In order to balance the results, we also deleted one of the questions of the feature [-ad] for reanalysis. In addition Q6 and Q14 were similar in construction and meaning (Q6: *Xiaohuangya bei wo sho henbang.* 'The Little Yellow Duck was praised by me.', Q14: *Ta hui bei PiaoLiangYa shuo henbang*. 'He will be

praised by the Beautiful Duck.' and the scores for the participants were also similar; therefore, we deleted Q6 for reanalysis. Thus, for reanalysis of adversity, Q6 and Q10 were deleted.

For the production of animacy, regarding the feature [+ani], we found the adult participants produced fewer *bei* sentences in answering Q1 (*Daocaowu bei Zhudage gaihao le.* 'The straw house was built by the Brother Pig.') than in answering Q8 (*Tamen bei dayalang zhuigan ju.*'They were chased by the Big Wolf.') This might result from the interference of adversity. Q1 was in a [-ad] context; in contrast, Q18 was in a [+ad] context. As discussed in the previous section, adversity could be an influential linguistic property, and the *bei* construction selects a context with adversity more than with non-adversity. Thus, Q1 was deleted for the reanalysis. As for the feature [-ani], the number of *bei* sentences produced in answering Q2 and Q6 (Q2: *Fengzi bei feng chuidao.* 'The house was blown over by the wind.' Q9: *Dayelang bei pingguo diuzhong le.* 'The Big Wolf was hit by the apple.') was similar. Due to the consideration that children might consider the apple as an animate object since it can be personified; thus, we deleted Q9 for reanalysis. Finally, Q1 and Q9 were deleted for reanalysis of animacy.

Reanalysis of the participants' overall performance on adversity and on animacy is shown in Table 4-5.

Table 4-5. Reanalysis of the participants' overall performance on adversity and animacy

Property / Group	Adversity					Animacy				
	[+ad]		[-ad]		*p*-value	[+ani]		[-ani]		*p*-value
	f	%	*f*	%		*f*	%	*f*	%	
KS	52	43	68	57	0.1441	61	51	59	49	0.8551
Grade2	82	68	38	32	**5.904e-05**	69	58	61	42	0.4829
Grade4	72	60	50	40	**0.0464**	73	61	47	39	**0.0176**
Adults	76	63	46	37	**0.0066**	55	46	65	54	0.3613

As can be seen in Table 4-5, for adversity, it was found that Grade 2, Grade 4 and the adults performed better on the unmarked property ([+ad]) (Grade 2: 82>38, ***p<.001, Grade 4: 72>50, *p< .05, Adults: 76>46, **p<.01); however, KS showed their slight better performance on the marked property ([-ad]) (KS: 68>52). As for animacy, although the adults still slightly preferred the marked property ([-ani]) (Adults: 65>55), KS and Grade 2 slightly performed better on the unmarked property ([+ani]) (KS: 61>59, Grade 2: 69>61),and only Grade 4 significantly performed better on ([+ani]) (*p< .05).

Now, let us turn to the unmarked properties. From Table 4-5, although the differences did not reach significant level (p>.05), the results showed that KS and Grade 4 had better performance on animacy than on adversity (KS: 61>52, Grade 4: 73>72) and that although there was no significant difference (p>.05), Grade 2 and the adults performed better on adversity and animacy (Grade 2: 82>69, Adults: 76>55). As for the marked properties, Table 4-5 shows although the results did not reach a significant difference (p>.05), KS and Grade 4 performed better on adversity than on

animacy (KS: 68>59, Grade 4: 50>47) and that Grade 2 and the adults performed better on animacy and on adversity (Grade 2: 61>38, *p<.05, Adults: 65>46).

Table 4-6. Reanalysis of within-type between-group comparisons on adversity and animacy

Property / Group	Adversity		Animacy	
	[+ad]	[-ad]	[+ani]	[-ani]
KS vs. Grade 2	**0.0095**	**0.0035**	0.4829	0.8551
KS vs. Grade 4	0.0724	0.0975	0.2999	0.2438
KS vs. Adults	**0.0338**	**0.0393**	0.5775	0.5900
Grade 2 vs. Grade 4	0.4203	0.2008	0.7371	0.1779
Grade 2 vs. Adults	0.6331	0.3827	0.2087	0.7216
Grade 4 vs. Adults	0.7423	0.6831	0.1116	0.0889

Regarding the performance of the different age groups, for adversity, KS' performance was significantly different from that of Grade 2 and the adults on both [+ad] (KS vs. Grade 2: **p<.01, KS vs. Adults: *p<.05) and [-ad] (KS vs. Grade 2: **p<.01, KS vs. Adults: *p<.05.) Regarding animacy, all the age groups did not show any significant difference in either property (p>.05).

4.2.3 Discussion

Section 4.2 investigated the participants' performance on semantic linguistic properties (i.e., adversity and animacy). We first compared the marked and unmarked properties. For adversity, Grade 2 and the adults showed a different tendency from KS and Grade 4. Grade 2 and the adults showed a statistical difference in response to the feature [+ad] (**p<.01); however, KS statistically performed better on the feature [-ad] (***p<.001) and Grade 4 was slightly better on [-ad]. However, when we had a

detailed look at the performance in the participants' comprehension and production in isolation, it was found that in the performance of production, all the participants produced [+ad] *bei* sentences more than [-ad] *bei* sentences. Thus, the participants' different overall performance might result from their comprehension. To avoid the task effect, we deleted two sentences for reanalyzing. In their overall performance, Grade 2, Grade 4 and the adults all showed better performance on the feature [+ad]. The results were consistent with the findings of previous literature (e.g., Chappell 1986, Ting 1998, Fan & Kuno 2013, Xiao 2016), *bei* was with the adverse meaning 'to suffer'; thus, the Mandarin *bei* construction was more frequently used in an adversity context.

