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# 以客語為母語的兒童習得被動式之實證研究

# An Empirical Study of Hakka-Speaking Children's Acquisition of Passives

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# 摘要

本研究在探討以客語為母語的兒童被動式之習得。旨在驗證客語被動式的六大屬性（如：主事者不可省略性、語法複雜度、複指代詞之使用、(不)幸意涵、生命性/無生命性，和動詞及物性)在母語習得過程中所扮演的角色。研究議題包含屬性效應、副屬性型態難易度、題型效應、非典型作答模式、以及年齡效應。本研究設計兩個實驗題型，一是圖片選擇題，二是看圖回答。研究對象為 75 位客語母語人士，含 60 位平均年齡為 4 至 7 歲的兒童及 15 位成人。

實驗結果顯示，不同的屬性、副屬性型態、題型及年齡，皆對客語被動式習得有一定之影響。兒童對被動式六大屬性的回應顯示以下習得次序：生命性/無生命性及(不)幸意涵最容易習得，動詞及物性、主事者不可省略性與語法複雜度其次，難度最高者為複指代詞之使用。此階層性指出語意特性較語法特性易習得。此趨勢亦可見於副屬性型態難易度的表現。在題型效應方面，年齡層愈低的兒童在圖片選擇題的表現優於在看圖回答的表現，顯示其理解能力與口語能力在發展上的差異。此外，在非典型答案模式的分析中，我們歸納了六種主要作答型態：無回應、關鍵詞、主動句、被動句、語碼轉換、及不合文法語句。根據此作答型態，兒童口語發展歷經幾個階段方漸成熟，而 7 歲則為客語被動式發展的完全成熟階段。本研究期以此對客語教學有所助益。

# ABSTRACT

The present study aims to investigate L1 acquisition of Hakka passives to see if the six properties played roles in the development, i.e., No Truncation, Syntactic Complexity, the Resumptive Pronoun, Adversity, Animacy/Inanimacy, and Verbal Transitivity. The examined issues of the research were property effects, difficulties of sub properties, task effects, other elicited patterns, and age effects. To approximate a speaker's inner knowledge of Hakka passives, this study adopted a comprehension task (a picture selection task, PS Task), and a production task (a picture-cued production task, PP Task). The subjects of this study consisted of an experimental group (60 Hakka-speaking children) and a control group (15 adults). The children were further divided into four groups according to their mean age ranged from 4 to 7.

The overall results indicated that major properties, sub properties, tasks, and age, were all determinant factors in the acquisition of Hakka passives. From the young subjects' performances on the six major properties, a hierarchical sequence of L1 acquisition of Hakka passives was found: Animacy/Inanimacy = Adversity > Verbal Transitivity = No Truncation = Syntactic Complexity > Resumptive Pronoun. The hierarchy suggested a tendency that semantic concepts, i.e., Animacy/Inanimacy, Adversity, and Verbal Transitivity, were less challenging than syntactic properties, such as No Truncation, Syntactic Complexity, and Resumptive Pronoun. The semantic-syntax dissimilarity was also revealed when detecting each sub property. Concerning the task effects, the children performed much better on the comprehension task than on the production task. Furthermore, six main types were found in the subjects' production data: *no-elicitation*, *key words*, *active expressions*, *passive expressions*, *code-switching*, and *ungrammatical response*s. Three stages were defined to account for the developmental trend of each age group. Finally, it was found that the seven-year-olds had reached the

adult level both in perception and in production. Given the developmental order, the study was attempted to dedicate to the teaching of the Hakka dialect.

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| | |
|---|---|
| ASP | aspect marker |
| BEI | the morpheme of bei |
| BUN | the morpheme of bun |
| CL | classifier |
| CSC | complex stative construction |
| DO | the morpheme of do |
| EX | exclamation |
| GEN | genitive marker |
| L1 | the first language |
| LE | the morpheme of *le* |
| PS | puppet selection task |
| PP | picture-cued production |
| TET | the morpheme of *tet* |

# Chapter One

# Introduction

## 1.1 Motivation

It is generally agreed that the mastery of passives is developmentally later than that of actives (Baldie 1976, Marchman et al. 1991, Sudhalter and Braine 1985). Studies on the acquisition of passives in Mandarin Chinese, the so-called *bei*-construction, have shown that children do not fully acquire passives until six (cf. Chang 1986, De Villiers and de Villiers 1978, Harwood 1959, Kuo 1995, Tse et al. 1991, Tseng 1997). This developmental lateness has raised interesting questions to linguists: What linguistic factors determine children's development of passives? How do these factors (if any) influence children's developmental process of passives? From the previous studies, we can conclude that factors such as verb types, reversibility[1], animacy, and truncation (Kuo 1995, Tseng 1997) are influential in children's acquisition of Mandarin passives. However, as far as we know, none of the studies investigate if these factors remain important in the acquisition of Hakka[2] passives. The present study aims to reveal this unknown part and further look into other issues related to passives.

Hakka is an endangered language in Taiwan (cf. Luo 1994). Preservations and

[1] According to Baldie (1976), the reversible passive is the construction where the subject and object are interchangeable while maintaining its syntactic and semantic acceptability. The major characteristic of the reversible passive is the sharing feature of [+animate] by subject and object. For instance, a reversible passive is like *The girl is kissed by the boy*, where *the girl* and *the boy* are both plausible to be the actor. On the other hand, a sentence such as *The flower was planted by a farmer* is irreversible since it is impossible for *the flower* to be the actor of planting. From the previous studies and listed examples we notice that the property of reversibility is tied to animacy of argument (i.e., subject and object). Therefore, we integrate property of reversibility into animacy of subject/object in the present study of Hakka passives acquisition.

[2] Hakka, a dialect of Chinese, contains four major sub-dialects: Sixian, Hailu, Raoping and Shaoan. Among them, Sixian and Hailu are dominantly used in Hakka speaking communities (cf Hsiao 1996, Luo 1994). Distinctions between the four main subtypes of Hakka lie in their pronunciations, tones and partial vocabulary, all of which are more or less an issue of phonology rather than syntax and semantics. Therefore, implications of the present study are expected to account for the passive construction to the whole Hakka communities.

passing-on of the Hakka dialect is therefore in an urgent need. Its emergency can be articulated by a sharp contrast between numbers of Hakka natives and the ones who are capable of speaking Hakka. The population of Hakka natives in Taiwan consists of 4.5 million people, taken up one-fifth of residents in Taiwan Island (Hsiao 2004). However, fewer and fewer fluent Hakka speakers can be found (Luo 1994). According to the survey on Hakka natives under age forty by United Daily News in 2002, 76% of them could not understand Hakka at all (cf. Hsiao 2004). Even worse, Hakka is becoming a dead language in certain counties (cf. Kuo 2003, Yang 1988). In view of these facts, it is hoped that by revealing children' acquisition of Hakka passives, the present study can be dedicated to the teaching of the Hakka dialect.

Though Hakka is a dialect of Chinese, its passives, i.e., the *bun*-construction, has a distinct property: no truncation. In other words, the post-*bun* NP must be obligatorily present in passives (c.f. Chiang 2006, Hsiao 1996, Lai 1989, 2001, Luo 1985, Syi 2001), as shown in (1):

(1) a. A-Tu bun ngin da si le.
A-Tu BUN person beat dead ASP
'A-Tu was beaten dead by someone.'
b. *A-Tu bun da si le.
A-Tu BUN beat dead ASP
'A-Tu was beaten dead.'

Example (1b) shows that omission of the post-*bun* NP results in ungrammaticality, which, however, is not expected in Mandarin Chinese, as in (2):

(2) a. Zhangsan bei ren da si le.

Zhangsan BEI person beat dead ASP

‘Zhangsan was beaten dead by someone.’

b. Zhangsan bei da si le.

Zhangsan BEI beat dead ASP

‘Zhangsan was beaten dead.’

As shown above, Mandarin Chinese has two types of passives: with the post-*bei* NP as in (2a), and without the post-*bei* NP as in (2b). On the other hand, Hakka only exhibits the passive construction with the post-*bun* NP as in (1a); this has made Hakka passives unique in syntax. The distinction between passives in Hakka and Mandarin Chinese thus inspires us to see in the present study if there is any impact on Hakka children’s developmental process.

To sum up, the present study aims to see if the properties influential in the acquisition of Mandarin Chinese passives remain important in the acquisition of Hakka as a first language.

## 1.2 Theoretical Background

The present study aims to better understand the first language acquisition and development of the Hakka passive. The underlying goal of this study lies in Chomsky’s explanatorily adequate grammar: to account for language acquisition in order to explain the principles of the internal grammar known to native speakers (cf. Baker and McCarthy 1981, Chomsky 1965, 1981a, b, c, 1982, 1986a, 1988, Hornstein and Lightfoot 1981). By looking into L1 acquisition of the Hakka passive construction, it is expected that a better picture of the Hakka passive can be found.

Firstly considered in the present study are the property effect and difficulty of each property's sub types. As we mentioned before, Hakka does not exhibit truncated passives as in (1). Other than truncation, we also investigate properties such as animacy[3] and verbal transitivity[4], on which are often centered in studies of passives acquisition. Concerning animacy, the best candidate for this issue is whether or not the subject needs to be animate (cf. Comrie 1981, Givon 1984). This view is verified in language acquisition of passives (Lempert 1990, Maratsos et al. 1985). In addition, an animate agent in object position is said to be easier and earlier acquired than inanimate ones (cf. Givon 1984, Tseng 1997). These seem to suggest that the correspondence of subject/object to animate/animate is the prototypical pattern. With respect to verbal transitivity, it has been assumed that children mainly pay attention to the semantic prototypical role signified by the verb with a higher degree of transitivity. Among verbs of all types, action verbs and resultative verbs are preferred by children (cf. Kuo 1995, Maratsos et al. 1975, 1985, Sudhalter and Braine 1985, Tseng 1997). In addition to the features mentioned above, we will look into other properties as well.

The effect of methodology is another focus of the present study. Since it is usually difficult to unveil a native speaker's implicit knowledge of language, i.e., competence (Chomsky 1965), a speaker's performance of how s/he uses language in understanding and speech becomes crucial. Through the study of linguistic performance from various aspects, it is suggested that we should approximate the speaker's inner knowledge by examining his/ her comprehension and production data. Therefore, tasks of comprehension and production are both adopted in the present study. Whether children's

[3] Animacy concerns the prototype of argument, with an animate or inanimate feature (cf. Kuo 1995). For instance, "*The boy is chased by the girl.*" is a passive with an animate subject; while "*The pail is washed by the girl*." is with an inanimate subject (cf. Lempert 1989, Tseng 1997).

[4] Transitivity involves a different facet of the effectiveness or intensity with which the action is transferred from one participant to another (Hopper and Thompson 1980:252). For example, action verbs with change of state, e.g., *open, break, kill*, is stronger in transitivity than perceptual verbs with experiencer subjects, e.g., *like, hate, note*, or static verbs, e.g., *have, seem, look* (cf. Maratsos et al. 1985, Tseng 1997).

responses to one task are better than the other is also to be discussed (Ringbom 1992, Wen and Wu 1997).

Fourth, we will analyze error patterns of children's production. From their errors, we can account for the state and trend of children's language development and thus obtain certain implications of their acquisition process. For instance, viewing that preschool children in L1 English tend to treat passives as actives, Bever (1970) concludes that children interpret the noun-verb-noun sequence as Actor-Action-Object no matter whether the sequence occurs in active or passive sentences (cf. Marotsos 1974, Strohner and Nelson 1974, Sudhalter and Braine 1984). The present study will examine typical errors made by Hakka children in their acquisition of passives.

Finally, the age effect is considered in this study. It has been found that early input of the passive construction doesn't help children acquire it early and fully (cf. Wexler 1999, Ritchie and Bhatia 1999). In both English and Mandarin Chinese-speaking children's acquisition, a relatively long period to master the passive construction has been evidenced (cf. Marchman et. al 1991, Tseng 1997). To explain this phenomenon, Borer and Wexler (1987) propose the Maturation Theory, assuming that human brain's "language faculty" or "Universal Grammar (UG)" contains a sequence of grammatical theories. Along the sequence, each theory specifies a class of grammars available to the mind at a particular stage in the maturation of the language faculty (Borer and Wexler 1987, Wexler 1999). Therefore, in the present study we will find out the sequential stages of acquiring Hakka passives.

## 1.3 Research Questions

On the basis of the theoretical background taken up earlier, this study aims to address the following questions:

1. Are there any property effects on L1 Hakka passives?

2. Do Hakka children perform similarly on each property's sub types?

3. Do Hakka children perform similarly on different tasks on Hakka passives?

4. Are there any particular errors that Hakka children make in acquiring passives?

5. Are there any age effects on L1 Hakka passives?

## 1.4 Significance of the Thesis

Passives acquisition has drawn lots of researchers' attention for years (Baldie 1976, Chang 1986, De Villiers and de Villiers 1978, Harwood 1959, Kuo 1995, Marchman 1991, Tse et al. 1991, Tseng 1997, Sudhalter Vicki and Braine 1985, etc.). However, there is room for further explorations. Moreover, L1 acquisition of Hakka passives is still an undeveloped frontier. The concerned properties of the study, therefore, will range from those mainly on the focus, i.e., verb types, animacy, reversibility, and truncation (Kuo 1995, Tseng 1997), to syntactic complexity and other related issues.

Therefore, the present study aims to reveal Hakka children's language acquisition of passives in detail, and find out their difficulties in language development. It is hoped that the findings of the present study will help to reflect the acquisition of the Hakka passive construction and arouse Hakka native speakers' awareness of language preservation and passing-on.

## 1.5 Organization of the Study

The study is organized as follows. Chapter Two discusses main properties of Hakka passives and reviews relevant theoretical and empirical research. Chapter Three is dedicated to the research design of this study, and Chapter Four reports and discusses the experimental findings. Finally, Chapter Five offers conclusions as well as suggestions for further research.

# Chapter Two

# Linguistic Properties and Previous Studies of Hakka Passives

In this chapter we aim to analyze linguistic properties of Hakka passives and to review related studies and empirical research. Linguistic properties of Hakka passives will be discussed in Section 2.1. In Section 2.2, three theoretical studies of Hakka passives will be reviewed (Chiang 2006, Hsiao 1996, Lai 2001). Two empirical studies on the acquisition of Mandarin passives (Kuo 1995, Tseng 1997) will be discussed in Section 2.3. Finally, a brief summary of this chapter will be given in Section 2.4.

## 2.1 Linguistic Properties of Hakka Passives

Before we discuss about linguistic properties of the Hakka passive, it is necessary to introduce its basic form. The Hakka passive is marked by the morpheme *bun* and thus is also called the *bun* construction. Its pattern can be seen in (3).

(3) a. NP1 bun NP2 VP.

b. Sinsan bun eniateu hak do. (Luo 1988:300)

teacher BUN we frighten DO

'The teacher was frightened by us.'

In (3a), NP1 is a structural subject and usually serves as a patient; while NP2, the "post-*bun* NP," is a structural object and acts as an agent of the sentence. Descriptively, in (3b), the subject *sinsan* 'teacher' is acted upon by a behavior of frightening, which is performed by the object *eniateu* 'we.' The morpheme *bun* has signified the passive voice in the sentence.

After understanding the basic pattern, now let us turn to the important properties of

Hakka passives. First, the constraint of no truncation in Hakka passives is discussed in Section 2.1.1. Furthermore, the syntactic complexity and the resumptive pronouns are examined in Sections 2.1.2 and 2.1.3, respectively. Then, adversity of the Hakka passives is introduced in Section 2.1.4., followed by an issue of animacy/inanimacy stated in Section 2.1.5. Finally, the degree of transitivity is explored in Section 2.1.6.

### 2.1.1 No truncation

In a Hakka passive, the object can not be truncated (cf. Chiang 2006, Hsiao 1996, Lai 1989, 2001, Luo 1988, Shi 2001). In other words, only when an overt post-*bun* NP occurs can a passive sentence be grammatical, as illustrated below:

(4) a. Didi bun baba ma.
brother BUN father blame
'Brother was blamed by Father.'

b. Didi bun ngin ma.
brother BUN person(s) blame
'Brother was hit by someone(s).'

c. *Didi bun ma.
brother BUN blame
'Brother was blamed.'

Example (4) depicts a contrast between non-truncated and truncated passive sentences. In (4a) and (4b), both agentive objects are overt NPs, which qualifies their grammaticality. Their difference lies in that the object in (4a) is a specified NP: *baba* 'father', while in (4b) is unspecified: *ngin* 'person (s),' which is a person unknown in the discourse. By contrast, (4c) is ungrammatical due to its lack of an explicit object. In

general, example (4) shows that whether an object is specified or not, it needs to be obligatorily presented in the post-bun position in Hakka.

### 2.1.2 Syntactic complexity

Now let us consider an issue of syntactic complexity in Hakka passives: the short-distance passive vs. the long-distance passive.

A short-distance passive is a simple, mono-clausal passive (Feng 1990, Ting 1998). Due to its simplicity, it is regarded as an unmarked form of the Hakka passive, as illustrated in (5) and (6).

(5) a. Fai ngin bun A-Bo zok ziu le.
bad man BUN A-Bo catch away ASP
'The bad man was caught away by A-Bo.'

b. [$_{IP1}$Fai ngin$_1$ bun [$_{IP2}$ A-Bo zok ziu $t_1$ le]].

(6) a. Tong bun cengin siit tet le.
candy BUN kid eat TET ASP
'The candy was eaten by a kid.'

b. [$_{IP1}$Tong$_1$ bun [$_{IP2}$ cengin siit tet $t_1$ le]].

In (5a), the animate subject *fai ngin* 'the bad person' is a patient, who undergoes a catching-away by the agent *A-Bo*. The deep structure of (5b) shows that there is only one IP, i.e., $IP_2$, in the post-*bun* clause. In (6a), the inanimate subject *tong* 'candy' is a theme, which is eaten by a kid. (6b) shows that there is only one IP, i.e., $IP_2$, in deriving a short-distance passive like (6a). As a short-distance passive, its syntactic structure is simple and the meaning is straightforward.

On the other hand, a long-distance passive, also called a non-local passive (cf. Ting

1998), has posed certain problems for its syntactic nature[1] and thus needs more efforts to understand its meaning, as shown in (7) and (8).

(7) a. Fai ngin bun A-Bo hem gincha zok ziu le.
bad person BUN A-Bo ask police catch away ASP
'The bad person was caught away by A-Bo's asking for the police's efforts.'

b. [$_{IP1}$ Fai ngin bun [$_{IP2}$ A-bo ham gincha [$_{IP3}$ zok-ziu le]]].

(8) a. Tong bun amei hem cengin siit tet le.
candy BUN mother ask kid eat TET ASP
'The candy was eaten by Mother's asking for the kid's efforts.'

b. [$_{IP1}$ Tong bun[2] [$_{IP2}$ amei hem cengin [$_{IP3}$ siit tet le]]].