For animacy, it seemed that KS, Grade 2 and the adults performed better on the feature [-ani], and Grade 4 did better on the feature [+ani]; however, the statistics did not reach a significance (p>.05). When we explored more into their production, it was found all the participants slightly preferred the feature [-ani] to [+ani] of animacy which was different from the results of previous literature (Chen 2006, Philipp et al. 2008). For the unexpected results, we deleted two test items in the production task. The new result showed that KS, Grade 2 and Grade 4 performed slightly better on the feature [+ad] although the adults still did slightly better on feature [-ani]. The new results were more similar to previous findings (Chen 2006, Philipp et al. 2008) that

the acquisition of the feature [+ani] was earlier than the feature [-ani]. We still considered the original unexpected results could be attributed to the task effect. In Chen's (2006) comprehension task and Philipp's (2008) ERP study, the experiments were conducted without providing the participants' pictures. In contrast with theirs, both the comprehension and production tasks in our present study were provided with pictures and the agent roles were highlighted. Thus, the issue of animacy could be explored more by designing different tasks in future research.

To discuss whether adversity or animacy was acquired first, we took a look at the participants' overall performance on adversity and animacy. KS and Grade 4 performed better on animacy, but Grade 2 and the adults performed better on adversity. From the results, it was not straightforward to claim which property was easier to acquire. Thus, due to the participants' similar performance on animacy, we might conclude that animacy was easier than adversity. Animacy was related to word-level knowledge. As reported by Wright et al. (2015), children at the age of four could master the basic categories of animacy, and five-year-old children could acquire a more difficult level of animacy. Lin (2004) indicated that adversity came from a sentential context; thus, adversity at a higher (i.e., sentential level) was more difficult to acquire than animacy, which is at a lower (i.e., word-level) level.

Let us turn to the markedness issue in syntax and semantics again. For the young

children (KS and Grade 2), it was found that they did not perform better on any syntactic and semantic (unmarked or marked) properties of the *bei* construction. Thus, we could infer that young children acquired syntactic and semantic knowledge almost at the same time. The results were consistent with those of Skeide & Friederici (2014) that young children acquired and processed syntactic and semantic knowledge together, and they gradually separated their acquisition and procession by the age of ten. When we looked into the older group (i.e., Grade 4) and the adults, they statistically preferred the syntactic unmarked properties (***p<.001) and did not accept the syntactic marked properties the most. On the other hand, the participants' performance on semantic unmarked and marked properties was similar. All in all, the acquisition order could be seen as follows: syntax [-] > semantics [-] > semantics [+] > syntax [+]. As the markedness theory, unmarked linguistic properties should be easier to acquire than marked ones (e.g., Eckman 1977, Sobkowiak 1993, Carnie 2005, Zhang & Tian 2015). Thus, we summarized that children first acquired syntactic linguistic properties as shown in previous studies (e.g., Tseng 1997, Collins 2016); however, when they gradually grew up, semantic linguistic properties would be easier to acquire than syntactic ones as the adult participants' did in Chen (2006).

4.3 Comprehension vs. Production

The section shows and discusses whether the participants showed the same

tendency toward the linguistic properties of *bei* sentences in their comprehension and production. Section 4.3.1 reports the findings, and Section 4.3.2 discusses the results.

4.3.1 Overall Findings

Table 4-7 presents the participants' comprehension and production of passivization and transitivity.

Table 4-7. Participants' comprehension and production of passivization and transitivity

Property / Group	Passivization									
	[+long]				*p*-value	[-long]				*p*-value
	com		pro			com		pro		
	f	%	*f*	%		*f*	%	*f*	%	
KS	40	50	41	51	0.9115	40	50	39	49	0.9104
Grade2	44	55	40	50	0.6625	36	45	40	50	0.6464
Grade4	51	64	42	53	0.3507	29	36	38	47	0.2715
Adults	53	66	44	55	0.3608	27	34	36	45	0.2568
Property / Group	Transitivity									
	[+trans]				*p*-value	[-trans]				*p*-value
	com		pro			com		pro		
	f	%	*f*	%		*f*	%	*f*	%	
KS	41	51	46	58	0.5919	39	49	34	42	0.5584
Grade2	38	48	50	63	0.2000	42	52	30	37	0.1573
Grade4	62	78	53	66	0.4013	18	22	27	34	0.1797
Adults	61	76	54	68	0.5139	19	24	26	32	0.2967

As shown in Table 4-7, for the feature [+long] of passivization, although the results did not reach a significant difference (p>.05), Grade 2, Grade 4 and the adults performed better on comprehension than on production (Grade 2: 44>40, Grade 4: 51>42, Adults: 53>44); in contrast, KS performed slightly better on production than on comprehension (41>40). As for the feature [-long] of passivization, Grade 2, Grade 4 and the adults produced it than comprehended it (Grade 2: 40>36, Grade 4: 38>29, Adults: 36>27) but was not significantly different (p>.05); however, KS had better

comprehension than production (40>39). As for the feature [+trans] of transitivity, KS and Grade 2 performed slightly better on their production than on comprehension (KS: 46>41, Grade 2: 50>38), but Grade 4 and the adults were better on their comprehension than onproduction (Grade 4: 62>53, Adults: 61>54). As for the feature [-trans] of transitivity, KS and Grade 2 had slightly better performance on comprehension than production (KS: 39>34, Grade 2: 42>30), but Grade 4 and the adults produced the [-trans] *bei* sentences better than comrehended them (Grade 4: 27>18, Adults: 26>19). All in all, all the participants' performance on comprehension and production was similar both in passivization and transitivity.

Table 4-8. Within-type between-group *p*-values of comprehension and production of passivization and transitivity

Property / Group	Passivization				Transitivity			
	[+long]		[-long]		[+trans]		[-trans]	
	com	pro	com	pro	com	pro	com	pro
KS vs. Grade 2	0.6625	0.9115	0.6464	0.9104	0.7357	0.6831	0.7389	0.6171
KS vs. Grade 4	0.2489	0.9126	0.1854	0.9093	**0.0385**	0.4817	**0.0054**	0.3701
KS vs. Adults	0.1776	0.7449	0.1122	0.729	**0.0476**	0.4237	**0.0086**	0.3017
Grade 2 vs. Grade 4	0.4726	0.8252	0.3853	0.8208	**0.0164**	0.7675	**0.0019**	0.6911
Grade 2 vs. Adults	0.3608	0.6625	0.2568	0.6464	**0.0208**	0.6949	**0.0032**	0.5930
Grade 4 vs. Adults	0.8445	0.8292	0.7893	0.8162	0.9282	0.9230	0.8694	0.8907

As shown in Table 4-8, we compared the participants' performance on comprehension and production of passivization and transitivity. For passivization, no significant difference was found in either age group (p>.05). For transitivity, it was found that KS and Grade 2 performed significantly worse than Grade 4 and the adults in [+trans] (KS vs. Grade 4: *p<.05, KS vs. Adults: *p<.05, Grade 2 vs. Grade 4: *p<.05, Grade 2 vs. Adults: *p<.05) and [-trans] (KS vs. Grade 4: **p<.01, KS vs. Adults: **p<.01, Grade 2 vs. Grade 4: **p<.01, Grade 2 vs. Adults: **p<.01).

Table 4-9. Participants' comprehension and production of adversity and animacy

Property / Group	Adversity									
	[+ad]				*p*-value	[-ad]				*p*-value
	com		pro			com		pro		
	f	%	*f*	%		*f*	%	*f*	%	
KS	17	21	42	53	**0.0011**	63	79	38	47	**0.0128**
Grade2	55	69	45	56	0.3173	25	31	35	44	0.1967
Grade4	31	39	46	58	0.0873	49	61	34	42	0.0996
Adults	50	63	50	63	1	30	37	30	37	1
Property / Group	Animacy									
	[+ani]				*p*-value	[-ani]				*p*-value
	com		pro			com		pro		
	f	%	*f*	%		*f*	%	*f*	%	
KS	40	50	37	46	0.7324	40	50	43	54	0.7419
Grade2	36	45	36	45	1	44	55	44	55	1
Grade4	56	70	36	45	**0.0370**	24	30	44	55	**0.0152**
Adults	37	46	32	40	0.5472	43	54	48	60	0.6002

Table 4-9 shows the participants' comprehension and production of adversity and animacy. For the feature [+ad] of adversity, Grade 2 performed better on

comprehension than on production (55>45) but was not significantly different (p>.05). The adults performed similarly on their comprehension and production tasks (50= 50). KS and Grade 4 performed better on production than on comprehension (KS: 42>17, **p<.01, Grade 4: 46>31). As for the feature [-ad] of adversity, Grade 2 performed better on production than on comprehension (35>25) but the difference was not significant (p>.05). The adults showed similar performance on comprehension and production of the [-ad] *bei* construction (30= 30). KS performed better on comprehension than on production (KS: 63>38, *p<.05, Grade 4: 49>34). For the feature [+ani] of animacy, KS, Grade 4 and the adults comprehended it better than produced it (KS: 40>37, Grade 4: 56>36,*p<.05, Adults: 37>32). Grade 2 performed similarly on the comprehension and production tasks (36=36). As for [-ani] of animacy, KS, Grade 4 and the adults had better performance on production than on comprehension (KS: 43>40, Grade 4: 44>24, *p<.05, Adults: 48>43). Grade 2 performed similarly on their comprehension and production (36=36). All in all, for adversity, only KS performed significantly differently on their comprehension and production; regarding animacy, only the comprehension of Grade 4 was significantly different from their production.