In (7a), the bad person was arrested by the police, but it was actually *A-Bo* who asked the police to catch the bad person away. The real agent of the entire event is *A-Bo*, while the police should be the agent of a sub-event of arresting the bad person. Example (7b) shows that in the deep structure, where at least two IPs, i.e., $IP_2$ and $IP_3$, are involved in the post-*bun* construction. The same applies to (8), where the real agent of the entire event is *amei* 'mother,' and *cengin* 'kid' as the agent of a sub-event of eating the candy. Two IPs can be found in the *bun* clause as well. From the examples above, we know that the long-distance passive is more complex in its syntactic representation and semantic

[1] Accordingly, a long-distance passive exhibits "unbounded" dependency. This is regarded as counterevidence against A-movement and is characteristic of A'-movement (cf. Feng 1990, Huang et al. 2008, Li 1991, Ting 1998). The gap-to-be position associated with the subject of the *bun* construction is filled with the complement of an object control verb, which is the fact entirely unexpected under an A-movement approach. Under the argument, the underlying form for example (7) is as follows:
(i) [$_{IP1}$ Fai-ngin$_1$ [$_{VP}$ bun [$_{CP1}$ Op$_1$ [$_{IP}$ A-Bo ham gin-cha$_2$ [$_{CP2}$ t"$_1$ [$_{IP2}$ PRO$_2$ zok-ziu le t'$_1$]]]
In this underlying structure, an A'-movement of a null operator is involved.

Though the treatment for the long-distance passives of Hakka is reasonable to some extent, it still needs more confirmations. In the present study, this is not the major concern. Therefore, we put it aside for further research.

[2] Some suggest that the morpheme bun should be located inside the IP2 bracket (cf. Feng 1990).

interpretation.

### 2.1.3 Resumptive pronouns

The third property we are concerned with is the distribution of resumptive pronouns in the so-called non-gapped passive (cf. Feng 1990, Ting 1998, Huang et al. 2008). Like the long-distance passive which we have discussed in Section 2.1.2, a non-gapped passive is also uncertain in its syntactic derivation[3]. Moreover, it also contains an overt object which occupies the internal argument position of the "passivized" control verb. But it differs from the long-distance passive in that this overt object co-indexes with the structural subject (cf. Feng 1990, Li 1991, Ting 1998).

To be precise, the word order of the non-gapped passive can be considered as "NP1+ *bun* + NP2+ V+ NP3…," which seems identical to the long-distance passive. However, unlike different referents which NPs refer to in the long-distance passive, the internal argument of the passivized verb in the non-gapped passive, i.e., NP3, in fact is co-indexed with NP1. Since NP3 is usually a pronoun, it is called a resumptive use (cf. Huang et al. 2008), as shown in (9) and (10)[4].

(9) Meimei$_i$ bun baba fak gi$_i$ so tinai.
sister BUN Father punish she clean floor
'Sister was punished by Father to clean the floor.'

(10) Gieule$_i$ bun gincha hem gi$_i$ hi zok fai ngin.
dog BUN police ask it go catch bad person
'The dog was asked by the police to catch the bad person.'

[3] Like the long-distance passive, the syntactic nature of the non-gapped passive is not our focus in the present study. For further information, reader may refer to Feng (1990), Li (1991), Ting (1998), and Huang et al. (2008).

[4] To our knowledge, no studies explicated the constraint of subject animacy in the non-gapped passive. However, an inanimate subject will make the sentence awkward. Therefore, both examples here are illustrated with animate subjects.

In (9), the pronoun *gi* ‘she’ refers to *meimei* ‘sister,’ who was punished by *baba* ‘Father.’ Due to the same referent of *meimei* and *gi* ‘she,’ *gi* in this structure is a resumptive pronoun. The clause beginning from *baba* to the sentence-final position, on the other hand, describes the passive event in an active voice. The same pattern can be seen in (10), where the pronoun is also a resumptive pronoun, referring to the non-human animate subject *gieule* ‘dog.’ The involvement of the resumptive pronoun in the Hakka passive may be more or less complicated for children to comprehend and produce.

### 2.1.4 Adversity

The next property to be discussed is a semantic constraint on the use of Hakka passives: adversity (cf. Hsiao 1996), which implies inflictive or unfortunate situations (Chao 1968, Li and Thompson 1981). A passive sentence without any negative meaning would be considered unnatural, as can be seen below:

(11) a. Didi bun baba ma.
brother BUN father blame
‘Brother was blamed by Father.’
?b. Didi bun baba kuatsong.
brother BUN father praise
‘Brother was praised by Father.’

A verb *ma* ‘to blame’ in (11a) expresses the meaning of adversity, which meets its semantic requirement for the passive. By contrast, (11b) sounds awkward unless the speaker refers to something ironic[5] (cf. Hsiao 1996:78-79).

[5] To meet the semantic requirement of adversity, when there is a seemingly positive message conveyed by verbs such as complimenting, it is usually regarded as sarcasm or humiliation in the passive construction.

The constraint of adversity is met even if the meanings of verbs are neutral, such as verbs of perception or cognition. Such verbs in Hakka include *koindo* ‘to see,’ *tangdo* ‘to hear’ and so forth, as illustrated in (12)-(13).

(12) Ngioule bun cegin koi do le.
kitty BUN kids see DO ASP
‘A kitty was seen by a kid.’

(13) Gi gon gai fa bun pet ngin tang do le.
he speak CSC words BUN other people hear DO ASP
‘What he said had been heard by other people.’

In (12), the passive construction conveys unwillingness or reluctance of the kitty seen by the kid. In (13), the implication of adversity is also transmitted through the passive construction where the subject may not expect the over-hearing by other people. Both sentences illustrate the semantic constraint of adversity even the verbs are neutral in meaning.

On the whole, Hakka passives imply adversity, even if the verbs carry non-adversative meanings. Therefore, the unmarked usage of Hakka passives should be set under certain unpleasant or with some negative propositions.

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This is exemplified in the following.

(i) Ngai bun ngin hien tso pantson. (Hsiao 1996:78-79)
I BUN people elect be the-leader-of-the-class
‘I was elected as the leader of the class.’

(ii) Gi bun ngin kuatsong.
he BUN people praise
‘He was praised by people.’

In (i), the *bun* construction may imply the unwillingness of *ngai* ‘I’ to be elected as a class leader, and in (ii), the speaker may suggest that *gi* ‘he’ does not deserve the praise, or that the praising is an irony.

### 2.1.5 Animacy/Inanimacy

Animacy of the structural subject (the patient role) and object (the agent role) is an issue considered in the present study. Animacy has been widely discussed in the literature in that it exerts certain influences on the acceptance for passives (Bock 1986, Dewart 1979, Harris 1978, Kuo 1995, Lempert 1984, 1989, 1990, Tseng 1997). Generally speaking, it is believed that the prototypical subject should be conceptualized as a category, which always comprises cognitively salient properties or components such as animate, cause, and dynamism (cf. Bates and MacWhinney 1982, Hinton 1981, Lempert 1989). Accordingly, an animate subject in passives should be more qualified than an inanimate subject. On the other hand, when we look into the thematic role, the prototype of an agent is also believed to be animate (Givon 1984). Under this proposition, it is suggested that a passive with an animate agent should be the unmarked form (cf. Kuo 1995). In the present study, we will discuss the relation between the passive and subject/object animacy.

Four possible sequences of combinations are found in Hakka passives according to animacy of the subject and object: animate-animate, animate-inanimate, inanimate-animate, and inanimate- inanimate.

(14) Didi bun meimei da. (animate-aniamte)
brother BUN sister hit
'Brother was hit by Sister.'

(15) Mama bun coido got do le. (animate-inanimate)
mother BUN knife cut DO ASP
'Mother was cut by a knife.'

(16) Tong bun didi siit tet le. (inanimate-animate)

candy BUN brother eat TET ASP

'The candy was eaten by Brother.'

(17) Bozhi bun tai fung chui zeu le. (inanimate-inanimate)

newspaper BUN strong wind blow away ASP

'Newspaper was blown away by a strong wind.'

In (14), the subject *didi* 'brother' is an animate NP that is hit by another animate NP—*meimei* 'sister'. In (15), the subject *mama* 'mother' is an animate NP that functions as an unwilling patient undergoing a cutting by an inanimate NP: knife. Examples (16) and (17), on the other hand, both consist of inanimate subjects is passives. In (16), an inanimate subject *tong* 'candy' is eaten by an animate NP *didi* 'brother.' In (17), *bozhi* 'newspaper' is an inanimate subject, which is a theme and is blown away by the inanimate natural force: wind. These four types will all be examined in the present study.

### 2.1.6 Degrees of Transitivity

Verbs of the Hakka dialect encompass two main kinds[6]: transitive verbs and intransitive verbs (Luo 1985). A feature unique to transitive verbs is that they can be used both in active and passive voices (cf. Chomsky 1965, Luo 1985). Intransitive verbs, on the other hand, can only be used in active sentences[7], as shown in (18).

[6] Auxiliary verbs are excluded here due to their unweightedness in Hakka passives.

[7] Some languages have intransitive verbs in the passive construction, e.g., Djeoromitxi or Yabuti, the Macro-Ge language (cf. Nascimento 1998). Some dialects of Chinese in the Mainland China also exhibit intransitive passives, e.g., the Jieyang Dialect of Chaozhou (cf. Matthews et al. 2005). However, this is not the case in Hakka passives.

(18) a. Yit gai cengin ki lan.

one CL kid stand LAN

‘A kid stands.’

b. *Bun yit gai cengin ki lan.

Based on different distribution, four main uses of transitive verbs can be listed in the following, where (19) to (21) are adopted from Luo (1985:153-154):

(19) a. S+ Vt+ O (Active)

b. Lochu to gai ngau butoi.

rat TO there bite bag

‘A rat was biting a bag there.’

(20) a. S+ *bun*+ O+ Vt (Passive)

b. Nggunchung bun keikung siit tet le.

centipede BUN rooster eat TET ASP

‘A centipede was eaten by a rooster.’

(21) a. S+ Vt+ IO+ DO or

S+ Vt+ DO+ P+ IO (Ditransitive Active voice)

b. Gi bun gia laie it gap tien.

he give his son one CL field.

‘He gave his son a field.’

c. Gi bun it gap tien bun gia laie.

he give one CL field to his son

‘He gave a field to his son.’

(22) a. IO+ *bun*+ S+ V+ DO or

DO+ *bun*+ S+ V+ IO (Ditransitive Passive voice)

b. It gap tien bun gi sung gia laie.

one CL field BUN he send his son

'A field was sent to his son by him.'

c. Gia laie bun gi sung it gap tien.

his son BUN he send one CL field

'His son was sent a field by him.'

From the above sentences, it is evidenced that a qualified verb type is necessary in the passive construction. In fact, instead of focusing on syntactic properties of transitive verbs, Hopper and Thomson (1980) propose parameters of transitivity according to "different facet of effectiveness or intensity with which the action is transferred from one participant to another." Maratsos et al. (1985) further claims that verbs fall into "a continuum of transitivity" in that the more transitive a verb is, the more qualified it is used in a passive construction (cf. Kuo 1995, Maratsos and Chalkley 1980, Maratsos et al. 1985, Pinker et al. 1987, Sudhalter and Braine 1985, Tseng 1997). Therefore, the present study will examine the relationship between verbal transitivity and the passive construction.

In this study, transitive verbs in Hakka passives are divided into three types[8] according to degree of transitivity from high to low: resultative verb, action verb, and experiential verb, as can be seen in (23)-(25).

[8] The classification is adopted from Tseng (1997).

(23) a. Resultative verbs: compound verbs that consist of a main verb and a resultative state, e.g., *zok ziu* ‘to catch away’, *siit tet* ‘to eat to the end’

b. Fai ngin bun A-Bo zok ziu le.
bad man BUN A-Bo catch away ASP
‘The bad man was caught away by A-Bo.’

(24) a. Action verbs: verbs which involve kinesics, e.g., *ma* ‘to blame’, *dui* ‘to chase’

b. Didi bun baba ma.
brother BUN Dad blame
‘Brother was blamed by Dad.’

(25) a. Experiential verbs: verbs which include both perceptual verbs and cognition verbs, e.g., *nou* ‘to hate’, *koin* ‘to see’

b. Cetle bun gincha nou.
thief BUN police hate
‘The thief was hated by the police.’

Accordingly, a resultative verb should be the most qualified category as a passive verb. This is mainly due to its disposal nature in the passive construction (cf. Luo 1985, Tseng 1997). On the other hand, the most difficult category of verb type, i.e., an experiential verb, is attributed to its “low degree” in transitivity (cf. Maratsos et al. 1985). An action verb is supposed to be in-between.

To sum up, six properties of the *bun* construction are discussed. First, the Hakka passive does not exhibit truncation. Second, the contrast between the long-distance passive and the short-distance passive involves syntactic complexity. Third, a resumptive pronoun is focused in the non-gapped passive in Hakka. Fourth, generally speaking, Hakka passives denote adversity. Fifth, an animate subject is supposed to be prototypical in Hakka passives. Finally, a resultative verb is found to be the most transitive, followed

by an action verb and an experiential verb.

### 2.2 Linguistic Studies of Hakka Passives

Three studies of Hakka passives will be reviewed in this section. The first study provides a general picture of the descriptive forms and meanings of the *bun* construction (Hsiao 1996). The other two studies are more concerned about semantic development of *bun* in Hakka passives (Chiang 2006, Lai 2001).

#### 2.2.1 Hsiao (1996)

*Bun*[9] in passives has been descriptively discussed in Hsiao (1996). The basic structure of the Hakka passive and its implied meanings are two main parts of the discourse. Concerning the basic form, *bun* acts as an agent marker in the structure of "NP1 *bun* NP2 VP"; it marks the second NP as the one that triggers the affectedness of NP1, as shown in (26):

(26) a. Gi dalan bile. (Hsiao 1996:71)
he break glass
'He broke the glass.'

b. Bile bun gi dalan le.
Glass BUN he break ASP
'The glass was broken by him.'

The morpheme *le*, which is a perfective aspect marker and also an expression of "state-changing," is usually needed in passives. However, the attachment of the aspect

[9] In Hsiao's (1996) thesis, the transcription system is simplified from Luo's (1984), so *bun* is transcribed into *pun*. Here, we adopt the transcription system of Syi et al. (2001) throughout the whole study for the sake of consistency.

marker is not a rigid constraint. When there is a disagreement in the temporal reference of the utterance, the morpheme *le* is unnecessary, as in (27):

(27) a. Gi tsongtsong bun ngin da. (Hsiao 1996:73)
he ofen BUN someone beat
'He was often beaten by someone.'
b. *Gi tsongtsong bun ngin da le.
he ofen BUN someone beat ASP

The ungrammaticality of (27b) lies in the temporal conflict between the frequency adverb *tsongtsong* 'often' and the perfective aspect marker *le*.

Furthermore, three types of verb complements with *bun* are discussed: (a) NP1 *bun* NP2 V Adj le; (b) NP1 *bun* NP2 V S; and (c) NP1 *bun* NP2 V1 NP3. Verbs in these patterns are usually transitive action ones, such as *da* 'to hit' or *ma* 'to blame'. In the first type, the adjective can be reduplicated twice or triple to emphasize the action, as shown in the following sentence taken from Hsiao (1996:75):

(28) Gia su bun ngin da do tsungtsung.
his hand BUN someone beat to-the-degree-of swelling
'His hand was beaten to the degree of swelling.'

The other type of V-Adj combination mentioned by Hsiao is the 'Verb-Resultative' compound where the verb signifies "a manner," while the adjective denotes "a result" done by the agent to the patient.

The second type is used to show the emphatic tone of the speaker, as can be seen in (29a) and (29b), the deep structure of (29a):

(29) a. Ame bun gi kiana mien tsiantsian. (Hsiao 1996:75)
mother BUN he anger face white
'Mother was so angry at him that her face paled.'
b. [Ame bun gi kiana [ame-e mien bien tsian]].
mother BUN he anger her face changing-into blue

As shown in the deep structure of (29b), the matrix subject and the embedded subject both refer to *ame* 'mother.' Another type of the *bun* construction under this category involves the movement of the embedded clause to the sentence-initial position, or the attachment of the morpheme *bun* before a sentence as shown in (30).

(30) a. [Gi koan do [cete tio dungsi]]. (Hsiao 1996:76)
he see DO theif steal thing
'He saw a thief stealing things.'
b. [Cete tio dungsi] bun gi koin do.
thief steal things BUN he see DO
'The thief's stealing things was seen by him.'
c. Bun gi koan-do [cete tio dungsi].
BUN he see theif steal things
'It was he that saw the thief' stealing.'

The third type involves sentences where the NP2 and NP3 hold relations of whole-part, source-goal or goal-tool, as shown in (31a), (31b) and (31c), respectively, all taken from Hsiao (1996).

(31) a. Gi bun cae tson tuan i zat giok.
he BUN car hit broken a CL leg
'his leg was hit by a car.
b. Ia bu bun gi tso sen fu le.
this clothe BUN he make into pants ASP
'This piece of cloth was made in to the pants.'
c. Mun bun ngin cit yiucit le.
door BUN someone paint paint ASP
'The door was painted with the paint.'

With respect to the meanings of the passive construction in Hakka, adversity is also discussed in Hsiao (1996). It is suggested that any Hakka *bun* passive sentences should be related to adversity.

Mandarin *bei* and Hakka *bun* are also compared in her study. Hakka *bun* in passives does not exhibit truncation, as shown in the following sentence with a ditransitive verb:

(32) a. Ngai bun gi it gi gongbit. (Hsiao 1996:83)
I give he a CL pen
'I gave him a pen.'
b. *It gi gongbit bun ngai bun bun gi.
a CL pen BUN I give to he

In Hsiao's study, descriptive explanation of Hakka passives and corresponding examples have taken a large proportion. Several inadequacies with her analysis and categorization are found. Some categorizations of her study overlapped with one another. For instance, both D- and S-structures of (28) and (29) are identical but are classified into

different types, which makes her analysis lack of a generalization. Furthermore, *bun* not only can act as an agent marker, but also an instrument marker and an experiencer marker (cf. Chiang 2006, Lai 1989, 2001, Tsao 1988).