Table 4-10. Within-type between-group *p*-values on comprehension and production of adversity and animacy

Property / Group	Adversity				Animacy			
	[+ad]		[-ad]		[+ani]		[-ani]	
	com	pro	com	pro	com	pro	com	pro
KS vs. Grade 2	**7.522e-06**	0.7477	**5.104e-05**	0.7255	0.6464	0.9068	0.6625	0.9146
KS vs. Grade 4	**0.0433**	0.6698	0.1859	0.6374	0.1025	0.9068	**0.0455**	0.9146
KS vs. Adults	**5.54e-05**	0.6698	**0.0006**	0.3320	0.7324	0.5472	0.7419	0.6002
Grade 2 vs. Grade 4	**0.0096**	0.9165	**0.0052**	0.9042	**0.0370**	1	**0.0152**	1
Grade 2 vs. Adults	0.6256	0.6080	0.5002	0.5351	0.9068	0.6276	0.9146	0.6767
Grade 4 vs. Adults	**0.0347**	0.6831	**0.0325**	0.6171	**0.0488**	0.6276	**0.0202**	0.6767

Table 4-10 shows the comparisons between the participants' comprehension and production by different age groups. For adversity, it was found that the participants only performed significantly differently on their comprehension but not on their production of the feature [+ad] and [-ad]. KS' performance lay behind that of the other three groups (KS vs. Grade 2: ***p<.001, KS vs. Grade 4: *p<.05, KS vs. Adults: ***p<.001) on the feature [+ad] of adversity, and they were also statistically behind Grade 2 and Adults (KS vs. Grade 2: ***p<.001, KS vs. Adults: ***p<.001) with respect to the feature [-ad] of adversity. The performance of Grade 4 was also behind that of Grade 2 (**p<.01) and the adults (*p<.05) on both the feature [+ad] and [-ad] of adversity. For animacy, it was found that all the age groups performed

similarly on production (p>.05). For the comprehension of [+ani] of animacy, Grade 4 performed far beyond Grade 2 and the adults on the features (i.e., [+ani] and [-ani]) (*p<.05); in contrast, Grade 4 was significantly different from the other three age groups (*p<.05).

4.3.2 Discussion

Comprehension and production are different language competence (Campbell et al. 1982, Berk 2005). Thus, we compared the participants' comprehension and production to see if there were any similarities and differences in their performance. For passivization and transitivity, all the participants' comprehension and production did not show significant different results (p>.05). Thus, basically, the results indicated that the children's and the adults' comprehension and production were consistent. However, some differences in the participants' comprehension and production of adversity and animacy were found. For adversity, KS' comprehension and production were significantly different. For example, regarding the feature [+ad] of adversity, their comprehension was statistically behind their production (**p<.01), showing that although children seemed not to accept the [+ad] *bei* construction numerously, in their real production, they still produced [+ad] *bei* sentences. However, KS produced fewer [-ad] *bei* sentences, but they still well comprehended the [-ad] *bei* construction. For animacy, all the participants' showed similar results in that their comprehension was

better than production of the feature [+ani], and that their production was better than comprehension on the feature [-ani]. Grade 4 performed better on comprehension than on production in [+ani] (*p<.05).The significant differences might come from the interference of non-adversity in the production of Q1. For the feature [-ani] of animacy, their production was far beyond their comprehension (*p<.05), which might result from the task effect that [-ani] *bei* sentences were more likely to be elicited from the picture-description task.

We also compared the comprehension and production by different age groups. We first looked at passivization and transitivity. Compared to transitivity, passivization was relatively challenging for both the child groups and the adult group; thus, no significant difference was shown in their comprehension and production by either age group. As for transitivity, all the participants' production showed similar results, but in the comprehension task, both KS and Grade 2 still needed more time to reach adult-like competence. Now let us look at adversity and animacy. Compared with adversity, animacy seemed to be easier for the participants to acquire. All the participants performed similarly in their production. However, they all produced [-ani] *bei* sentences more, the results were different from previous findings in the literature (Chen 2006, Philipp et al. 2008). What's more, in their comprehension, although all the participants comprehended the feature [+ani] more than [-ani], only Grade 4 was

beyond the other groups. It can be inferred that the young children's comprehension and production might be under the effect of personification (Norton 1989). During the children's process of growth, storybooks, like *the Giving Tree* (Silverstein 1964) often played an important role, in which inanimate entities are often given power or life by authors. Thus, children might consider the [-ani] agents as [+ani] ones so that KS and Grade 2 participants' performance was behind that of Grade 4. It was mature enough for Grade 4 to differentiate the feature [+ani] and [-ani] so that they performed significantly better on [+ani]. As for the adults, we may conclude that they could accept both the features [ani] and [-ani] so that their results showed a significant difference from the result of Grade 4.

4.4 Age Effects

In language acquisition, the age issue has been widely discussed (e.g., Wu 2006, Thatcher et al. 2008, Zeng et al. 2016). Children's language competence develops as their age increases. In the present study, we also compared children's and the adults' language behavior to explore children's language acquisition of the Mandarin *bei* construction, as shown in Table 4-11:

Table 4-11. Children's Development of Properties in the *Bei* Construction

Group	Linguistic Competence
KS	● Having adult-like performance on unmarked and marked of passivization, but not on those of transitivity ● Having adult-like performance on unmarked and marked of animacy, but not on those of adversity ● Having adult-like production of all syntactic and semantic properties of *bei* sentences, but only adult-like comprehension of passivization and animacy
Grade 2	● Having adult-like performance on unmarked and marked of passivization, but only partially on those of transitivity ● Having adult-like performance on unmarked and marked of animacy and adversity ● Having adult-like production of all syntactic and semantic properties of *bei* sentences, but only adult-like comprehension of passivization, animacy, and adversity
Grade 4	● Having adult-like performance on unmarked and marked of passivization and transitivity ● Having adult-like performance on unmarked and marked of animacy and adversity ● Having adult-like production of all syntactic and semantic properties of *bei* sentences, but only adult-like comprehension of passivization, transitivity, and animacy