### 2.2.2 Lai (2001)

In light of the fact that *bun* in Hakka exhibits various grammatical functions, Lai (2001) applies a cognitively oriented approach to account for the semantic relatedness of the polysemy of *bun*. *Bun* in Hakka demonstrates a case of "polygrammaticalization," which refers to "the phenomenon where a single form is the source of multiple chains" (Lai 2001: 138). To interpret *bun* in Hakka passives, a development from "*bun* as a verb of giving" into "an agent marker" is proposed. The development has based on metaphorical extension within the conceptual system in her study. The path of structure and semantic change is shown as follows:

(33) Verb-of-giving> Verb-of-causative>Agent marker

The cline of verb-of-giving-to-agent-marker involves the following three constructions. When *bun* undergoes the dative shift and the indirect object occurs prior to the direct object, *bun* is a verb of giving, as illustrated in (34). Moreover, it can also denote a causative reading as in (35). Bun as in (34) is used as an agent marker.

(34) Gi bun ngai yi gi bid. (Lai 2001:139)
he BUN me one CL pen
'He gave me a pen."

(35) Gi voi bun ngai he toibed.
he would BUN me go Taipei.
'He would let me go to Taipei.'

(36) Gi bun ngai da.
he BUN me beat
'He was beaten by me.'

To derive the agent marker, the development is discussed. The verb *bun* "to give" in (34) involves three arguments: the giver, the recipient, and the given thing. Through the action of giving, the controller or the possession of the thing is transferred from the giver to the recipient (cf. Newman). Then the meaning of object-passing of the noun phrase can be extended to the verb phrase. Consequently, the meaning of "giving someone something" mutates into "giving someone the permission to do something." In (35), a causative sentence, *bun* serves as a transfer of control over the conduct of going to Taipei. The object thus possesses the transferred control of going to Taipei. Following Newman (1993: 468), the co-existence of the giving sense and the causative sense are motivated by the parallelism between the conceptual structures of possession and control.

After the causative sense is developed, the derived agent marker is taken into consideration. According to Lai, *bun* in passives, as exemplified in (36), has lost its verbal status and has "decategorized" into a preposition. The way it gets the agent-marking sense lies in an argument of the "transfer-control" adopted from Newman (1993). The object takes over the power from the subject to do the action which the second predicate refers to. Since the subject allows the object to possess the power of control, it must "tolerate what the object is going to do." Therefore, if an action done by the object has some effect on the subject, the morpheme *bun* catches a sense of agent-marking. Consequently, the object becomes a semantic agent in the so-called

passive construction. In other words, the path of semantic change of *bun* from the causative sense to the agent-marking sense is as follows (cf. Newman 1993):

(37) a. The subject explicitly gives the object the chance to do something. (causative sense)

b. The subject tolerates the object's doing something.

c. The subject is such that the object does something to the subject. (passive sense)

Lai's study provides an insight to semantic relatedness of the polysemous functions of the morpheme *gai* in Hakka. Metaphorical extension within the conceptual system is applied to derive *bun* as an agent marker in passives. The development, however, seems inadequate to explain the phenomenon when *bun* is used as an instrument or an experiencer marker in the passive construction.

### 2.2.3 Chiang (2006)

From the perspectives of construction grammar and grammaticalization, Chiang (2006) looks into syntactic and semantic features of two morphemes in Don-shi Hakka: *bun*[10] and *tung*[11], and discusses their relationship. As an advocator of construction grammar, Chiang hypothesizes that these two morphemes depict multiple semantic meanings and grammatical functions. The view of grammaticalization, on the other hand, explains the co-occurrences of different meanings and functions of the same word synchronically.

Among different functions of *tung* and *bun*, one fact is worth noticing: *tung* can

[10] In Chiang (2006), all the examples are transcribed into International Phonetic Alphabet (IPA). Here we transcribe them in the system of Syi's (2001).

[11] *Tung* in Don-shi Hakka is equal to *lau* used in Si-Xian and Hai-Lu Hakka in northern Taiwan. *Tung*/ *lau* corresponds to *ba* in Mandarin Chinese.

serve as a patient marker, which is equal to *ba* in Mandarin Chinese; *bun* can be an agent marker, which corresponds to *bei* in Mandarin as shown in (38) and (39):

(38) Gai von tong tung gi deu goloi. (Chiang 2006:340)
that CL soup TUNG it hold come
'Hold that bowl of soup and come here'

(39) Gai zak bui bun ngai da lan le.
that CL glass BUN I crash brocken ASP
'I have broken that glass.'

When *tung* acts as a patient marker, the disposal argument, e.g. *gai von tong* 'that bowl of soup' in (38), is usually triggered by topical functions and is moved to the sentence-initial position from the post-*tung* position. The post-*tung* position is then refilled by a resumptive pronoun *gi* 's/he/it,' which refers to the patient; this structure can be seen as a typical *tung* construction. In addition, the subject can be an instrument, as illustrated in (40), where the contraction of *tung* and *gi* into *ti* in phonology is common. The pronoun *gi* does not refer to the instrumental subject *von*.

(40) Von tsi ti keim lok hi. (Chiang 2006:345)
bowl TSI TUNG-it cover fall go
'(someone) use a bowl to cover it.'

On the other hand, when *bun* is an agent marker in the passive construction as in (39), the representative form is "NP1 *bun* NP2 VP", where NP1 *gai zak bui* 'that glass' refers to the patient of the predicate *dalan* 'brocken,' and NP2 *ngai* 'I' is marked as an agent, which performs the action. In addition, the subject of NP1 not only can be a patient

but also can be an instrument, as in (40):

(40) Miensien bun ngai liu ap liu tsiangtsiang. (Chiang 2006:350)
noodles BUN I cover duck cover clear
'Noodles have been used to the end by me to cover the duck.'

In (40), the post-*bun* NP *ngai* 'I' is an agent, and the subject *miensien* 'noodles' is an instrument used to cover the duck. *Bun* can also be an experiencer marker, as in (41), an example taken from Chiang (2006:351):

(41) Gai ambu hi du, jingin bi du ziang a.
That night go gambling really BUN-he gamble win EXC
'He went gambling that night and really won.'

In (41), *bun* and *gi* 'he' contract into *bi* phonologically but *bun* remains the same meaning. The noun *gi* 'he' acts as an experiencer who won a gambling that night. In (41), no actual NP1 occurs and NP2 is not related to control or active willingness in semantics. This passive construction is called "unwilling permissive" (Chang 2004), where there is no action when NP2 is inanimate, as follows.

(42) Ngai bun juziu biak do su. (Chiang 2006:351)
I BUN lard boil DO hand
'I was boiled by the lard.'

(43) Vuk sa bun fo shieu tet le.
house unexpectedly BUN fire burn TET ASP
'Unexpectedly, the house was burned!'

In (42) and (43), the post-*bun* NPs are both inanimate and are both lack of active control.

The seemingly opposite functions of *bun* and *tung* in fact parallelize each other in some constructions. Chiang brings out a notion of “neutralization” of *bun* and *tung* on the base of the evidence that when *bun* occurs in a special construction of passives like (44) taken from Chiang (2006:358), the pronoun *gi* would lead to two interpretations.

(44) Tsok kuang an do teuna ngiognvoi *bun* gi liung
table slate very many head why BUN it put
ngip hi ha?
enter in EXC
‘The chink between the table and the slate was so tiny. How was your head stuck by it? (or How do (you) put your head in?)’

According to Chiang, both of two interpretations are plausible: (a) *bun* maintains its traditional meaning as a passive marker; or (b) *bun* is neutralized as *tung*, which is on a par with Mandarin *ba*. If the reading is (a), the pronoun *gi* would act like an expletive which acts as an agent, implying that *teuna* “head” in (37) is an ‘unwilling permissive patient’ (c.f. Chang 2004, Chiang 2006). This reading is equal to the traditional interpretation in Hakka *bun* passives. On the other hand, if the reading is (b), the pronoun is a resumptive, which is co-indexed with the patient *teuna* “head”. In that case, the *bun* passive is an active sentence, where NP2 is not an agent, but a patient.

Chiang’s treatment of *bun* and *tung* provides an informative account for the phenomenon of neutralization, which can be seen as one of distinct properties of Hakka passives. However, more evidence is needed to confirm the neutralization of *bun* and *tung*.

## 2.3 Empirical L1 Studies of Chinese Passives

Two empirical studies on language acquisition of Chinese passives will be reviewed in this section (Kuo 1995, Tseng 1997). The former stresses on the importance of semantic and pragmatic factors in the development of children's passives. The latter, on the other hand, believes that syntactic knowledge also weights in language acquisition.

### 2.3.1 Kuo (1995)

Semantic and pragmatic constraints on children's use of the Chinese passives are examined in Kuo (1995). In the analysis, verbs of transitivity and the alternation of full or truncated passive form are two major foci. It is believed that children's choice between truncated and full passives is governed by a pragmatic factor. Children tended to produce the full form unless they attempted to emphasize the effects of an action on the patient NP; in the latter case, they were inclined to utter truncated passives. With respect to verb of transitivity, Kuo maintained that children tended to produce the passives in a prototypically or the most transitive event, which encompass a human agent, an individualized patient and an actional verb. In short, children's use of the passive form was dominated either by a pragmatic factor or by prototypical transitivity.

Two studies were carried out in Kuo's research on Chinese children's acquisition of passives. One was through naturalistic observation in children's spontaneous speech, which aimed to provide an understanding of the process of child language development and a check of available hypothesis. The other was through empirical designs to test the assumptions that the agent and the patient roles play an important might role in the development of the sentence with non-actional verbs.

In the naturalistic study, the corpus from a computer data bank was analyzed. Among a total of 195 elicited sentences from fifteen subjects, there were 172 *bei* passives, 21 *gei* passives, 2 *rang* passives, and no *jiao* passives. To investigate the developmental

process of the passive construction, the subjects were divided into three groups: Group I: 29-44 months; Group II: 45-59 months; and Group III: 60-74 months. The results are as follows (adopted from Kuo 1995:55-56).

Table 2- 1: Total Number of the Type of Chinese Passives Produced by Each Age Group

| Group / Type | Group I 29-44m (3.04y) | Group II 45-59m (4.33y) | Group III 60-74 (5.58y) | Total |
|---|---|---|---|---|
| bei passive | 44 | 52 | 76 | 172 |
| gei passive | 18 | 8 | 5 | 21 |
| rang passive | 0 | 2 | 0 | 2 |
| jiao passive | 0 | 0 | 0 | 0 |
| Total | 62 | 62 | 81 | 195 |

The developmental trend shown in Table 2-1 indicated that there was a peak in the total passives produced Group III. In addition, children produced more *bei* passives while less *gei* passives as their ages decreased. The *bei* passive was thus assumed to be acquired earlier than other passive forms. The relatively low frequency of *jiao* and *rang* passives was attributed to the fact that they were usually treated as content words rather than passive markers.

Conclusions and implications are drawn after a further analysis on the data. First, Chinese children did not like the passive form with an unspecified agent, i.e., truncated passives. This fails to support the hypothesis by Watt (1970) and Wasow (1977) that two constructions are acquired in psychologically different ways—the full form is verbal, while the truncated one is lexical. Besides, unlike what Sudhalter and Braine (1985) claim, the subjects in fact did not acquire passives by partial competence, i.e., firstly processing the initial truncated passive unit. The data in Kuo's study suggest that the full form should be acquired earlier by Chinese children. Furthermore, the distinction between the truncated and full forms is viewed as a pragmatic reflection.

Second, the subjects were not very sensitive to the reversible nature of the event. The finding thus did not support Pinker et al.'s (1987)'s view that children tend to make the agent explicit when the role of the two participants in an event is confusing, that is, when both arguments are animate, making passives reversible (Kuo 1995:58). Third, transitivity is a factor affecting children's acquisition of Chinese. The higher degree of verbal transitivity it was, the greater tendency of the subjects' use of the passives it would be (Kuo 1995:63). To put it more specifically, the children preferred to use actional verbs, with a proper resultative component in their speech, then verbs of a more abstract level, e.g., *pian* 'to deceive.'

Finally, Kuo's result supports Lempert's (1989) hypothesis that the prototypical of the matrix subject includes animacy as one of its salient properties, no matter which type of sentence it would be, an active or a passive. Kuo's subjects tended to treat animate patients as the matrix subject of the passive construction (Kuo 1995: 72).

Kuo proceeded with an experimental design to verify two questions: (1) whether children applied the concept of agent-patient distinction to non-actional verbs; and (2) how children treated non-prototypically transitive verbs. Twenty-two subjects (ten in the elder group and twelve in the younger group) participated in the experiment. They were asked to place tokens of different colors, i.e., yellow and blue, representative of an agent and a patient, to test whether they could operate those tokens in the sentences with different verbs. These sentences were classified into four types according to the degree of transitivity: (1) actional verb: *zhua* 'catch,' *zhuang* 'bump'; (2) experiential verb: *xihuan* 'like,' *taoyan* 'dislike'; (3) verb of more abstract relationship: *qupian* 'cheat,' *ying* 'win'; and (4) non-prototypically transitive verb: *gei* 'give,' *tou* 'steal.'

After a training phase, a test began. No matter in active or passive voice, the child's selection was considered correct if the agent token fell on the logical subject and the patient token was on the logical object, either direct or indirect. The overall results are

shown in Table 2-2 (adopted from Kuo 1995:82).

Table 2- 2: Frequency of Correct Token Placement for Each Type of Verb

| | Actional verb | Experiential verb | More abstract verb | Non-proto verb | Mean |
|---|---|---|---|---|---|
| Younger Group (5,1) | 86% | 90% | 67% | 67% | 77.5% |
| Elder Group (6,2) | 100% | 90% | 87% | 74% | 87.5% |

As illustrated in Table 2-2, our children performed better with verbs of a high degree of transitivity. In general, they applied the concept of agent and patient to different verb types. The result hence supports the claim that children mentally perceives verbs as having an abstract agent and a patient after they pick up the prototypical core of transitivity (Pinker et al. 1987). Furthermore, the result implies that animacy would influence the effect of verbal transitivity. Finally, Kuo indicates that there must be specific subcategories within the patient role in children's mind (Kuo 1995:88).

Through the combination of a naturalistic study and an experimental study, Kuo (1995) provides an integrative view of Chinese children's acquisition of passives. Nevertheless, some designs and findings have not been satisfactory and deserve further investigation. First of all, a naturalist study is by no means unproblematic. For example, when a construction is not found in children's utterances, it does not necessarily signify that there is no such a construction in children's mind. Consequently, we cannot easily affirm a one-to-one correspondence between children's spontaneous speech and their knowledge. Moreover, in the spontaneous speech, the languages used are more heavily dependent on discoursal factors than children's preferences.

Furthermore, the asymmetry between frequencies of *bei* passives and other passive

forms in spontaneous speech may be due to the frequency of exposure in children's daily life (Tseng 1997:61). Kuo's conclusion that this imbalance has struck since other passive forms are content words in non-passive sentences would need further exploration.

### 2.3.2 Tseng (1997)

Semantic, pragmatic, and syntactic aspects are all considered in Tseng (1997) on the acquisition of the *bei*-construction in Chinese. Children were claimed to be equipped with knowledge of all these aspects to fully acquire the construction. In the analysis, three main properties related to the passives were concerned: object animacy, transitivity, and sentence reversibility. The results indicated that transitivity and sentence reversibility were influential in children's comprehension as well as production of the *bei*-construction, while patient animacy was less significant. In addition, Tseng accounted for the syntactic nature of the *bei*-construction and suggested that the *bei*-construction should be bi-clausal, where the surface subject should be base-generated.

Three experiments were applied: the act-out/imitation task, the elicited production task, and the grammatical judgment task; the first and third looked into the children's understanding of the *bei*-construction while the second one examined their speech. Thirty subjects aged from 4;9 to 6;1 participated in her study and were divided into two groups, 14 in Group I (mean age: 5;0) and 16 in Group II (mean age: 6;1).

In the first experiment, the subjects were asked to repeat what the experimenter said and then acted out what they interpreted for the sentence with puppets and toys. Verb of transitivity, patient animacy, and sentence reversibility were properties included as tested materials in 21 sentences. According to the hierarchy of verbal transitivity, sentences included verbs of four types: (1) resultative, e.g., *da po* 'to hit to break,' *chi wan* 'to eat up'; (2) actional, e.g., *yao* 'to bite,' *xi* 'to wash'; (3) experiential, e.g., *xi huan* 'to like,' *xiang nian* 'to miss'; and (4) intransitive, e.g., *ku* 'to cry,' *san bu* 'to take a walk.' Only

the former two could children imitate and act out; the rest of two types required their imitation.

The results of the imitation task showed that both groups of subjects were near to adult-like level. The results of the act-out task further suggested that the children at the age of 4;8 had already possessed certain knowledge of the *bei*-construction, but those at 6;0 still had not reached to adult-like performance. With respect to the tested properties, the younger children were under great influence, especially of the factors of verbal transitivity and reversibility. Younger subjects' performance on resultative verbs was better than that on actional verbs, and their performance on nonreversible sentences was better than on the reversible ones. On the other hand, the older group showed no significant difference on the degree of verbal transitivity and sentence reversibility. In addition, Tseng's study failed to argue for object animacy for the two groups in the *bei*-construction.

The production task was then conducted with the aim of eliciting the *bei*-constructions under a proper and felicitous context. Different from the former task, the control group comprised of sixteen junior high school students (mean age: 13; 4) was asked to participate in the experiment. Variables of transitivity, object animacy and reversibility were all taken into consideration in designing the twenty-two test sentences.

The outcome showed that for actional and resultative verbs there existed significant difference between the control group and the two experimental groups but there was no difference between Group I and Group II. This indicates that young children fewer than 6 have not yet acquire adult-like syntactic and pragmatic ability. Within the group, on the other hand, the performance of Group II and the control group both demonstrated a significant difference to different verbs of transitivity. However, Group I showed no difference to this property. In general, the overall tendency for the *bei*-construction was action verbs= resultative verbs> experiential verbs. Furthermore, reversible sentences

were found more difficult for the children than irreversible ones. Concerning the factor of object animacy, there was still no sufficient support from the data. In short, only two factors were found influential in children's acquisition of Chinese passives: verb transitivity and sentence reversibility, which accords with the findings of the first experiment.

To account for the syntactic nature of the *bei*-construction in children language acquisition, a grammatical judgment task was employed. This task aimed to verify whether the *bei*-construction is a mono-clausal or bi-clausal structure and if any movement is involved in the formation of the construction (Tseng 1997:110). The same subjects, including the experimental and control groups, were asked to judge the acceptance of the real *bei*-construction together with three additional "pseudo *bei*-constructions," as in B, C, D below (adopted form Tseng 1997: 112):

A. NP2 bei NP1 V

B. bei NP1 V NP2

C. NP2 bei NP1 V NP2

D. NP2 bei NP1 V pronoun

Three targeted properties related to the *bei*-construction, namely, verb transitivity, sentence reversibility and object animacy, were all examined in the test sentences (n=74). After the task, children were asked to describe scenarios presented.