For KS, they had acquired the Mandarin *bei* construction, and had some adult-like language competence. For the syntactic unmarked and marked properties, KS showed adult-like performance on passivization but not on transitivity. As for semantic unmarked and marked properties, they performed adult-like on animacy but not on adversity. For KS' production, they showed a totally adult-like performance on passivization, transitivity, adversity, and animacy. As for KS' comprehension, they only performed adult-like on passivization and animacy. Thus, we could conclude that

KS only had partial adult-like language competence in the syntactic and semantic properties of the *bei* construction. At this age, their performance on production of the *bei* construction was better than on their comprehension. As discussed in Clark and Hecht (1983), our children understood more than they produced.

Grade 2 showed some differences from KS and had more adult-like language behavior. For the unmarked and marked syntactic properties, they showed fully adult-like performance on passivization and partially adult-like performance on transitivity. The marked property of transitivity seemed to be challenging for Grade 2. As for the semantic unmarked and marked properties, Grade 2 was fully adult-like. With regard to production, they were totally adult-like in passivization, transitivity, adversity and animacy. As for comprehension, they performed similarly on passivization, adversity and animacy, but they still comprehended slightly worse on transitivity than the adults. To sum up, Grade 2 was mature with respect to the knowledge of semantic properties of the *bei* construction and unmarked syntactic properties,but they still needed more time to acquire the syntactic [-trans] *bei* construction.

For Grade 4, although their comprehension of adversity was not as what we have expected to be adult-like, we can see that they had mastered the Mandarin *bei* construction according to their overall performance.

Some previous studies showed children at the age of five could comprehend and produce the *bei* construction as the adults (Wu 2006, Thatcher et al. 2008). However, in the present study, KS children (mean age: 5:6) still showed some none adult language behavior. Some scholars argued that children could not master the *bei* construction until the age of six (Zeng et al. 2016). However, we found that Grade 2 (mean age 7:7) had not mastered the marked property of transitivity, and that Grade 4 children (mean age: 9:6) performed totally adult-like. Thus, our children would master the *bei* construction at the age of nine.

4.5 Summary of Chapter Four

In this chapter, we have found that the Mandarin Chinese *bei* construction is complicated. For both the syntactic and semantic properties, our children acquired the unmarked properties before the marked properties. For comprehension and production, our children performed equally well on syntactic properties, but their performance on semantic properties was not consistent. To sum up, our children were found to gradually acquire the linguistic properties of the *bei* construction as their age increased.

Chapter Five

Conclusion

In this chapter, the conclusion of the present study is reported. Section 5.1 summarizes the major findings of the study, and Section 5.2 discusses some limitations of the current research and provides some suggestions for future researchers.

5.1 Major Findings of the Present Study

The present study examined four linguistic properties (i.e., passivization, transitivity, adversity and animacy) of the Mandarin Chinese *bei* construction by Chinese children. Below are the major findings of the present study.

The first research question investigated syntactic marked and unmarked properties of the *bei* construction. According to the participants' performance, we concluded that the unmarked properties of passivization and transitivity were acquired before the marked ones (Eckman 1977). What's more, transitivity, which is related to word-level knowledge (Tomasello & Brooks1998), was indeed acquired earlier than passivization, which involves sentential-level knowledge (Hyams & Orfitelli 2015).

The second research question addressed the semantic marked and unmarked issue. After the consideration of task effects, the reanalysis of adversity and animacy showed that the participants as a whole also acquired the unmarked properties of

adversity and animacy before the marked ones. Furthermore, animacy, which involves word-level knowledge (Wright et al. 2015), was acquired before adversity, which is about the interpretation of the entire sentence (i.e., sentential-level knowledge) (Lin 2004).

The third research question examined Chinese children's comprehension and production of the *bei* construction. For syntactic properties such as passivization and transitivity, it was found that our child groups performed on the comprehension and production tasks equally well. However, the participants' comprehension and production of the semantic properties of the *bei* construction were inconsistent. For example, regarding adversity, only the KS group was inconsistent in their comprehension and production in that they produced the [+ad] sentences of the *bei* construction well, but they were less likely to accept this type of sentences. As for animacy, only Grade 4 performed significantly differently on their comprehension and production tasks: They could well differentiate the feature [+ani] from [-ani] of animacy.

Finally, the age issue was also discussed in the study. Overall, KS' performance was still behind the adults'. They need more time to acquire adult-like grammar of the *bei* construction. Grade 2 was almost adult-like except for the challenging feature [-trans] of transitivity, and the performance of Grade 4 has reached the adult-like level.

Thus, it was concluded that our children didn't master the *bei* construction until the age of nine.

5.2 Limitations of the Study and Suggestions for Future Research

Some limitations have been recognized in the present study, and some suggestions for future research should be taken into consideration.

First, with regard to animacy, all the child participants produced more inanimate than animate agents; however, they accepted more animate than inanimate agents. This unexpected result was different from what has been reported in previous literature (Chen 2006, Philipp et al. 2008) in that animate agents were not consistently easier to acquire than inanimate ones for our participants. One possible explanation might be that our production task (a picture-description task) included inanimate agents such as *fong* 'wind' and *pingguo* 'apple,' which are often the personified characters of children's storybooks. For future research, we may avoid this type of inanimate agents in the test items or design an imitation task instead.