The hierarchy of acceptance for each type of the *bei*-construction is A> D> B> C. It was found that Structure A, due to its genuine status in the *bei*-construction, was most acceptable. On the other hand, Structure C, NP2 *bei* NP1 V NP2, was the least acceptable since it violated Principle C, in which the referential expression, NP2, must be free everywhere. In particular, acceptance of Structures D and B suggest that there should be an empty pronoun following the verb in the *bei*-construction. This is regarded as the counterevidence against the claim of A-movement, in which a trace should be left behind

instead of an empty pronoun. Accordingly, the result lends support to Chiu's (1993) and Li's (1994) proposal that the *bei*-construction is bi-clausal and there is no movement involved.

Finally, the children tended to use active forms with actional and experiential verbs in their free descriptions of presented events. When resultative verbs were involved, the percentage of the *bei*-construction was higher though it was not predominantly high. In fact, the use of the *bei*-construction is functionally loaded, which heavily relies on an emphasis of state-changing of the patient role and the conveyance of disposal as well as adverse meaning. In other words, children must be equipped with semantic and pragmatic knowledge of the *bei*-construction together with syntactic competence.

In Tseng's (1997) study, three experiments designed to account for children's use of the Chinese *bei*-construction from different aspects, i.e., syntactic, semantic, and pragmatic ones. However, there remain some problems in her experiments. The first problem is with her unbalanced numbers of experimental sentences under each subtype in her tasks. For instance, in the act-out/imitation task, there were seven test sentences under Action verbs, four under Experiential verbs, six under Resultative verbs, and four under Intransitive verbs. The unequal numbers may lead to task effects and statistics errors. Besides, the control elements in her study were not property under control, e.g., in the act-out/imitation task, the subjects were required to act out on only partial structures. The incompatible elements may weaken the validity and authority of the overall outcome.

### 2.4 Summary of Chapter Two

In this chapter, properties of Hakka passives and previous studies are discussed. In the first place, we have examined six properties of the passive construction in the study. We have also reviewed previous studies on Hakka passives and L1 acquisition of Mandarin passives. In the next chapter, we will present the experimental design, which

aims to reveal the relationship between L1 acquisition and linguistic properties of the *bun* construction in Hakka.

# Chapter Three
# Research Design

In this chapter, we will introduce the subject and research design of the present study. Section 3.1 presents the background information of the subjects recruited for the formal study. In Section 3.2, the materials and research method are reported. Section 3.3 describes the procedures, which include a pilot study, a formal study and the system of scoring. Finally, a brief summary of this chapter will be given in Section 3.4.

## 3.1 Subjects

The present study conducted a quantitative experiment to investigate L1 acquisition of Hakka passives. Seventy-five subjects were invited to participate in the experiment: sixty Hakka children aged from four to seven as experimental groups, and fifteen adult speakers as a control group. The background information of the subjects was shown in Table 3-1.

Table 3- 1: Background of the Subjects in the Present Study

| Group | Number | Mean Age |
|---|---|---|
| 1 | 15 | 4.0 |
| 2 | 15 | 5.0 |
| 3 | 15 | 6.0 |
| 4 | 15 | 7.0 |
| Control | 15 | 30 |
| Total | 75 | |

The experimental groups were selected from Guan-Si kindergarten and Guan-Si elementary school in Hsinchu County in Taiwan. They were all born in a Hakka family and acquired Hakka as their first language. The schools selected in the present study were

monolingual; the major language used at school was Mandarin Chinese.

Children who attended Guan-Si kindergarten spent five days a week and averagely eight hours a day (from 7:30 to 15:30) in school. They had lunch at 11:30 and then took a nap from 12:30 to 14:30. Regular Hakka courses were arranged in the early-morning period, in which students were engaged in singing songs and playing games. No English classes were provided in the kindergarten. Children who attended the elementary school also spent five days a week on campus. They attended school from 7:30 to 12:00 except on Tuesday when they left school at 16:00. Their schedule was tighter than kids in the kindergarten. Different courses were offered during the school time with a span of forty minutes for each class. No English classes were provided for children of the first and second grades in the elementary school, either.

The adult subjects were all native fluent speakers of Hakka and spoke Hakka fluently. Hakka and Mandarin Chinese were both main languages used in their daily life. In the present study, the results of the performance of each group were collected and analyzed to detect the acquisition of passives in Hakka.

### 3.2 Methods and Materials

By applying an experimental method, the present study aimed to test hypotheses through objective techniques and statistical analyses. The experimental study would be preferable to a naturalistic or longitudinal observation lies in its efficiency and effectiveness (cf. French and Nelson 1985, Chen 1993). It is efficient since the experimenter can collect data from numbers of individuals within a limited period of time. The experimental study is effective in that data of various ages can be compared and contrasted and the developmental trend can be analyzed. The quantitative statistics can further validate the result. In view of the above advantages, an experimental method was adopted in the present study.

In order to draw an unbiased conclusion on the acquisition of Hakka passives, both production and comprehension tasks were conducted (cf. Karmiloff-Smith 1979). In this study, two tasks were designed: a puppet selection task (i.e., the PS Task) and a picture-cued production task (i.e., the PP Task); the former examined the subjects' linguistic comprehension, while the latter focused more on the subjects' performance. With these two tasks, it was believed that the acquisition of the Hakka passives can be revealed.

As what we have discussed in Chapter Two, the present study aims to survey six properties of Hakka passives. First of all, the Hakka passive does not exhibit truncation. Therefore, it is necessary to detect if the subjects can make distinctions among truncated and non-truncated passives. At the same time, we detected if the subjects could perceive/produce an expletive pronoun when the agent object was not specified. Secondly, we saw if syntactic complexity influenced the acquisition of the *bun* construction, and explored the existence of a resumptive pronoun in the non-gapped passive. Fourthly, we examined the adversative meaning of Hakka passives in the subjects' acquisition, and also looked into the influence of subject and object animacy. Finally, we detected if different levels of verbal transitivity (i.e., resultative, action and experiential verbs) exerted different levels of acceptance/production in the *bun* construction. Test sentences for these six sets of materials are shown in Table 3-2:

Table 3- 2: Test Items Designed for Both Tasks

| Properties | Subtype | Number of test item | Example | PP Task | PS Task |
|---|---|---|---|---|---|
| No truncation | Non-truncated | 2 | a. ***Didi bun baba ma.***<br>brother BUN father blame<br>'Brother was blamed by Father.' | Q9, Q19 | Q5, Q14 |
| | Truncated | 2 | b. ****Didi bun ma.***<br>brother BUN blame<br>'Brother was blamed.' | Q11, Q15 | Q9, Q12 |
| Syntactic complexity | Long-distance passive | 2 | a. ***Fai ngin bun A-Bo hem gincha zok ziu le.***<br>bad man BUN A-Bo ask police catch away ASP<br>'The bad man was caught away by A-Bo to ask for the police's efforts.' | Q5, Q13 | Q7, Q10 |
| | Short-distance passive | 2 | b. ***Fai ngin bun A-Bo zok ziu le.***<br>bad man BUN A-Bo catch away ASP<br>'The bad man was caught away by A-Bo.' | Q9, Q19 | Q5, Q14 |
| Resumptive pronouns | Non-gapped passive | 2 | a. ***Didi bun baba fak gi so tinai.***<br>brother BUN Father punish he clean floor<br>'Brother was punished by Father to clean the floor.' | Q14, Q17 | Q15, Q18 |
| | Long-distance passive | 2 | b. ***Fai ngin bun A-bo hem gincha zok-ziu le.***<br>bad man BUN A-bo ask police catch-away ASP<br>'The bad man was caught away by A-Bo to ask for the police's efforts.' | Q5, Q13 | Q7, Q10 |
| Adversity | Adversative | 2 | a. ***Didi bun baba ma.***<br>brother BUN father blame<br>'Brother was blamed by Father.' | Q9, Q19 | Q5, Q14 |
| | Non-adversative | 2 | b. ***Didi bun baba kuatsong.***<br>brother BUN father praise<br>'Brother was praised by Father.' | Q2, Q6 | Q1, Q19 |
| Animate/ Inanimate | Animate-animate | 1 | a. ***Didi bun baba ma.***<br>brother BUN father blame<br>'Brother was blamed by Father.' | Q9 | Q5 |
| | Animate-inanimate | 1 | b. ***Mama bun coido got do le.***<br>mother BUN knife cut DO ASP<br>'Mother was cut by a knife.' | Q10 | Q13 |

| | | | | | |
|---|---|---|---|---|---|
| | Inanimate-animate | 1 | a. ***Tong bun seingin ssit tet le.***<br>candy BUN kid eat TET ASP<br>'The candy was eaten by a kid.' | Q22 | Q4 |
| | Inanimate-inanimate | 1 | b. ***Bozhi bun tai fung chui zeu le.***<br>newspaper BUN strong wind blow away ASP<br>'Newspaper was blown away by a strong wind.' | Q4 | Q21 |
| Verbal Transitivity | Resultative | 2 | a. ***Fai ngin bun A-Bo zok ziu le.***<br>bad man BUN A-Bo catch away ASP<br>'The bad man was caught away by A-Bo.' | Q9, Q19 | Q5, Q14 |
| | Action | 2 | b. ***Didi bun baba ma.***<br>brother BUN father blame<br>'Brother was blamed by Father.' | Q1, Q7 | Q2, Q17 |
| | Experiential | 2 | c. ***Cetle bun gincha nou.***<br>thief BUN police hate<br>'The thief was hated by the police.' | Q18, Q21 | Q16, Q22 |
| Fillers | | 5 | | Q3, Q8, Q12, Q16, Q20 | Q3, Q6, Q8, Q11, Q20 |
| Total of test items | | 22* | | | |

*Note: Originally, the total of the test items was 31. However, the same test sentences can be used to assess the subjects' competence and production: non-truncated passives, short-distance, adversative and resultative passives; non-gapped passives and long-distance passives; animate/animate passive and non-truncated passives. These test sentences are 9 in total. Therefore, after deducting the identical test sentences in total, 22 test items will be used in the present study.

Two tasks were administered: the PS (Puppet Selection) Task and the PP (Picture-cued Production) Task. Each task consisted of 22 sentences, including 17 test sentences and 5 fillers. In the PS Task, the subjects were presented with two puppets in a context: Piggy and Monkey. One of them said an acceptable sentence and the other uttered an unacceptable one. The subjects needed to choose the right puppy according to the context. A sample question is shown in Table 3-3.

Table 3- 3: A Sample of the Test Question Used in the PS Task

| Subjects saw: | Subjects heard: |
|---|---|
|  | Piggy:<br>***Fai ngin bun A-Bo zok-ziu le.***<br>bad man BUN A-Bo catch-away ASP<br>'The bad man was caught away by A-bo.'<br><br>Monkey:<br>***A-Bo bun fai ngin zok-ziu le.***<br>A-Bo BUN bad man catch-away ASP<br>'A-Bo was caught away by the bad man.' |
|   | Experimenter:<br>*Masa gong gai chok?*<br>who speak CSC correct<br>'Whose description is correct?' |

In the PP Task, the subjects saw a picture with a short description for every test sentence of the *bun* construction. Table 3-4 is a sample of question used in the PP Task.

Table 3- 4: A Sample of the Test Question Used in the PP Task

| Subjects saw: | Subjects heard:<br>Experimenter:<br>***Meimei gai pihi don fie. Meimei da***<br>sister GEN temper very bad sister hit<br>***Didi. Didi bun meimei ionban le?***<br>brother brother BUN sister how ASP |
|---|---|

| | |
|---|---|
|  | ‘Sister has a bad temper. She hit Brother. What happened to Brother?’ |

### 3.3 Procedures

In this section, procedures of a pilot study, the formal study and the way of scoring will be reported.

#### 3.3.1 Pilot Study

The pilot study investigated the acquisition of Hakka passives of eight children aged from four to seven. Five properties were examined: subject animacy, reversibility, no truncation, verbal transitivity, and the bi-status pronoun in a special construction. All of them were included in the two tasks: the puppet selection task (PS Task) and the picture-cued production task (PP Task). The PS Task was conducted with two puppets. The children had to select one puppet, whose utterance was correct. In the PP Task, the subjects were asked to produce in the *bun* construction after seeing pictures with the researcher’s short descriptions.

The results of both tasks showed that the children performed better as their ages increased. The critical point of fully comprehending Hakka passives fell on the age of five; their correct production of the construction was late, possibly between ages five and six.

The results also indicated that factors of subject animacy and reversibility were influential only on the youngest subjects (aged four) but not on the older children. The

results on reversibility generally agreed with the literature (cf. Bever 1970, Herriot 1970, Baldie 1976, Sudhalter and Braine 1985) that there was a tight relationship between reversibility and subject animacy. The 4-year-olds were inclined with reversible passives with animate subjects.

Our subjects of all ages performed worst on experiential verbs, showing that this type of verbs was not typical in Hakka passives. About the ungrammaticality of truncation in Hakka passives, the subjects generally did not perform as well as they did on full passives. With regard to the bi-status pronoun, it was found that the expletive in passives should be the default setting. Neutralization of *bun* and *tung* in Hakka was acquired at latter stages. The expletive interpretation can thus be assumed as an unmarked form of the bi-status pronoun in the special construction.

Nevertheless, the pilot study was inevitably deficient in certain aspects. First, there were less than ten children in the study. Only two subjects in every age group might not be representative enough. We thus proceeded with a qualitative study, but with limited time the study was not thoroughly detected.

In addition, not all properties of the *bun* construction were examined in the pilot study. The bi-status pronoun in a special construction, for instance, was confusing for adult native speakers (cf. Chiang 2006), let alone for young kids. In this special construction, the real referent of the pronoun was usually out of concern by adult speakers, and thus, both interpretations for the bi-status pronoun were only mentioned by the linguistic hypothesis. Moreover, “reversibility,” in fact may be constrained by animacy of the subject or object. The overlapping designs of the pilot study failed to clarify the real issue. In view of these deficiencies, a thorough investigation is needed.

### 3.3.2 Formal Study

Before the formal experiment was administered to the subjects, a training section

was given to them to insure their understanding of the task. The subjects heard eight active practice sentences and were asked to act upon pictures to familiarize them with the procedures. The protocol is as follows:

Table 3- 5: Sample Dialogues Used in the Training Section

| | |
|---|---|
| Subjects saw:<br>  | Subjects heard:<br>Experimenter:<br>***Lia tieu gieu don ok, gi voi dui chale.***<br>this CL dog very mad it MOD chase car<br>***Liha gieu zo makgai?***<br>now dog do what<br>'This dog is so angry that it is chasing the car. What is the dog doing?' |
| Subject: ***Gieu Dui chale.***<br>dog chase car<br>'The dog is chasing a car.' | Experimenter:<br>***Don kian. Liha ngi tang masa***<br>very good now you listen which-one<br>***gon gai he cok gai.***<br>speak CSC be correct CSC<br>***Gon chok gai ngin ngi si mia***<br>speak correct CSC person you SI touch<br>***gia tieuna i ha.***<br>his head one time<br>'Very good. Now you listen, and decide which one is correct. You can touch the head of the puppet who says the correct |

| | |
|---|---|
| Subject saw:<br>   | sentence.'<br>Piggy: ***Chale dui gieu***.<br>car chase dog<br>'The car chases the dog.'<br>Monkey: ***Gieu dui chale***.<br>dog chase car<br>'The dog chases the car.'<br>Experimenter:<br>***Masa gon gai he chok gai?***<br>which-one speak CSC be correct CSC<br>'Which one is correct?' |
| Subject: [Touch Monkey's head] | Experimenter: ***Don kian***.<br>very good<br>'Very good.' |

After ensuring their abilities, the formal experiment began, with the two tasks applied in sequence. It proceeded in one of the classrooms of the subjects' school. In the classroom, the experimenter interacted with the subject individually. In completing the task, the subject may ask questions if s/he was unsure of the lexical items. The picture-cued production task (the PP Task) was conducted first where the subject needed to describe the behavior of the patient in the picture. The subject was asked to answer questions with Hakka passives. The subjects' answers were recorded and then were analyzed later. The PP Task took each subject about fifteen minutes to complete.

In the PS Task, the two puppets were introduced again, and the subjects were invited to play a game named "Which puppet is smarter?" with the experimenter. In the game, each subject needed to select a puppet out of the two. Sentences were randomly ordered

and uttered by the two puppets in the experiment. This task took each subject about fifteen minutes to finish.

### 3.3.3 Scoring and Statistical Analysis

In this section, we will explain how the subjects' responses will be scored and how the results will be analyzed.

In the PS Task, sentences of all types were examined. If the subjects made a correct choice from the two puppets, they would obtain one point for every property of the *bun* construction. No point would be given if they did not make response[1] or made a wrong choice.

In the PP Task, sentences of all types of test items were elicited. The recorded utterances of the subjects would be examined. For every target item the subjects produce, one point would be given. If not, no point would be given. For errors made by the subjects, a qualitative analysis would be conducted later.

The data obtained from each task was entered into SPSS (Statistical Package for Social Science) and processed by the computer. To sum up, the procedures of the present study is shown in the following figure.

[1] If the subjects show hesitations and do not respond, then they will not be given any point.

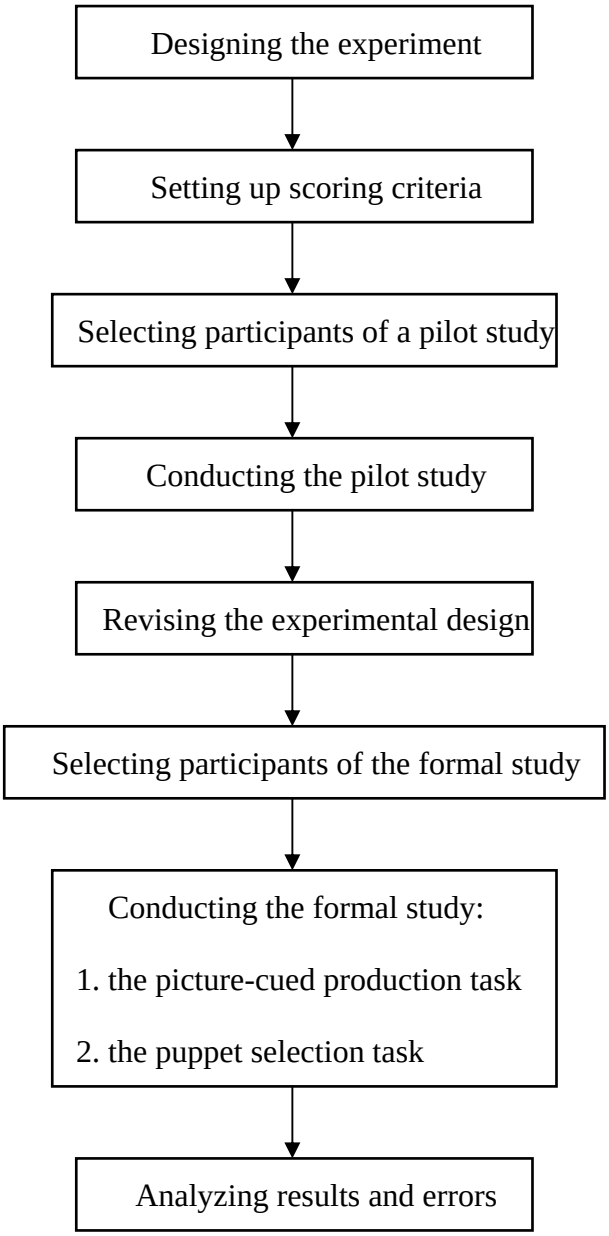


Figure 3-1: The Procedures of the Overall Research

## 3.4 Summary of Chapter Three

In this chapter, we have introduced the backgrounds of the subjects, the method, and materials used in the two tasks (i.e., PP Task for production and PS Task for comprehension). In addition, the procedures (a pilot study, formal study, and scoring policy) were also described.