Second, in the present study, we designed sixteen items in each task, which was challenging for the KS group to finish in twenty minutes. For future research, we may give this group of child participants more time to complete the task, since they have relatively a shorter attention span, and since they tend to be influenced by some external factors as well.

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Appendix A

Test Items for the Production Task

我昨天看了一本故事書，想要跟你們分享，但是我有些內容不小心忘記了，想請你們幫我把故事接下去，我忘記的地方我會說:「接下來發生了什麼事?」，你們就要幫我接下去好嗎?接下來我們就開始吧!

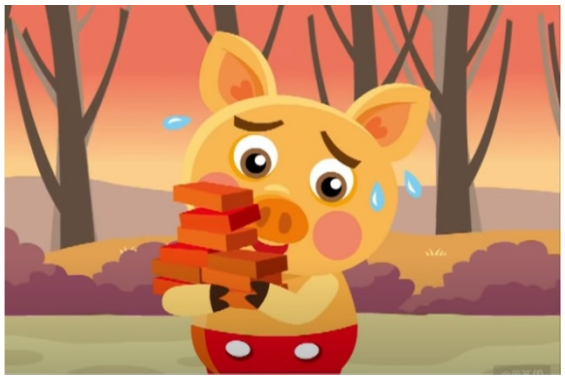




豬大哥 | 豬二哥 | 豬小弟 | 大野狼 | 小老虎

圖一[1]		有一個家住著三隻小豬跟豬媽媽，這天，豬媽媽告訴三隻小豬:你們長大了，自己出去蓋房子生活吧。
圖二		豬大哥決定用稻草蓋房子，因為這樣很快就可以蓋好了。

[1] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.

圖三[2]		
	Q1:很快地…，接下來發生了什麼事?	Animacy:inanimate patient+ animate agent (稻草屋被豬大哥蓋好了。)
圖四[3]		豬小弟知道哥哥的屋子蓋好了，就來看看，豬小弟說:哥哥，你也知道我們村裡風很大，你不怕….
	Q2: 豬小弟說:哥哥，你也知道我們村裡風很大，你不怕… 接下來發生了什麼事?	Animacy:inanimate patient+ inanimate agent(房子被風吹倒。)
圖五		豬小弟接著跑去看看豬二哥蓋得怎樣，豬小弟看到豬二哥用木頭在蓋房子，心裡想著，這樣房子不會很脆弱嘛!
圖六		豬小弟決定要用磚頭來蓋房子，他慢慢地搬著磚頭回去。

[2] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.
[3] These materials were taken from: https://j.17qq.com/.

圖七	 Q3:接下來發生了什麼事?	花了很長的時間， Transitivity: transitive verb (房子終於被我蓋好了。)
圖八	 Q4:接下來發生了什麼事?	隔天，三隻小豬跟以前一樣早上就去工作，下午回家時，… Adversity: +adversity (他們被大野狼跟蹤了。)
圖九		大野狼先跑到了豬大哥家，大野狼敲敲門說:快出來我要把你吃掉，豬大哥很害怕不敢開門。
圖十[4]		大野狼朝著豬大哥的家狠狠地吹了一口氣， Transitivity: transitive verb (房子被大野狼吹倒了。)

[4] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.
These materials were taken from: https://j.17qq.com/.

		
	Q5:接下來發生了什麼事?	
圖十一[5]		豬大哥好不容易逃了出來，但他還是努力地跑著， Adversity: +adversity (他被大野狼追趕著。)
	Q6:你看看，發生了什麼事?	
圖十二		豬大哥很快地到跑到豬二哥家，但是大野狼一下也跟過來了，大野狼說:出來吧!我要把你們吃掉。
圖十三		接著，大野狼往豬二哥的家衝了過去。

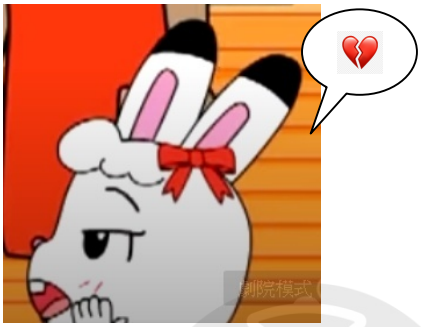
[5] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.

圖十四[6]		
	Q7:接下來發生了什麼事?	Long & short passive : long passive(木頭屋被大野狼撞倒了。)
圖十五		豬大哥跟豬二哥從家裡逃出來後跑得很快，
	Q8:你看看，發生了什麼事?	Animacy:animate patient+ animate agent (他們被大野狼追趕著。)
圖十六		豬小弟發現兩個哥哥被大野狼追著，就拿手邊的蘋果丟大野狼。
圖十七		豬小弟好厲害喔，丟得很準...
	Q9:你看看，發生了什麼事?	Animacy:animate patient+ inanimate agent (大野狼被蘋果丟中了。)

[6] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.

圖十八[7]		大野狼想用同一招，撞倒房子。
圖十九	 Q10:你看看，發生了什麼事?	沒想到磚頭房子太硬了，大野狼一撞下去， Long & short passive : short passive(他的骨頭被撞斷了。)
圖二十	 Q11: 然後就這樣，你看看，發生了什麼事?	然後就這樣， Long & short passive : long passive (大野狼被三隻小豬嚇跑了。)
圖二十一	 Q12:所以，接下來發生了什麼事?	晚上，三隻小豬很開心的吃大餐，因為豬小弟今天做得很好 Adversity: -adversity (豬小弟被哥哥們誇獎了。)

[7] These pictures were taken from: https://www.youtube.com/watch?v=a6HyQ7m_sUU.

圖二十二[8]	 Q13: 他以為...，接下來發生了什麼事?	原來這隻大野狼是新任小老虎村長派去考考三隻小豬的，小老虎覺得他做得很棒，就把這件事分享給女友棋棋，他以為... Long & short passive : short passive(他會被誇獎。)
圖二十三	 Q14: 於是...，接下來發生了什麼事?	沒想到女友棋棋覺得小老虎很壞，把三隻小豬嚇到了，於是 Transitivity: intransitive verb (小老虎被分手了。)
圖二十四[9]	 Q15: 心裡覺得...接下來發生了什麼事?	但小老虎覺得沒關係，他還是可以當村長，村民一定會喜歡他，他走上了村長台，心裡覺得... Adversity: -adversity (他會被村民說很棒)
圖二十五	 Q16: 於是，接下來發生了什麼事?	但沒想到村民們也覺得他很壞，決定不要這個村長，於是... Transitivity: intransitive verb (老虎村長被下台了。)

[8] These pictures were taken from: https://www.youtube.com/watch?v=3N_RhEr0trQ
[9] These pictures were taken from: https://www.youtube.com/watch?v=kA51QulsL8I

Appendix B

Test Sentences for the Comprehension Task

小藍貓剛從外星球搬到這個地球上不久，他暫時住在小黃鴨家，他不太會說中文。小黃鴨有兩個好朋友叫小狐狸跟胖胖虎，他們常常一起玩耍。今天小藍貓跟小黃鴨出去玩又發生了一連串故事，小藍貓說了一些話，但小藍貓的中文很不好，我不知道小藍貓說的中文正不正確，小朋友，我知道你很聰明，你可以幫我聽聽看小藍貓得說的中文是對的嗎，對的話就幫我舉 “O”，錯的話就幫我舉 “X”。

小藍貓

小黃鴨

小狐狸

胖胖虎

圖一[10]		前幾天早上小黃鴨又跑去找小狐狸跟胖胖虎玩了，小藍貓也一起跟了上去在旁邊偷偷看著小黃鴨。小藍貓聽到他們在笑小黃鴨考試又考零分了。
	Q1:小藍貓就說:「唉!小黃鴨又被他們嘲笑了。」小朋友，你們覺得小藍貓說的中文是對的嗎?	Long & short passive : long passive
圖二		後來他們到玩具店買了角落生物的卡片，小黃鴨抽到了大家最想要的卡片，但小黃鴨不知道那是很厲害的卡片，很難過，小狐狸就跟小黃鴨交換卡片。

[10] These materials were taken from: https://j.17qq.com/.

圖三	 Q2:小藍貓就說:「小黃鴨又被他們取笑了」，小朋友，你們覺得小藍貓說的中文是對的嗎?	結果換完了卡片，小狐狸跟胖胖虎就開始偷笑了。 Adversity: + adversity
圖四	 Q3:小藍貓說:「特別的衣服被小黃鴨穿上了」小朋友，你們覺得小藍貓說的中文是對的嗎?	回家後小藍貓拿了一個特別的衣服，那個衣服可以把自己變不見，於是小藍貓陪著小黃鴨要去拿回卡片，在小藍貓的陪伴下… Animacy:inanimate patient+ animate agent
圖五	 Q4:小藍貓說：「他很擔心被小狐狸看見」，小朋友，你們覺得小藍貓說得中文是對的嗎?	但小黃鴨還是很害怕，很快就跑了出來。… 但小藍貓跟小黃鴨說了加油，小藍貓決定再進去一次。 Long & short passive : long passive
圖六[11]	 Q5: 小藍貓說：「卡片被拿走了」，小朋友，你們覺得小藍貓說的中文是對的嗎?	小黃鴨變成了小狐狸的媽媽，說要幫小狐狸保護卡片，小黃鴨就成功拿到卡片了。 Long & short passive : short passive

[11] These materials were taken from: http://616pic.com/.

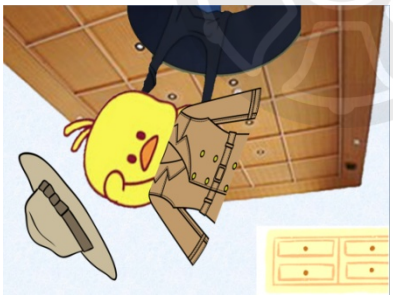
圖七		小狐狸只能呆呆地看著小黃鴨離開。

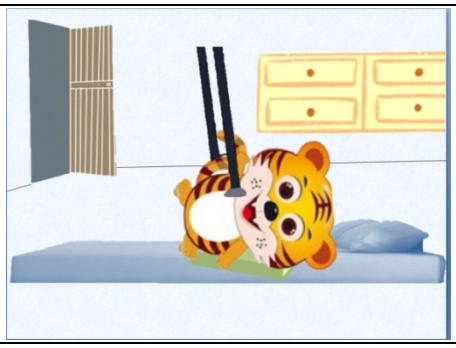
圖八		回家路上兩人很開心。
	Q6: 小藍貓說:「小黃鴨被我說很棒。」小朋友，你們覺得小藍貓說的中文是對的嗎?	Adversity: - adversity