# Chapter Four
# Results and Discussion

In this chapter, the results of the study will be presented, and the answers to the research questions will be discussed. Section 4.1 addresses the effects of the six properties of Hakka passives on L1 acquisition. Section 4.2 further interprets the difficulty of each sub property. Then, the effects of the two tasks are detected in Section 4.3. In Section 4.4, patterns other than target sentences found in the production task are analyzed. Finally, Section 4.5 summarizes the main points of this chapter.

## 4.1 Property Effects

This section is to answer the first research question, aiming to find out the effects of the six properties on L1 acquisition of Hakka passives: No Truncation (TC), Syntactic Complexity (SC), Resumptive Pronoun (RP), Adversity (AV), Animacy/Inanimacy (AM), and Verbal Transitivity (VT). Let us begin with the general results of the experimental group and the control group, as shown in Table 4.1.

Table 4- 1: Subjects' Correct Responses on the Properties of Hakka Passives in the Two Tasks (in average means)

| Property / Group | TC | | SC | | RP | |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD |
| Experimental | 0.64 | 0.22 | 0.63 | 0.26 | 0.54 | 0.26 |
| Control | 0.99 | 0.03 | 0.99 | 0.03 | 0.92 | 0.12 |
| Property / Group | AV | | AM | | VT | |
| | Mean | SD | Mean | SD | Mean | SD |
| Experimental | 0.66 | 0.24 | 0.68 | 0.22 | 0.64 | 0.24 |
| Control | 0.99 | 0.03 | 0.99 | 0.03 | 0.99 | 0.02 |

Among the examined properties of Hakka passives, RP was scored the lowest, where both the control group (M=0.92) and the experimental group (M=0.54) performed significantly worst ($p$ <0.050*)[1]. With regard to the other five properties, i.e., TC, SC, AV, AM, and VT, the control group performed nearly perfect (M=0.99). The experimental group, on the other hand, performed best on AM (M=0.68), followed by AV (M=0.66) ($p$=0.117), VT (M=0.64) ($p$=0.003*), TC (M=0.64) ($p$=0.004*), SC (M=0.63) ($p$=0.002*), and RP (M= 0.54) ($p$=0.000*). The experimental group performed on SC, TC, and VT similarly ($p$ >0.05) though SC was scored slightly lower on average. Therefore, the hierarchy of the main properties for our young subjects can be summarized from easy to difficult as AM = AV > VT =TC =SC > RP.

From the findings above we could gain some insights into the L1 acquisition of the six main properties of Hakka passives. First, the average performances of the control group were apparently better than those of the experimental group. This "gap" suggested

[1] Please refer to Table (i) in Appendix E for more detail.

that our children did not master the passive construction at the initial stage in their language development, confirming what literature has indicated (cf. Sudhalter and Braine 1985, De Villiers and de Villiers 1978). In light of this, a certain period seems necessary for children to accurately perceive and produce passive sentences. As to how long the period is, we will delve into the performance of each age group.

Second, both the adults and children performed worst on the Resumptive Pronoun. This result can be attributed to *the markedness theory* (Chomsky 1980). Adults' poor scores had indicated that the passive with this property was infrequently used in Hakka; thus it should be considered a marked pattern. The marked pattern, accordingly, would be acquired late cross-linguistically (cf. Chomsky 1980, Radford 1981, Goodluck 2000). Furthermore, basing on studies of passives acquisition in Hebrew, German, and Sesotho, Demuth (1989) proposes a *typological/ frequency argument* that if a grammatical construction appears much later in language development, chances are that it is learned on a language-specific basis (cf. Tseng 1997). Also, adults' spontaneous speech is a key to children's understanding and production of passives, the view later reconfirmed by Radford (1997). Thus, two prerequisites to decide the acquisition of passives are (a) the role that passives play in a language, and (b) the frequency of use (cf. Tseng 1997). Due to the marked status[2] of the Resumptive Pronoun in Hakka and the lack of sufficient input and exposure to adults' speech, our Hakka children could not well acquire this property.

Third, in young speakers' performances we noted that there was a rough distinction between syntactic and semantic properties, where the latter had some kind of priority in children's development of Hakka passives. As can be seen in the primary data, properties such as Animacy/Inanimacy, Adversity, and Verbal Transitivity, generally shared an

[2] Thanks to a personal communication with Prof. Fahn Rueih-Ling, an expert of Hakka Syntax, the marked status of the non-gapped passive was confirmed.

average score of more than 0.64. In contrast, syntactic properties such as the Resumptive Pronoun, Syntactic Complexity, and No Truncation, were scored lower than 0.64. This result showed that semantic properties were easier for our children to acquire. Interestingly, our finding corresponds to what literature argues for the developmental order of syntactic and semantic knowledge. A general account holds that semantics goes first, while syntax late (cf. Goodluck 2000). Advocates of this argument point out a close relationship between semantics and syntax, called “semantic bootstrapping,” where semantic knowledge is mainly used by children to identify the basic rules of syntactic components (cf. Macnamara 1982, Pinker 1982). Our result lent a support to the view by showing that semantic notions were easier than syntactic properties in the L1 acquisition of Hakka passives. However, we also noticed that no clear cut was found between No Truncation and Verbal Transitivity, where the former between the two properties was grouped as a syntactic property, while the latter a semantic property. We will clarify this result later by looking into the performances of each age group.

Figure 4-1 presents the performance of each group, together with the comparison with adult speakers’ responses.

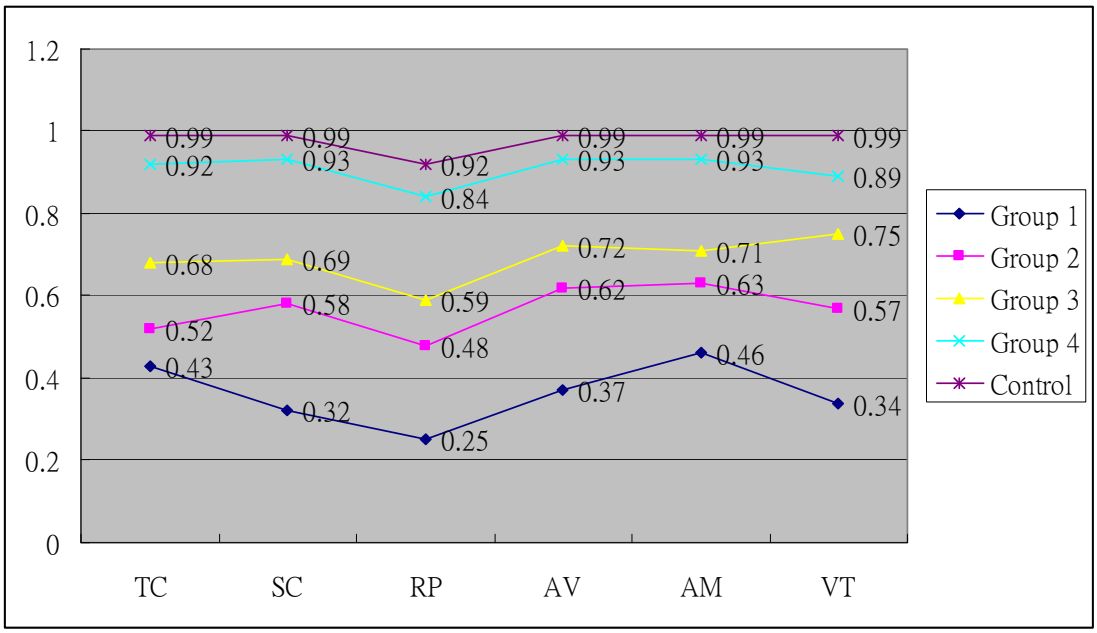


Figure 4-1: Subjects' Correct Responses on Hakka Passives in the Two Tasks (in average means)

Figure 4-1 shows that our young subjects performed better as their ages increased. Moreover, performances of Group 4 (age 7) had reached to the adult level ($p > 0.05$)[3]. By contrast, results of Groups 1 to 3 were found significantly worse than those of the control Group. Among them, Group 2 (age 5) generally performed better than Group 1 (age 4), except on TC, where no difference was detected. The performances of Group 3 (age 6) were better than those of Group 2, especially on VT.

The finding that children reach the full maturation of Hakka passives quite late can be found in other languages such as English, Mandarin Chinese, German, and Hebrew as well. English-speaking children cannot accurately understand passives even at age 4 or 5 (cf. De Villiers and de Villiers 1978, Sudhalter and Braine 1985). Children speaking Mandarin Chinese do not master passive sentences until the age of 6 (cf. Tseng 1997). In German, not until the age of 5 can children use verbal passives frequently (cf. Mill 1985,

[3] Please refer to Table (ii) in Appendix E for more detail.

Tseng 1997), while in Hebrew children do not speak verbal passives before 8 and the *by*-phrase before 10 (Demuth 1989, Tseng 1997).

In addition, the Resumptive Pronoun was the most difficult property for all subjects, confirming our previous conclusion that the marked properties play a role in children's acquisition of passives. Except for the Resumptive Pronoun, in fact, certain tendencies were found in our subjects' responses. For instance, Animacy/Inanimacy and Adversity were the easiest properties for most children. What follows are the hierarchies of the main properties in each group:

(1) Group 1: AM > TC > AV > VT > SC > RP

Group 2: AM = AV > SC = VT > TC > RP

Group 3: VT > AV = AM > SC = TC > RP

Group 4: AM = AV = SC = TC > VT > RP

Control: AM = AV = SC = TC = VT > RP[4]

As we can see in (1), there was a mismatch between semantics and syntax again. The results of each age group indicated that semantic properties were considered easier than the syntactic properties. In particular, our subjects' coherent preferences for Animacy/Inanimacy and Adversity argued for the relative easiness of semantic concepts. Concerning No Truncation and Verbal Transitivity, however, the fluctuations in the hierarchy seemed to deviate from the clear cut between semantic and syntactic properties. No Truncation was one of the easiest patterns for Group 1 but challenging for other experimental groups. Verbal Transitivity, on the other hand, theoretically should be easy, but was difficult for all children except Group 3. In fact, the correct responses of Group 1

[4] The equal sign suggested that for the control group no hierarchy was posed among categories of AM, AV, SC, TC, and VT.

on No Truncation were owing to certain children's preferences for non-truncated passives in the comprehension task, which depicted a strict gap in comparison with their poor production on the same property[5]. As to Verbal Transitivity, we found that the worse performances were obtained from one particular construction, i.e., passives with experiential verbs, where our children tended to perceive the elicitation as cause-and-effect[6] question. Other constructions under this category, on the other hand, projected less difficulty for our children.

### 4.2 Difficulty of Each Property's Sub Types

Further investigation of each sub property helps us understand more about its difficulty levels and how linguistic factors influence our subjects' language acquisition. Table 4-2 shows the results of the experimental group and the control group.

[5] Please refer to the task effect in Section 4.3.

[6] For example, our children usually answered question 21 in the PP Task with an active sentence *Baba siong mama* 'Father misses Mother' instead of the target passive sentence *Baba bun mama siong* 'Father was missed by Mother.' We will discuss the difficulty of each sub property in Section 4.2 later.

Table 4- 2: Subjects' Correct Responses on the Sub-Properties of Hakka Passives in the Two Tasks (in average means)

| Property / Group | TC | | | | SC | | | |
|---|---|---|---|---|---|---|---|---|
| | N-Truncated | | Truncated | | Long-distance | | Short-distance | |
| | M | SD | M | SD | M | SD | M | SD |
| Experimental | 0.67 | 0.23 | 0.60 | 0.25 | 0.59 | 0.33 | 0.67 | 0.23 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 1.00 | 0.00 | 0.98 | 0.06 |

| Property / Group | AM | | | | | | | | RP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A-A | | A-I | | I-A | | I-I | | Non-gapped | | Long-distance | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Experimental | 0.63 | 0.24 | 0.73 | 0.27 | 0.63 | 0.30 | 0.74 | 0.25 | 0.50 | 0.26 | 0.59 | 0.33 |
| Control | 0.97 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.83 | 0.24 | 1.00 | 0.00 |

| Property / Group | VT | | | | | | AV | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resultative | | Action | | Experiential | | Adversative | | N Adversative | |
| | M | SD | M | SD | M | SD | M | SD | M | SD |
| Experimental | 0.67 | 0.23 | 0.68 | 0.27 | 0.56 | 0.30 | 0.67 | 0.23 | 0.65 | 0.30 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 1.00 | 0.00 | 0.98 | 0.06 | 1.00 | 0.00 |

As can be seen in Table 4-2, with respect to TC, the experimental group performed better on non-truncated (M=0.67) than truncated (M=0.60) passives. Regarding SC, long-distance passives (M=0.59) were more challenging than short-distance (M=0.67) passives for our subjects. Non-gapped passives (M=0.50) were even more difficult than long-distance passives. As for AM, the subjects performed better on passives with inanimate agents (A-I: M= 0.73; I-I: M= 0.74) than those with animate agents (A-A, I-A: M=0.63). With regard to VT, experiential verbs were the toughest one to be acquired for our children (M=0.56). Moreover, statistic significances were found by the Paired-simples T-test[7] in response to these properties. However, there was no statistic difference found in response to AV or animacy of patient roles, i.e., A-I vs. I-I; A-A vs.

[7] Please refer to Table (iii) in Appendix E.

I-A. With respect to the control group, the statistic difference was only found in response to RP, where non-gapped passives were scored the lowest. With the above results, let us see if the same tendencies can be found in each age group. Table 4-3 shows the performance of each age group on sub properties.

Table 4- 3: Correct Responses of Each Group on the Sub Properties of Hakka Passives in the Two Tasks (in average means)

| Property / Group | TC | | | | SC | | | |
|---|---|---|---|---|---|---|---|---|
| | N-Truncated | | Truncated | | Long-distance | | Short-distance | |
| | M | SD | M | SD | M | SD | M | SD |
| 1 | 0.45 | 0.10 | 0.42 | 0.15 | 0.18 | 0.20 | 0.45 | 0.10 |
| 2 | 0.60 | 0.13 | 0.43 | 0.11 | 0.57 | 0.26 | 0.60 | 0.13 |
| 3 | 0.70 | 0.22 | 0.65 | 0.18 | 0.68 | 0.18 | 0.70 | 0.22 |
| 4 | 0.93 | 0.11 | 0.90 | 0.18 | 0.92 | 0.12 | 0.93 | 0.11 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 1.00 | 0.00 | 0.98 | 0.06 |

| Property / Group | AM | | | | | | | | RP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A-A | | A-I | | I-A | | I-I | | Non-gapped | | Long-distanc | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| 1 | 0.47 | 0.13 | 0.47 | 0.13 | 0.40 | 0.21 | 0.50 | 0.00 | 0.32 | 0.24 | 0.18 | 0.20 |
| 2 | 0.50 | 0.00 | 0.73 | 0.26 | 0.53 | 0.30 | 0.73 | 0.26 | 0.40 | 0.13 | 0.57 | 0.26 |
| 3 | 0.63 | 0.23 | 0.77 | 0.26 | 0.63 | 0.23 | 0.80 | 0.25 | 0.50 | 0.21 | 0.68 | 0.18 |
| 4 | 0.93 | 0.18 | 0.93 | 0.18 | 0.93 | 0.18 | 0.93 | 0.18 | 0.77 | 0.20 | 0.92 | 0.12 |
| Control | 0.97 | 0.13 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 0.83 | 0.24 | 1.00 | 0.00 |

| Property / Group | VT | | | | | | AV | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Resultative | | Action | | Experiential | | Adversative | | N-adversative | |
| | M | SD | M | SD | M | SD | M | SD | M | SD |
| 1 | 0.45 | 0.10 | 0.37 | 0.19 | 0.20 | 0.14 | 0.45 | 0.10 | 0.28 | 0.23 |
| 2 | 0.60 | 0.13 | 0.60 | 0.16 | 0.50 | 0.23 | 0.60 | 0.13 | 0.63 | 0.21 |
| 3 | 0.70 | 0.22 | 0.82 | 0.23 | 0.73 | 0.20 | 0.70 | 0.22 | 0.73 | 0.20 |
| 4 | 0.93 | 0.11 | 0.93 | 0.11 | 0.82 | 0.15 | 0.93 | 0.11 | 0.93 | 0.11 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 1.00 | 0.00 | 0.98 | 0.06 | 1.00 | 0.00 |

As can be seen in Table 4-3, truncated passives were consistently more challenging than non-truncated passives for each age group. However, Groups 1 and 2, and Groups 2 and 3 performed similarly ($p > 0.05$)[8], showing that our subjects performed better

[8] Please refer to Table (iv) in Appendix E.

gradually from ages 4 to 6, but that they improved dramatically from ages 6 to 7. In response to SC, similarity can also be obtained between Groups 2 and 3 on both long- and short- distance passives. Neither was a significant improvement between Groups 1 and 2 on short-distance passives. Nonetheless, with respect to long-distance passives the youngest group (i.e., Group 1) scored the worst (M=0.18), contributing to a significant difference with results of Group 2. Concerning RP, our subjects performed better on long-distance than non-gapped passives, except Group 1. As for non-gapped passives with resumptive pronouns, no significant difference was found from Groups 1 to 3 ($p>$ 0.05), scoring averagely low. Regarding AV, the performances of Groups 1 and 2, and Groups 2 and 3 on adversative passives displayed a gradual development, with no difference being found. On non-adversative passives, a significant improvement was shown from Groups 1 to 2. However, Groups 2 and 3, and Groups 3 and 4 performed similarly. As for AM, Group 3 (at age 6) performed as well as our adults on passives with inanimate agents, i.e., A-I and I-I passives, where no significant difference was found between Group 4 and the control group. With respect to passives with animate agents, our subjects attained full acquisition at age 7. As for VT, the experimental groups tended to perform worst on experiential verbs, except Group 3.

The results above displayed profound implications for theoretical premises. With regard to No Truncation, the results showed that our older children had no problem producing full (or non-truncated) passives with specified objects. However, they were apt to omit the post-*bun* NPs (or objects) which were unspecified. In other words, the application of a general human pronoun in the post-*bun* position, as in *Mama bun* ***ngin*** *hak do* ‘Mother was frightened (by someone),’ was proven to be challenging to the children. This difficulty may result from two reasons. First, our subjects needed more time and efforts mastering unspecified common nouns than specified common nouns (cf. Brown 1973). The other was the influence of Mandarin Chinese passives, which sets no

restriction on the presence of an object. According to Kuo (1995), the full form is much more extensively used in Chinese children's speech, and is hypothesized as the prototypical form. And thus, our subjects might omit objects based on the pragmatic requirement. In other words, full forms are usually uttered with a generic agent in 'normal' Chinese passives (c.f. Wang 1944), while truncated forms are made especially when they intend to stress the result in specific contexts. However, Hakka passives lack this flexibility; therefore, more time would be needed for our children to acquire the obligatory presence of the post-*bun* NP in Hakka, both specified and unspecified.

As for Animacy/Inanimacy, we found that agent animacy had significant influence on children before age 7. This result showed that our children preferred inanimate to animate agents. The former is as in *Mama bun* ***coido*** *got do le* ('Mother was cut by the knife') (A-I) and *Bozhi bun* ***tai fung*** *chui zeu le* ('Newspaper was blown away by the wind') (I-I); while the latter is as in *A-Bo bun* ***fai ngin*** *zok ziu le* ('A-Bo was caught away by the bad person') (A-A) and *Tong bun* ***cengin*** *siit tet le* ('Candy was eaten by the kid') (I-A). This finding seemed to be different from the traditional belief that animate NPs draw more attention than inanimate NPs (cf. Givon 1984, Kuo 1995). However, when delving into the passives with animate agents, we noticed that our children performed worst on A-A passives, which are the so-called reversible passives. The poor performances of our subjects on reversible passives confirmed Baldie's (1976) account that young children usually treat reversible passives as other patterns, e.g., active sentences. On the other hand, our children's preference to the A-I passives lent a support to what Harris's (1978) and Bock's (1986) finding that children passivized more to A-I passives than I-A passives. Accordingly, English-speaking adults and children are considered to passivize more to test pictures with animate patients and inanimate agents than to those with inanimate patients and animate agents (cf. Bock 1986, Harris 1978, Tseng 1997). This indicates that the combination of an animate patient and an inanimate

agent is frequently used in a passive sentence. However, the same preference is not found from the adults. As for patient animacy, it was found insignificant as the role in the acquisition of Hakka passives, which is in an agreement with Tseng's finding in the acquisition of Chinese passives (1997). Our study confirmed the literature that animacy did play a role in children's language acquisition (cf. Bock 1986, Dewart 1979, Harris 1978, Kuo 1995, Lempert 1984, 1989, 1990, Tseng 1997).

Concerning Verbal Transitivity, the results substantiated previous findings by indicating that children at 4 and 5 performed better on passives with action and resultative verbs than experiential verbs. In their studies of English, Maratsos et al. (1987) found that action verbs were used more frequently than non-action verbs in children's passive constructions. Sudhalter and Braine (1985) also found that action verbs preceded experiential verbs in passives acquisition. Maratsos et al. (1987) found that action verbs were much easier than mental verbs in passives. This might result from the main attention children pay to the semantic prototypical role signified by the main verb. Kuo (1995) confirmed that transitivity might matter in the acquisition of Chinese passives by observing children aged 2-6. In Tseng (1997), with an introduction of a new subtype unique to Mandarin, i.e., the resultative verb, she reported that her children preferred the action verbs passives and resultative verbs, but that disliked experiential verbs. The present study shows a similar situation in the acquisition of Hakka passives.

As for Adversity, the study showed that only the four-year-olds preferred adversative passives, but that the older kids and the control group expressed no special preferences. Our youngest subjects' choices may reflect the unmarked settings in the brain. However, when they were exposed to adults' input, they began to accept non-adversative passives. In fact, the prototype of adversative reading can be found in Mandarin Chinese: If the verb entails a positive meaning in the construction, the sentence will be considered awkward (cf. Tseng 1997). Also, in spoken Chinese, passive sentences are sustained as

the adverse expressions (Chao 1968, Hashimoto 1988, Li and Thompson 1981). However, the neutralization of adversative and non-adversative passives is commonly seen in Mandarin Chinese. It has been found that due to the 'translatese' (Chao 1968), i.e., the non-adverse *bei* sentence from translating foreign passives (Li and Thomson 1981:496), adversity becomes an unnecessary property of Chinese passives, especially in written language (Chao 1968). In particular, scientific and academic writing are mainly involved. Hakka natives were probably under the same influence of the neutralization. The other possibility for the insignificant difference between adversative and non-adversative passives may lie in children's interpretations. They may see non-adversative passives as the ones with adversative implications and interpreted them as negative sentences.

Turning to the sentence patterns involved in properties of Syntactic Complexity and Resumptive Pronoun, we noted that the syntactic derivation of the non-gapped passive and the long-distance passive in Chinese have been put into question[9] in linguistic literature. They are said to have same effects with what can be observed in relative clauses. However, theories on relativization strategies are somewhat controversial (cf. Huang et al. 2008, Mei 1978, Sanders et. al 1972), which results in their undetermined status and thus complex in grammatical structure. When we put them into the child's language acquisition, we found them more difficult than the simple patterns, i.e., the short-distance passives. The result accorded to the viewpoint that the more complex a structure is, the more time a child would need to get full acquisition (Borer and Wexler 1987). However, the difference between long-distance passives and short-distance passives disappears when children grew older than 5. On Resumptive Pronoun, on the other hand, the non-gapped passive was more difficult than the long-distance passive except for Group 1, suggesting that our children's poor performance on the non-gapped passives afterwards were highly influenced by adults' speech.

[9] Please refer to Section 2.1.3.

After discussing the subjects' responses on each sub property with the literature findings, let us see if the data collected in this section corresponds to the results concerning the semantics-syntax mismatch obtained from Section 4.1. As can be seen in Table 4-2, the properties showing significant differences were mainly those which exert more syntactic concepts, i.e., No Truncation, the Resumptive Pronoun, and Syntactic Complexity. On the other hand, comparisons within semantic-related properties such as Adversity, Verbal Transitivity, and Animacy were found less significant. However, one may notice that among semantic properties such as Animacy and Verbal Transitivity, unexpected differences were found, e.g., inanimate agents (A-I and I-I) were scored higher than animate agents (A-A and I-A). In fact, the significant difference was attributed to syntactic caterogies rather than semantic notions. In the former combinations, when the object positions were occupied by inanimate roles, whether the subject was animate or not was without any difference. In the latter where the object positions were occupied by animate roles, whether the subject was animate or inanimate did not matter, either. However, when comparing I-I with I-A, and A-I with A-A, significant differences were revealed. When the subject positions were occupied by inanimate roles as in I-I and I-A, whether the object positions were animate posed a significant difference. Similarly, the situation was found in A-I and A-A. Therefore, the difference in Animacy/Inanimacy was actually due to a subject-object asymmetry[10]. The present study indicates that the importance of the subject position weighs over that of the object position. The other significant difference found in semantic properties was the experiential verb. Except the reason that the experiential verb was not prototypical in passives, our subjects' poor performances might also result from its infrequent use in Hakka passives. As what we

[10] Subject and object positions exert asymmetrical influences on children's language acquisition (cf. Cao 2003, Karin 1995, Suzuki 2000, etc.). The phenomenon can be found in the acquisition of Chinese relative clause (Cao 2003), Enlighs Wh-question (Karin 1995), Japanese Case-Marking Particles (Suzuki 2000), and so forth.

suggested before, our children treated the patterns with experiential verbs as cause-and-effect questions and thus failed to produce passive sentences.

### 4.3 Task Effects

In the research of L1 acquisition, the validity of different tasks has always been a heated issue (cf. Brown 2000, Chen 2003, Ringbom 1992, Shen 2006, Wen and Wu 1997, etc.). To attain an unbiased fact, both the production task (i.e., the PP Task) and the comprehension task (i.e., the PS Task) were adopted in the present study to see if the outcomes could support the research questions. The PP Task examined the subjects' use of Hakka passives according to the pictorial scenarios and the experimenter's elicitation. The PS Task, on the other hand, looked into the subjects' instinct judgments on Hakka passive sentences with two pictures and a stimuli question. Figure 4-2 presents the experimental group and the control group's performances on the two tasks.

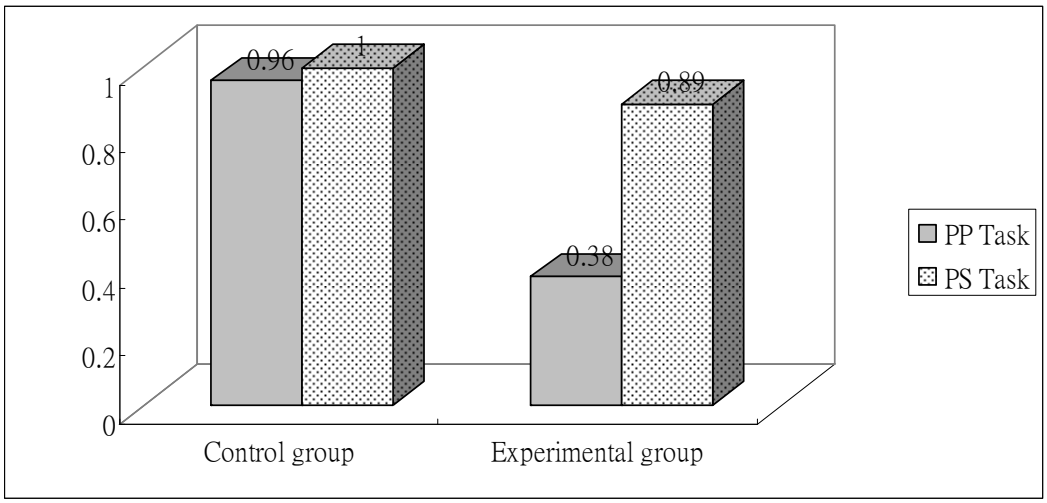


Figure 4-2: Subjects' Correct Responses to the Two Tasks (in average means)

Figure 4-2 shows that the control group performed similarly well (PP: 0.96 vs. PS: 1.00; $p$=0.080) on the two tasks. However, the experimental group showed partiality in the comprehension task (PP: 0.38 vs. PS= 0.89; $p$=0.000*). Let us further examine each age

group's responses to see if the tendency is consistent with what we had found. Figure 4-3 displays the mean scores of the experimental groups' performances on the two tasks.

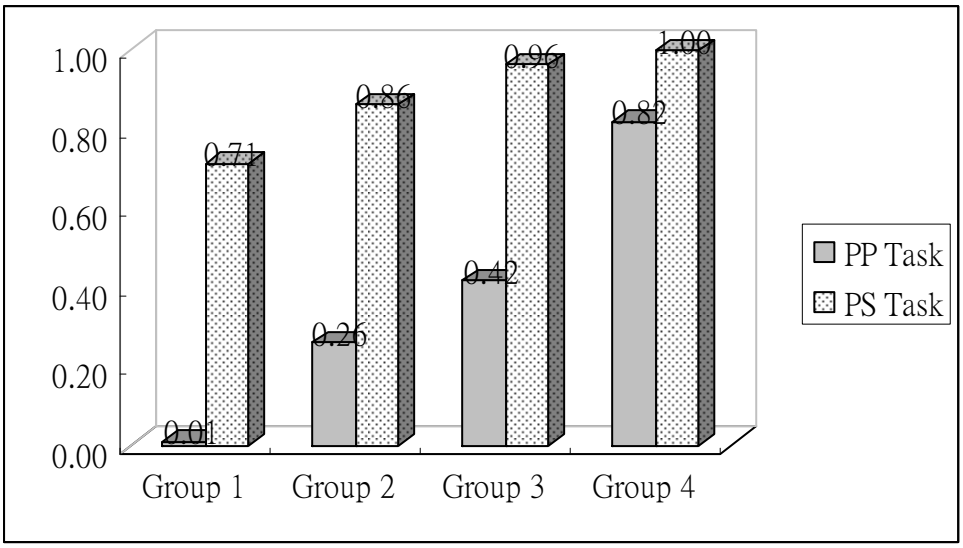


Figure 4-3: The Experimental Groups' Correct Responses to the Two Tasks (in average means)

In Figure 4-3, an agreement was depicted among the four age groups: The subjects performed better on the comprehension task than on the production task. Among them, Groups 1, 2 and 3 consistently showed a significant difference in the two tasks, showing a task effect; while the performance of Group 4 was close to the adult level. Group 1 got merely less than 1 point (M=0.01) in the PP Task, but performed outstandingly on the PS Task (M=0.71) ($p$=0.000*). The mean scores of Group 2 raised to 0.26 in the PP Task, and 0.86 in the PS Task, and there was a significant difference between the two tasks ($p$=0.000*). The performances of Group 3 on the PS Task almost reached to full marks (M=0.96), but their responses on the PP Task were far less by contrast (M=0.42) ($p$=0.000*). As to Group 4, their PP Task still got lower grades, but it was much close to their responses to the PS Task (PP: 0.82 vs. PS: 1.00, $p$= 0.381). In general, the task effect was found in each group except Group 4, who was almost adult-like.

Now let us see if the task effects can be found in each property. Table 4.4 presents the responses of the experimental group and the control group to the two tasks.

Table 4- 4: Subjects' Correct Responses on the Properties of Hakka Passives in the Two Tasks (in average means)

| Property | TC | | | | SC | | | | RP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Task / Group | PP | | PS | | PP | | PS | | PP | | PS | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Experimental | 0.47 | 0.43 | 0.95 | 0.13 | 0.52 | 0.43 | 0.89 | 0.18 | 0.43 | 0.41 | 0.84 | 0.27 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 0.98 | 0.06 | 1.00 | 0.00 | 0.83 | 0.24 | 1.00 | 0.00 |
| Property | AV | | | | AM | | | | VT | | | |
| Task / Group | PP | | PS | | PP | | PS | | PP | | PS | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Experimental | 0.54 | 0.40 | 0.91 | 0.17 | 0.52 | 0.43 | 0.97 | 0.09 | 0.53 | 0.38 | 0.89 | 0.17 |
| Control | 0.98 | 0.06 | 1.00 | 0.00 | 0.98 | 0.06 | 1.00 | 0.00 | 0.99 | 0.04 | 1.00 | 0.00 |

As can be seen in Table 4-4[11], there was no task effect ($p$>0.050) in the adult speakers' responses to all properties except RP, where they performed significantly poorly on the PP Task (PP: 0.84 vs. PS: 1.00, $p$=0.031*). This confirmed the finding that RP was infrequently produced in Hakka passives. Our children's performances, on the other hand, showed a task effect. Their correct responses to the PS Task were up to 80%. However, their performances on the PP Task were completely a far cry: less than 55 % correct on all properties. With regard to TC, the mean score in the PS Task (M=0.95) was significantly higher than that in the PP Task (M=0.47) ($p$=0.000*) (Notice that performances on TC in the PS Task were relatively better than other properties.) As for

[11] For each age group's statistic results, please refer to Table (v) in Appendix E.

SC, the results of the PS Task (M=0.89) won over those of the PP Task (M=0.52) ($p$=0.000*). With respect to PR, the children's comprehension (M=0.84) was better than production (M=0.43) ($p$=0.000*). As for AV, our children's responses to the PS Task (M=0.91) were higher than those to the PP Task (M=0.54) ($p$=0.000*). Regarding AM, what we got in the PS Task (M=0.97) was still better than the PP Task (M=0.52) ($p$=0.000*). Finally, our children performed better on VT in the PS Task (M= 0.89) than in the PP Task (M=0.53) ($p$=0.000*). Apparently, there was a task effect when each property was taken into account.

Given these results above, we can see that our children performed outstandingly well on the comprehension task. They gave over 75% correct responses to grammatical sentences at age 5, and reached the adult level at age 6, which can be seen as a cutoff point for children to acquire Hakka passives. However, their utterances were far different. Not until age 7 did our children show similar abilities as the adult speakers. Before age 7, they understood more than actually spoke. Our findings of the production task here lent support to Tseng (1997) on the acquisition of the Chinese *bei*-construction, where the children in the comprehension task[12] hardly made errors. In fact, the superiority of the children's performances on the comprehension task showed that they already had competences in minds, but required more time to master oral performances. According to Brown (2000), the deficiency of children's utterances does not necessarily imply the lack of conception. For instance, children may not be able to produce a sentence with an embedded relative clause in it but they may be able to understand the one. This kind of gap has been indicated by several studies on L1 Chinese acquisition. In Chen (2003) on Chinese connective devices acquisition, it is found that children's comprehension of conjunctions is better than their production. The similar task effect is revealed in Chinese topic construction, where children outperform in their comprehension task (Shen 2006).

[12] In Tseng (1997), an act-out/imitation task was employed to detect Chinese children's comprehension.

Our finding made this ground more solid by bringing out the same discrepancy found in the acquisition of Hakka passives.

### 4.4 Other Patterns Elicited

The last question is to examine patterns that other than the target sentences Hakka children made in the PP Task. Analysis of the children's production would facilitate our understanding of the characteristics and the process of children's language development (e.g. Bever 1970, etc.). Six major patterns were found in response to our target Hakka *bun* sentences, including 1) *no elicitation*, where the subjects remained silent; 2) *key words*, where only one related noun or verb was produced; 3) *active expressions*, where the active patterns were used; 4) *passive expressions*, where the children were able to utter passive sentences, but with some omissions or substitutions; 5) *code-switching*, where Mandarin Chinese was applied; and 6) *ungrammatical sentence*, where the utterances disagreed with Hakka grammar. Table 4-5 exemplifies sentences under each category and compares the error frequency of the experimental group with that of the control group.