圖九[12]		隔天小狐狸哭著跟胖胖虎說他卡片被拿走了，這個時候，胖胖虎也收到了小紙條，紙條上寫著小黃鴨很快就會來拿走上次胖胖虎搶走的故事書。
	Q7:小藍貓說：「小紙條被風吹到了胖胖虎手上」小朋友，你們覺得小藍貓說的中文是對的嗎?	Animacy:inanimate patient+ inanimate agent

圖十		這次小黃鴨假扮成了胖胖虎的妹妹。

[12] These materials were taken from: http://616pic.com/ and https://zh.pngtree.com/.

圖十一	 Q8:小藍貓說：「唉!小黃鴨被胖胖虎發現了」，小朋友，你們覺得小藍貓說的中文是對的嗎?	可是胖胖虎一下就發現是小黃鴨。 Transitivity: transitive verb
圖十二	 Q9: 小藍貓說：「小黃鴨被繩子吊掛著」小朋友，你們覺得小藍貓說的是對的嗎?	後來小黃鴨決定偷偷跑到胖胖虎家裡。 Animacy:animate patient+ inanimate agent
圖十三	 Q10: 小藍貓說「帽子差一點被小黃鴨用掉」小朋友，你們覺得小藍貓說的中文是對的嗎?	小黃鴨一不小心，沒拿好他的帽子。 Adversity: +adversity
圖十四	 Q11: 小藍貓說：「我被嚇到了。」小朋友，你們覺得小藍貓說得中文是對的嗎?	這時一隻老鼠從屋頂上經過。 Long & short passive : short passive

圖十五[13]		後來小藍貓跟小黃鴨進到了胖胖虎家，他們想要用繩子吊起胖胖虎，就可以拿到故事書了。

圖十六		結果一不小心…. Transitivity: transitive verb
	Q12: 小藍貓說：「胖胖虎被我們吵醒了」，小朋友，你們覺得小藍貓說的中文是對的嗎?	

圖十七[14]		胖胖虎很生氣想要揍小藍貓跟小黃鴨。於是…
	Q13: 小藍貓說：「小黃鴨被我帶出來了」，小朋友，你們覺得小藍貓說的中文是對的嗎?	Animacy:animate patient+ animate agent

圖十八		胖胖虎很生氣，隨手拿了一本書丟小黃鴨。

[13] These materials were taken from: https://www.crazy-tutorial.com/and https://zh.pngtree.com/.
[14] These materials were taken from: https://www.youtube.com/watch?v=0MpjzMVuzJY.

圖十九		結果剛好是小黃鴨被搶走的那本故事書。
圖二十[15]	 Q14: 小藍貓說：「我也以為他會被漂亮鴨說很棒。」小朋友，你們覺得小藍貓說的中文是對的嗎?	小黃鴨覺得自己很厲害，跑去跟漂亮鴨分享這件事。 Adversity: -adversity
圖二十一	 Q15: 小藍貓說：「小黃鴨被分開了。」，小朋友，你們覺得小藍貓說的中文是對的嗎?	結果漂亮鴨聽了很生氣，轉頭就走。 Transitivity: intransitive verb
圖二十二	 Q16: 小藍貓對著小黃鴨說：「你又被分手了啊」，小朋友，你們覺得小藍貓說的中文是對的嗎?	小黃鴨哭著跑去找小藍貓。 小黃鴨的悲慘一天就這樣結束了。 Transitivity: intransitive verb

[15] These materials were taken from: https://zh.pngtree.com/.

Appendix C

Consent Form

親愛的家長，您好:

這是一份關於語言研究的同意書，為研究台灣兒童母語(國語)發展之情況，希望貴子弟協助回答問題，本研究目的在了解「孩童使用 “被”字句的情境」， 本研究共包含兩部份，第一個部分會請小朋友在聆聽故事過程中，對特定句子判定句法的對與錯，第二個部分會請小朋友在聆聽故事過程中，協助完成消失的故事內容。研究過程將在孩童就讀的熟悉校園內進行，一切以不影響學生上課權益為原則。

作答完畢後，會贈送小朋友一份小禮物，謝謝小朋友的參與。研究結束後，若 貴家長或教師想了解小朋友之任務表現，亦可提供數據並加以說明，供教學參考。本研究結果只供學術研究使用，任何關於小朋友的個人資訊絕不對外公開，所有答題資訊僅供本研究使用並會嚴加保密。本研究之進行，極需貴家長的支持，希望能徵得您的同意，讓孩子參與研究，在此獻上最誠摯的感謝！

敬祝 萬事順心

國立臺灣師範大學英語系研究所語言組
研究生：沈庭柔敬上
指導教授：陳純音教授

日期:民國 109 年 10 月

本人同意我的孩子_____進行此份研究計畫。於研究過程中，本人有權知道研究發現，若因孩童適應不佳，本人有權利終止孩童配合研究進行。

孩童姓名：_____

孩童性別： 男 / 女 (請圈選)

孩童出生年月： 民國_____年_____月

□**同意**

□ **不同意**

家長簽名: _____