Table 4-5: Other Responses Elicited in the PP Task

| Type | Example Sentence | Results | |
|---|---|---|---|
| | | Experimental | Control |
| No elicitation | -- | 374 (48.26%) | 0 |
| Key words (E: 206; C: 0) | Verb<br>***Mia***. (G1S3)<br>touch | 69 (8.90%) | 0 |
| | Noun<br>***Bozhi.*** (G2S4)<br>newspaper | 137 (17.68%) | 0 |
| Active expressions (E: 119; C: 0) | Topic-(S)-VP<br>***A-Bo fai ngin zok ziu le***. (G3S4)<br>A-Bo bad person catch away ASP<br>'A-Bo, the bad person caught away.'<br>***Mama hak do***. (G3S11)<br>Mother frighten DO<br>'Mother, being frightened.' | 74 (9.55%) | 0 |
| | S-VP<br>***Baba cim do didi le***. (G3S3)<br>Father find DO Brother ASP<br>'Father had found Brother.'<br>***A-Bo zok ziu fai ngin le.*** (G4S6)<br>A-Bo catch away bad person ASP<br>'A-Bo caught away the bad person.' | 45 (5.80%) | 0 |
| Passive expressions (E: 21; C: 8) | Omission of post-*bun* NP+main verb<br>***Fai ngin bun ginchak zok ziu le***. (G3S2)<br>bad person BUN police catch away ASP<br>'The bad person was caught away by the police.' | 11 (1.42%) | 0 |
| | Omission of resumptive pronouns<br>***Didi bun baba fak so tinai***.(G3S14)<br>Brother BUN Father punish clean floor<br>'Brother was punished by Father to clean the floor.' | 6 (0.77%) | 6 (75%) |
| | Substitution of key words<br>***Didi bun baba chufak.*** (G3S5)<br>Brother BUN Father punish<br>'Brother was punished by Father.' | 4 (0.52%) | 2 (25%) |
| Code-switching (E: 6; C: 0) | *A-Bou bei huai ren jhua zou le*. (G3S9)<br>A-Bou BEI bad person catch away ASP<br>'A-Bou was caught away by the bad person.' | 6 (0.77%) | 0 |
| Ungrammatical responses (E: 49; C: 0) | **Didi bun cau siang*. (G3S1)<br>Brother BUN annoy awake<br>'Brother was annoyed awake.' | 49 (6.32%) | 0 |
| Total | | 775 | 8 |

As shown in Table 4-5, there were totally 775 unexpected responses produced by the experimental group, and 8 items by the control group. These 8 items were the omission of resumptive pronouns (75%) and the substitution of key words (25%). The responses of the experimental groups, on the other hand, displayed the six patterns. Among them, *no elicitation* (48.26%) took up the largest proportion of all patterns, followed by *key words* (26.58%) as the second, and then *active expressions* (15.35%), *ungrammatical responses* (6.32%), *passive expressions* (2.71%), and finally *code-switching* (0.77%). With regard to the categories of key words, it was found that nouns (17.68%) were produced more than twice as many as verbs (8.9%). With respect to *active sentences*, the pattern "Topic-(S)-VP" (9.55%) was found more than "S-VP" (5.80%). As for *passive expressions*, 11 items came from the deletion of the post-*bun* NP together with the main verb (1.42%), 6 (0.77%) were the resumptive pronoun omissions, which were quantitatively equal to the adults' adoption (n=6), and 4 substitutions of key words (0.52%).

From the above results, we noted that the 8 items found in the control group all derived from the non-gapped passives. Among them, three-forth of the responses were the omission of resumptive pronouns and one-fourth were using a verb phrase to reply, i.e., *chufak* 'to punish' or *sevon* 'to wash dishes,' to substitute the complex construction of "$verb_1$+ resumptive pronoun+ $verb_2$+ noun." This phenomenon again suggested an infrequent use of the non-gapped construction in Hakka passives. When dealing with the same construction, our children adopted similar strategies. However, more ungrammatical sentences were made. For instance, both object and resumptive pronoun were truncated, forming an awkward utterance, e.g., **Didi bun fak so tinai*, or the verb and the resumptive pronoun were deleted together, e.g., **A-moi bun mama sevon.*

Another noticeable point lied in the distinct weight among nouns and verbs produced by the subjects where the former was twice as many as the latter. Literature has

indicated that nouns are conceptually simpler than verbs (Gentner 1982), accounting for the findings that children's first words are primarily nouns rather than other categories (Genter 1978, Macnamara 1972, Nelson 1973). An abundant of evidence is drawn to make this ground solid: acquisition of English vocabulary (Greenfield and Smith 1976, Huttenlocher 1974), and cross-linguistic studies, i.e., Mandarin Chinese, Japanese, and German (cf. Gentner 1982). Our study lent a support to the subjects' preference for nouns when they were unable to make full sentences.

Third, the production of an active pattern "Topic-(S)-VP," which occupied almost one-tenth of answers given by the experimental group, was also an interesting issue. The pattern accords to what is called "the topic construction[13]" in Mandarin Chinese, i.e., topic +comment, which is considered "the grammatical meaning of subject and predicate in a Chinese sentence" (Chao 1968:69). Topics always occur in sentence-initial position to establish a "special, temporal, or personal frame/domain" for the following comment (Chafe 1976). When the grammatical subject (S) was saved in the comment, for instance, our subjects tended to produce *A-Bo fai ngin zok ziu le* 'A-Bo, the bad person caught away' instead of *A-Bo bun fai ngin zok ziu le* 'A-Bo was caught away by the bad person.' The topic is *A-Bo* as a personal frame/domain, while the comment is *fai ngin zok ziu le*, where the children were describing an event happening to the leading role. When the grammatical subject was left off from the comment, on the other hand, the sentence such as *mama hak do* 'Mother, being frightened' was produced instead of *mama bun ngin hak do* 'Mother was frightened (by someone).' The topic is *mama*, which is also a personal frame/domain, while the comment is *hak do*, where the children accentuated more on the description of *mama*'s state. Their treatment of these kinds showed the development of the topic construction, which can be seen in the Hakka dialect of Mandarin Chinese.

[13] Three major types of topic-comment constructions have emerged from the heated debate about the relationship between topic and subject in Mandarin Chinese (cf. Shi 2000). Since this is not the main focus of the study, we will not go into detailed discussion here.

The other active expression was through the use of a pattern "S-VP," which was also a strategy frequently used by the subjects. Two types were found in this pattern: normal actives and reverse actives. When "normal actives" were applied, our children conveyed correct messages but misallocated the positions of "topic" and "focus" functioning in passives (cf. Chafe 1976, Li & Thomspon 1981, Siewrierska 1984, Tseng 1997, Van Oosten 1984), where the former, the so-called "old information," occurs in sentence-initial place, while the latter, referred as "new information," often presents in sentence-final position. For instance, the children uttered ***baba*** *cim do didi le* 'Father found Brother' instead of the passive ***didi*** *bun baba cim do le* 'Brother was found out by Father.' In the latter, the topic is ***didi***, which is in line with the topic of the question ***didi*** *iongban?* 'What happened to Brother?' In their utterances, we found that they treated ***baba*** as a topic, which should be the focus in the target sentence. The collision of "topic" and "focus" showed that the children had not fully acquired the pragmatical aspect of passives.

By contrast, when "reverse actives" were produced, the subjects exchanged the positions of "agent" and "patient" roles in their active expressions. For instance, *baba siang mama* 'Dad misses Mom' was used instead of *baba bun mama siang* 'Dad was missed by Mom', and *celai nou cemoi* 'The boy hates the girl' instead of *celai bun cemoi nou* 'The boy was hated by the girl.' In the former sentence, the actor/agent should be *mama* in the target sentence rather than *baba* in the children's responses, while in the latter, the actor/agent should be *cemoi* other than *celai*. The tendency of these sorts indicated that the children interpreted test sentences as cause-and-effect questions. And thus, having reciprocal concepts in minds, they uttered active sentences with the reverse semantic roles inside. Intriguingly, verbs in these constructions are experiential verbs, i.e., *siang* 'to miss' and *nou* 'to hate,' which are the least competent verb type used in passives. Similar findings were found in Tseng's (1997) study of Chinese passive acquisition,

where her young subjects were liable to reverse the semantic roles in passives with experiential verbs. Our children's responses reinforced the assumption that experiential verbs are less prototypical as verbs in passive constructions.

Also noteworthy was a common phenomenon found in the children's responses: simplification, which was evident from the omission of the post-*bun* NP together with the main verb in the long-distance passive, becoming a short one. For instance, the children uttered *fai ngin bun gincha zok ziu le* 'The bad person was caught away by the police' instead of *fai ngin bun A-Bo hem gincha zok ziu le* 'The bad person was caught away by A-Bo's asking for the police's help.' Facing with this kind of construction, the children tended to shorten the target sentence by deleting the main verb and the real agent but preserving the sub-event verb, sub-event patient and agent. This indicated that syntactic complexity deterred our young children from performing well. At the same time, it was probably under the impulsion of pragmatic needs that the children paid more attention to the effect of an event rather than the cause.

Concerning the category of code-switching, it was found that two kids kept adopting Mandarin Chinese to answer certain questions, in whole sentences or the replacement of *bun* by Mandarin *bei*. This phenomenon might be attributed to their infrequent use of Hakka at home, resulting in their unfamiliarity with the passive construction. However, their use of Chinese passives showed that they had been already acquired the concept of passivization and they could comprehend the questions though they were unable to express fluently in Hakka.

Finally, our children were likely to truncate the post-*bun* NP, contributing to parts of ungrammatical responses in the last category, e.g., **A-Min bun tet do* ('A-Min was kicked'). The result showed that they needed more time to acquire the notion of no truncation, which is a typical property of Hakka passives. Also, when the structural object (the agent) is unspecific in semantics or pragmatics, it would be more challenging for our

children to add an expletive pronoun in the post-*bun* position, e.g., *A-Min bun* ***ngin*** *tet do* 'A-Min was kicked by someone.' The finding confirmed what we suggested in Section 4.2 that the filling-up with the functional morpheme, i.e., the expletive, is difficult for young speakers.

The distribution of error patterns provided a primary account of the subjects' development of Hakka passives. However, our children of different ages displayed different preferences and tendencies, signifying developmental characteristics specific to a particular age group. Table 4-6 illustrates the results of the four experimental groups.

Table 4-6: Error Responses of the Experimental Groups in the PP Task

| Group / Type | Group 1 | Group 2 | Group 3 | Group 4 |
|---|---|---|---|---|
| No elicitation | 179 (70.20%) | 135 (54.44%) | 51 (24.29%) | 9 (14.52%) |
| Key Words | 76 (29.80%) | 109 (43.95%) | 14 (6.67%) | 7 (11.29%) |
| Active expressions | 0 | 0 | 98 (46.67%) | 21 (33.87%) |
| Passive expressions | 0 | 0 | 7 (3.33%) | 14 (22.58%) |
| Code-switching | 0 | 2 (0.81%) | 3 (1.43%) | 1 (1.61%) |
| Ungrammatical response | 0 | 2 (0.81%) | 37 (17.62%) | 10 (16.13%) |
| Total | 255 | 248 | 210 | 62 |

As can be seen in Table 4-6, numbers of patterns other than the target sentences elicited in the production task were on the decrease with the growing of ages (G1: 255; G2: 248; G3: 210; G4: 62). Of these patterns, *no elicitation* was found frequently highest in Group 1 (179) and then Group 2 (135), and dropped dramatically as in Group 3 (51) and Group 4 (9). *Key words* were produced most frequently in Group 2 (109), and Group 1 (76) as the second high, and then plunged in Group 3 (14) and Group 4 (7). *Active expressions* (G3: 98, G4: 21) and *passive expressions* (G3: 7, G4: 14) were only found in Groups 3 and 4; the former was with a decreasing trend, while the latter was the other way around. *Code-switching* and *ungrammatical responses* were found in all groups except Group 1,

and their peaks fell in Group 3.

Looking into the production of each group, a rough line was drawn at the age of six when younger kids, i.e., Group 1 (age: 4) and Group 2 (age: 5), were nearly unable to answer the questions, either remaining silent or uttering fragments. Therefore, *no elicitation* and *key words* took up the majority of the results. Only small proportions were found in *code-switching* where Mandarin Chinese was used in a whole sentence and truncation of the post-*bun* NP was produced as ungrammatical responses. Furthermore, we noted that there appeared a complementary distribution between *no elicitation* and *key words* in the younger groups. The number of *key words* was increasing in Group 2 with the decrease of *no elicitation*, demonstrating the developmental traces.

After entering the age of six, the children did significantly better. Most of them were capable of using complete sentences to answer the questions, articulated by the diving figures under *no elicitation* and *key words*, though more varieties of sentence patterns were produced. Amid them, we found *active expressions* the most frequently made by the older children, particularly in Group 3 (age 6). Active sentences have been pointed out easier and thus earlier for children to acquire than passives (cf. Marchman 1991, etc.). Also, actives are more typical to be produced by contrast (cf. De Villiers and de Villiers 1978, Vicki and Braine 1985). The relative higher frequency in *active expressions* in the present study reconfirmed this ground. On the other hand, Group 3 was also at the starting line of making passive expressions, though the number was in the minority. The fact that Group 3 was at the summit of the production of actives and simultaneously at the beginning of passive expressions demonstrated a transitional phase, where they were still adapting themselves to the usage of passive constructions.

In addition, the 6-year-olds were at the age when the most *ungrammatical responses* and *code-switching* were produced. This is probably because the age of six was on the threshold of elementary school year, when Mandarin Chinese became the major language

to communicate in school. The high exposure to Mandarin Chinese might influence our children's speaking of Hakka. Therefore, they made more truncated passives, which are ungrammatical in Hakka but in line with the allowance of object omission in Mandarin Chinese. And also consequently, the children who attempted to use Mandarin Chinese were relatively more than other age groups.

As for Group 4, numbers of other patterns elicited diminished to the minimum, except *passive expressions*. This might be attributed to the decrease of numbers in passives such as *no elicitation*, *key words*, *active expressions*, *code-switching*, and *error responses*, showing a developmental progress found in Group 4, who performed almost as well the adult. On the other hand, children at age 7 mounted to produce more passives, including target and non-target passives. Their abilities of Hakka passives were near full maturation.

Three main stages to fully acquire Hakka passives can be defined accordingly: 1) Stage 1: *no elicitation* and *key words*, which were largely contributed by Groups 1 and 2; 2) Stage 2: *active expressions*; which were abundantly conducted by Group 3; and 3) Stage 3: *passive expressions*, where Group 4 was the major producers, as shown in Figure 4-4 as follows.

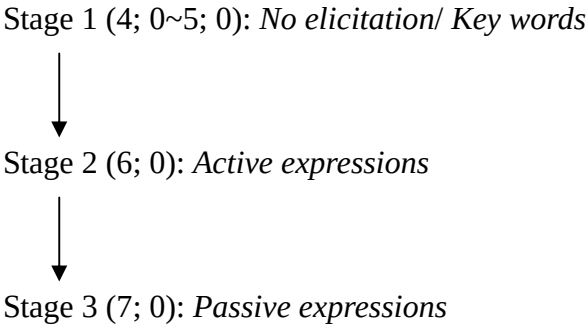


Figure 4-4: Developmental Trends Found in the PP Task

## 4.5 Summary of Chapter Four

In the present study, the overall results showed that different major properties, sub properties, tasks, and age, were all determinant factors affecting the acquisition of Hakka passives. It was found that our children did better on semantic properties, i.e., Animacy/Inanimacy, Adversity, and Verbal Transitivity, than syntactic properties, i.e., the Resumptive Pronoun, Syntactic Complexity, and No Truncation. Within each property, structures of different types exerted different levels of influence on children's language development. The rough tendency was that semantic concepts were easier than syntactic ones. In addition, the performances of the children on the two tasks depicted a discrepancy of comprehension and production, indicating a developmental gap in between. Patterns elicited other than target sentences could be considered as evidence for children's gradual maturation in language development. These findings showed that our children fully acquired Hakka passives quite late, nearly at the age of 7.

# Chapter Five

# Conclusion

This chapter presents the conclusion of the present study. The major findings are summarized in Section 5.1, followed by the limitations of the study and suggestions for further research in Section 5.2.

## 5.1 Summary of the Major Findings

This study investigated L1 acquisition of Hakka passives to see if the six properties (i.e., No Truncation, Syntactic complexity, the Resumptive pronoun, Adversity, Animacy/Inanimacy, and Verbal transitivity) play influential roles in children's developmental stages. On the focus of the research were issues of property effects, difficulties of each sub property, task effects, other elicited patterns, and age effects.

First, from the subjects' performances on the six major properties, a hierarchical sequence was found: Animacy/Inanimacy = Adversity > Verbal Transitivity = Truncation = Syntactic Complexity > the Resumptive Pronoun. This hierarchy showed a tendency that semantic concepts were less challenging than syntactic properties. Also, the Resumptive Pronoun as the most difficult property reflected its markedness and infrequent use by the adults.

The second issue considered difficulty of each sub property. With regard to No Truncation, the ungrammaticality of object omission was difficult. As for Syntactic Complexity, short-distance passives were easier than long-distance passives. Regarding the Resumptive Pronoun, the subjects did apparently worse on non-gapped passives. With respect to Adversity, similar performances were obtained from adversative and non-adversative passives. As for Animacy/Inanimacy, subject/patient animacy was not difficult, but object/agent animacy was. With regard to Verbal Transitivity, our children

did equally well on passives with action and resultative verbs, but not experiential verbs. It was also found that semantic-prominent patterns were less difficult for the subjects to acquire than syntactic-dominant ones.

Third, concerning the task effects, a gap was found between the comprehension and production tasks. Our children performed much better on the PS Task, were much better than on the production task, i.e., the PP Task. The same results were found in different age groups and in responses to the six major properties.

Fourth, six main types of strategies were found that the subjects employed in response to the PP Task: *no-elicitation, key words, active expressions, passive expressions, code-switching,* and *ungrammatical response*s. Three stages could be categorized to account for the developmental trend of each group.

Finally, it was found that our children performed better as their ages increased. Children at 4 and 5 performed similarly worse on every property. Only the youngest subjects showed preferences for adversative passives, which was not found in the older groups. Children at age 6 were able to master semantic-oriented properties, and their comprehension abilities were much adult-like. Children at age 7 were found to reach the adult level both in perception and production.

### 5.2 Pedagogical Implications

What kinds of utterances a child tends to produce at what ages has been addressed in many studies concerning first language acquisition (e.g. Brown 1973, Goodluck 2000). The developmental sequence infers that certain linguistic forms, patterns, or grammatical theories would be acquired ealier than others, which is cross-linguistically true (cf. Borer and Wexler 1987, Wexler 1999). In the present study, a developmental order of acquiring Hakka passives was found, which was in line with the previous findings that simplicity prevails over complexity and actives preponderates passives at the initial stage of

passives acquisition (cf. Baldie 1976, Marchman et al. 1991, Sudhalter and Braine 1985). Given the fact, it is suggested that when composing teaching materials, the developmental orders need to be considered, i.e., words, active patterns, and passive patterns.

### 5.3 Limitations of the Present Study and Suggestions for Further Research

In the following were limitations of the present study, leaving room for future research. First of all, due to the time limit, the study only accentuated the influence of properties in Hakka passives, unable to examine other aspects of passive types, i.e., the direct passive vs. the indirect passive. In the direct passive, the subject is co-referential with the object of the main verb, while in the indirect one, the subject is irrelevant to the object position in the predicate[1] (Huang 1999). Since similar phenomena can be found in Hakka passives, future studies can look into this topic.

Second, on account of children's short attention span, the present study did not employ a task of free production. The Picture-cued Production Task (the PP Task) applied in the present study was more like a controlled production task, where subjects were supposed to answer the question in certain sentence structures. This way of elicitation may be deficient to some extent. For instance, the pragmatic conditions are not fully considered (cf. Thornton 1995). To conduct a free production task, story-retelling and interviewing can be adopted. By doing so, effects of methodology would be reexamined.

Finally, this study mainly focused on the issue of the *bun* construction in Hakka without taking other related constructions into consideration. As one of co-verbs in Hakka, *bun* shares many grammatical features in common with other co-verbs, i.e., *lou*/*tung (*similar to *ba* in Mandarin Chinese*)*, and *bi* (similar to *bi* in Mandarin Chinese).

[1] For example, *Chuanghu bei nage nanhei dapo le* 'The window was broken by that boy' is a direct passive, while *Lisi bei Zhangsan maizou le ta zuei xihuan de naben shu* 'Lisi had Zhangsan buy the book which he liked most' is an indirect passive (Shiu 2001).

Further research can be done to see if similar developmental stages can be found in Hakka. Moreover, results can be compared with the findings of co-verbs in Mandarin Chinese to see if Universal Grammar is active in L1 acquisition.

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# Appendix A: Results Obtained from the Pilot Study

Table (i): Average Means of the Properties of the Hakka Passives Examined in the PS Task

| Task \ Group | | 4-year-old | 5-year-old | 6-year-old | 7-year-old | Control Group |
|---|---|---|---|---|---|---|
| Subject Animacy | Animate | 0.33 | 0.75 | 0.75 | 0.92 | 1.00 |
| | Inanimate | 0.25 | 0.58 | 0.92 | 1.00 | 1.00 |
| Reversibility | Reversible | 0.33 | 0.67 | 0.75 | 0.92 | 1.00 |
| | Irreversible | 0.25 | 0.67 | 0.83 | 1.00 | 1.00 |
| Full/truncation | Full | 0.50 | 0.75 | 0.83 | 0.92 | 1.00 |
| | Truncated | 0.25 | 0.58 | 0.74 | 1.00 | 1.00 |
| Verbal Transitivity | Resultative | 0.38 | 0.63 | 0.75 | 1.00 | 1.00 |
| | Action | 0.38 | 0.88 | 0.88 | 0.88 | 1.00 |
| | Experiential | 0.13 | 0.63 | 0.75 | 1.00 | 1.00 |
| Bi-status Pronoun | Expletive | 0.75 | 0.25 | 0.50 | 0.50 | 0.50 |
| | Resumptive | 0.25 | 0.75 | 0.50 | 0.50 | 0.50 |

Table (ii): Percentages of Passive Sentence Types Elicited in the PP Task

| Types \ Age | 4-year-old | 5-year-old | 6-year-old | 7-year-old | Control Group |
|---|---|---|---|---|---|
| NP1 | *NA | NA | 50% | 8.30% | 0 |
| NP1+bun+(pointing) | NA | NA | 45.83% | 16.67% | 0 |
| (correct)NP1+bun+NP2+V | NA | NA | 4.17% | 75.03% | 100% |
| Special Construction | NA | NA | 0 | 50% | 100% |

* Data collected from subjects of age 4 and 5 are not applicable in the pilot study.

## Appendix B: Test Items Examined in the Two Tasks of the Present Study

**Property 1: No truncation (non-truncated vs. truncated)**

**Non-truncated**

1. *A-Bo bun fai ngin zok-ziu le.*
   阿寶 分 壞 人 捉走 了
   A-Bo BUN bad man catch-away ASP
   'A-Bo was caught away by the bad man.'
2. *Didi bun A-Min cau siang le.*
   弟弟 分 阿 明 吵 醒 了
   brother BUN A-Min annoy wake ASP
   'Brother was awaken by A-Ming.'

**Truncated**

3. **Mama bun hak do.*
   媽媽 分 嚇 到
   mother BUN fright DO.
   'Mother was frightened.'
4. **A-Min bun tet do.*
   阿明 分 踢 到
   A-Min BUN kick DO.
   'A-Min was kicked.'

**Property 2: Syntactic complexity (short-distance vs. long-distance)**

**Short-distance**[1]

1. *A-Bo bun fai ngin zok-ziu le.*
   阿寶 分 壞 人 捉 走 了
   A-Bo BUN bad man catch-away ASP
   'A-Bo was caught away by the bad man.'
2. *Didi bun A-Min cau siang le.*
   弟弟 分 阿 明 吵 醒 了
   brother BUN A-Min annoy wake ASP
   'Brother was awaken by A-Ming.'

**Long-distance**

3. *Fai ngin bun A-bo hem gincha zok-ziu le.*
   壞 人 分 阿寶 叫 警察 抓 走 了
   bad man BUN A-bo ask police catch-away ASP
   'The bad man was caught away by A-Bo's ask for the police's efforts.'

[1] Test sentences under this category are identical to those for non-truncated property.

4. *Didi bun A-Min hem mama cau siang le.*
弟弟 分 阿明 叫 媽媽 吵 醒 了
brother BUN A-Min ask mother annoy wake ASP
'Brother was awaken by A-Ming's asking for mother's efforts.'

**Property 3: Resumptive pronouns (non-gapped vs. long-distance)**

**Non-gapped passives**

1. *Didi bun baba fak gi so tinai.*
弟弟 分 爸爸 罰 他 掃 地板
Brother BUN Father punish he clean floor
'Brother was punished by Father to clean the floor.'
2. *A-Moi bun mama hem gi se von.*
阿梅 分 媽媽 叫 她 洗 碗
A-Moi BUN mother ask she wash dishes
'A-Moi was asked by Mother to wash dishes.'

**Long-distance**[2]

3. *Fai ngin bun A-bo hem gincha zok-ziu le.*
壞 人 分 阿寶 叫 警察 抓 走 了
bad man BUN A-bo ask police catch-away ASP
'The bad man was caught away by A-Bo's ask for the police's efforts.'
4. *Didi bun A-Min hem mama cau siang le.*
弟弟 分 阿明 叫 媽媽 吵 醒 了
brother BUN A-Min ask mother annoy wake ASP
'Brother was awaken by A-Ming's asking for mother's efforts.'

**Property 4: Adversity**

**Adversative**[3]

1. *A-Bo bun fai ngin zok-ziu le.*
阿寶 分 壞 人 捉 走 了
A-Bo BUN bad man catch-away ASP
'A-Bo was caught away by the bad man.'
2. *Didi bun A-Min cau siang le.*
弟弟 分 阿 明 吵 醒 了
brother BUN A-Min annoy wake ASP
'Brother was awaken by A-Ming.'

[2] Test sentences under this category are identical to those for long-distance passives.
[3] Test sentences under this category are identical to those for non-truncated property.

**Non-adversative**

3. *Didi bun baba cim do le.*
   弟弟 分 爸爸 找 到 了
   brother BUN fatehr find DO ASP
   'Brother was found out by Father.'
4. *Mama bun cengin mia do le.*
   媽媽 分 小孩 摸 到 了
   mother BUN kid touch DO ASP
   'Mother was touched by the kid.'

**Property 5: Animacy/Inanimacy**

**Animate-animate**[4]

1. *A-Bo bun fai ngin zok-ziu le.*
   阿寶 分 壞 人 捉 走 了
   A-Bo BUN bad man catch-away ASP
   'A-Bo was caught away by the bad man.'

**Animate-inanimate**

2. *Mama bun coido got do le.*
   媽媽 分 菜刀 割 到 了
   mother BUN knife cut DO ASP
   'Mother was cut by a knife.'

**Inanimate-animate**

3. *Tong bun cengin siit tet le.*
   糖 分 小孩 吃 掉 了
   candy BUN kid eat TET ASP
   'The candy was eaten to the end by a kid.'

**Inanimate-inanimate**

4. *Bozhi bun tai fung chui zeu le.*
   報 紙 分 大 風 吹 走 了
   newspaper BUN strong wind blow away ASP
   'Newspaper was blown away by a strong wind.'

**Property 6: Degree of Transitivity**

**Resultative**[5]

1. *A-bo bun fai ngin zok-ziu le.*
   阿寶 分 壞 人 捉 走 了

[4] Test sentence under this category is identical to the first sentence for non-truncated property.
[5] Test sentences under this category are identical to those for non-truncated property.

A-bo BUN bad man catch-away ASP
'A-bo was caught away by the bad man.'

2. *Didi bun A-Min cau siang le.*
弟弟 分 阿明 吵 醒 了
brother BUN A-Min annoy wake ASP
'Brother was awaken by A-Ming.'

**Active**

3. *Didi bun meimei da.*
弟弟 分 妹妹 打
brother BUN sister hit
'Brother was hit by Sister.'

4. *Sinsam bun hoksang seu.*
老 師 分 學 生 笑
teacher BUN student laugh
'Teacher was laughed by students.'

**Experiential**

5. *Celai bun cemoi nou.*
男生 分 女生 討厭
boys BUN girls hate
'Boys are hated by girls.'

6. *Baba bun mama siong.*
爸爸 分 媽媽 想
father BUN mother miss
'Father has been missing by mother.'

**Fillers:**

1. *Lia tieu gieu he vuset gai.*
這 條 狗 是 黑色 的
this CL dog be black GAI
'This dog is black.'

2. *Heule pa do su don.*
猴子 爬 到 樹 上
monkey climb DO tree atop
'The monkey climbed atop the tree.'

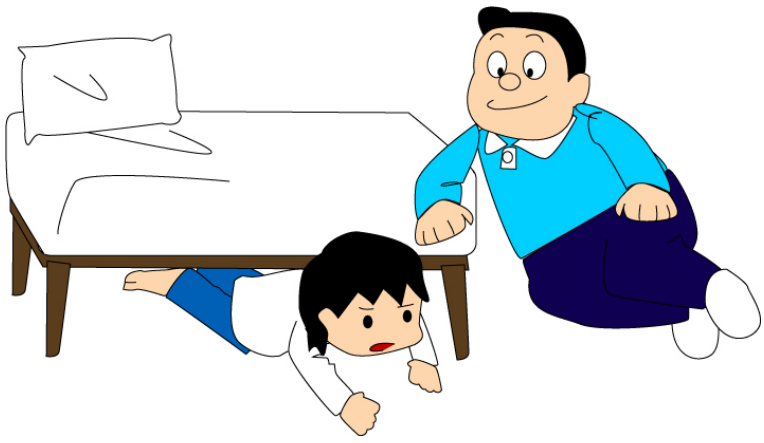
3. *Cengin koin do kicak.*
小孩 看 到 蟑螂
kid see DO cockroach
'The kid saw a cockroach.'

4. *Gi siit tongle.*
   他 吃 糖果
   he eat candy
   ‘He ate candies.’
5. *Mama tu cegieu hi gou kiu.*
   媽媽 帶 小狗 去 玩 球
   mother take puppy go play ball
   ‘Mother took the puppy to play with the ball.’

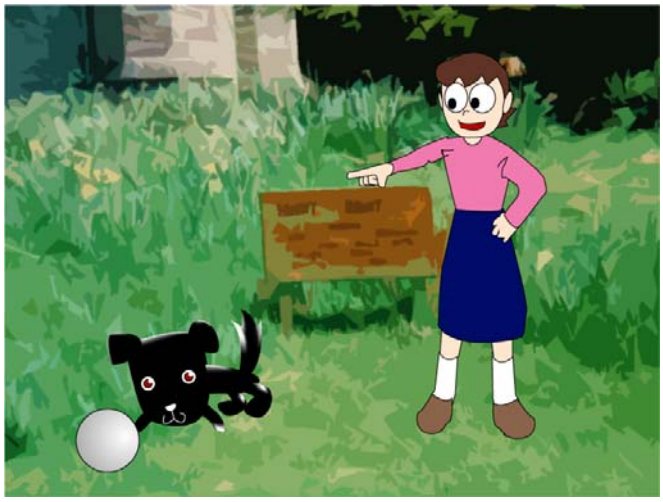
## Appendix C: Test Questions Used in the PP Task

1. *Meimei gai pihi dong fai. Meimei da didi. Didi bun meimei iongban*?
   妹妹 的 脾氣 很 壞 妹妹 打 弟弟 弟弟 分 妹妹 怎樣
   sister GEN temper very bed sister hit brother brother BUN sister how
   'Sister had a bad temper. Sister hit Brother. What happened to Brother?'

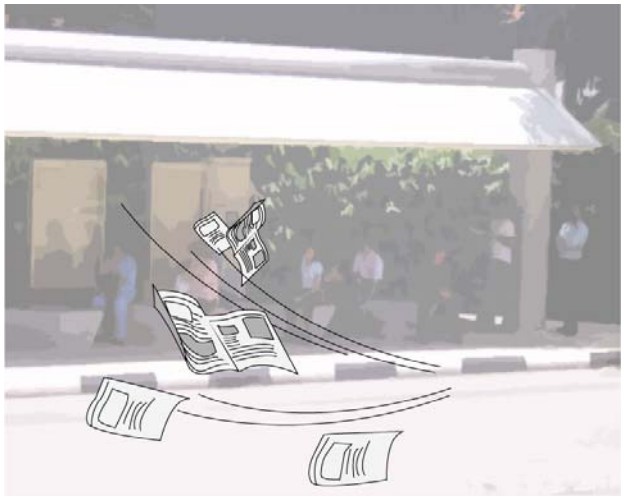
2. Didi kon co mincon ha mo kon hou. Baba si cim do didi le.
   弟弟 躲 在 眠床 下 沒 躲 好 爸爸 就 找 到 弟弟 了
   brother hide bed behide not hide well father SI find-out DO brother ASP
   Didi bun baba iongban le?
   弟弟 分 爸爸 怎樣 了
   brother BUN father how ASP
   'Brother hid behind the bed but did not hide well. Then Father found Brother. What happened to Brother?'



3. Gimbunngit tianhi dong hou, mama tu magai hi gungrhan liau?
今天 天氣 很 好 媽媽 帶 什麼 去 公園 休憩
today whether very good Mom take what go park relax
‘The weather is good today. What does Mom take to the park?’

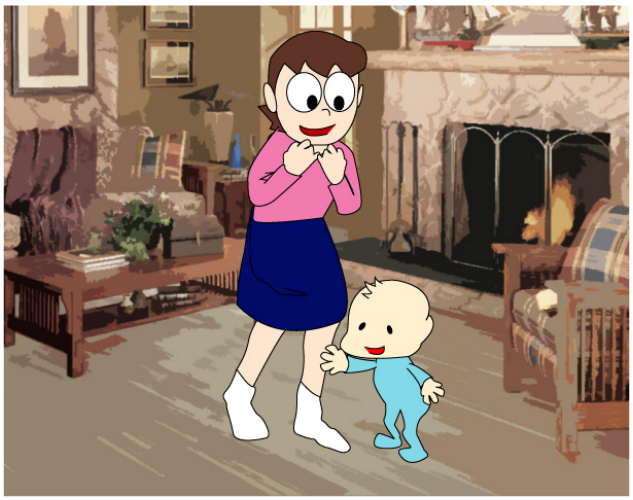


4. Fung dong tai. Taifung chui zeu bozhi le.
風 很 大 大風 吹 走 報紙 了
wind very strong strong-wind bow away newspaper ASP
Bozhi bun taifung iongban le?
報紙 分 大風 怎樣 了
newspaper BUN strong-wind how ASP
‘The wind was strong. It blew the newspaper away. What happened to the newspaper?’



5. A-Min m gam hem didi hong cong. A-Min si hem mama lou didi.
阿明 不 敢 叫 弟弟 起 床。阿明 就 叫 媽媽 把 弟弟
A-Min not dare ask brother get-up bed A-Min SI
cau siang le. Didi bun A-Min iongban le?
吵 醒 了 弟弟 分 阿明 怎樣 了
annoy awake ASP brother BUN A-Min how ASP
'A-Min dare not wake Brother up. A-Min asked Mom to annoy Brother to wake up. What happened to Brother?'

6. Cengin gai su ceicei zhak. Cengin mia do mama le.
小孩 的 手 小小 個 小孩 摸 到 媽媽 了
kid GEN palm tiny CL kid touch DO Mom ASP
Mama bun cengin iongban le?
媽媽 分 小孩 怎樣 了
Mom BUN kid how ASP
'The kid has a tiny palm. The kid touched Mom. What happened to Mom?'



7. Sinsam gai fu mo zok hou. Hoksang si seu sinsam.
老師 的 褲子 沒 穿 好 學生 就 笑 老師。
teacher GEN trousers not wear well students SI laugh-at teacher
Sinsam bun hoksang iongban le?
老師 分 學生 怎樣 了
teacher BUN student how ASP
'The teacher did not wear his trousers well. Students laughed at the teacher. What happened to the teacher?'

8. Heule dong hau pa su. Heule pa do nai hi le?
猴子 很 喜歡 爬 樹 猴子 爬 到 哪 去了
monkey very like climb tree monky climb DO where go ASP
'The monkey likes climbing the tree. Where does the monkey go?'

9. A-Bo ik sa ngin di vuka. Fai ngin kon do le
阿寶 一 個 人 在 家 壞 人 看 到 了
A-Bo one CL person at home bad person see DO ASP
Fain gin si zok ziu A-Bo le. A-Bo bun fai ngin iongban le?
壞 人 就 抓 走 阿寶 了 阿寶 分 壞 人 怎樣 了
bad person SI catch away A-Bo ASP A-Bo BUN bad person how ASP
'A-Bo stayed at home alone; this scene had been seen by the bad person. The bad person caught A-Bo away. What happened to A-Bo?'

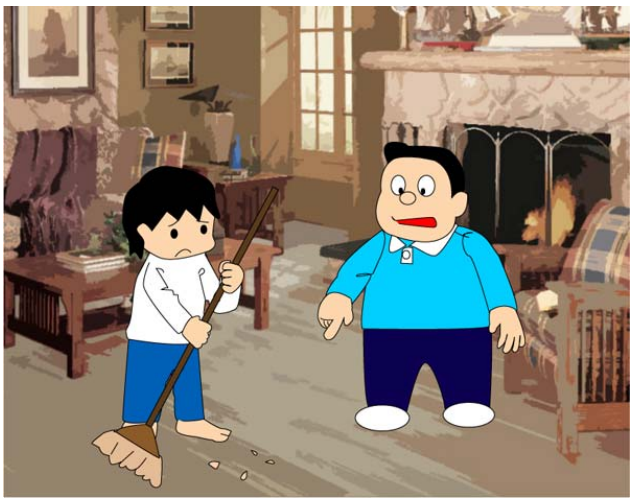
10. Lia ba coido dong li. Coido got do mama le.
這 把 菜刀 很 利 菜刀 割 到 媽媽 了
this CL kitchen-knife very sharp kitchen-knife cut DO Mom ASP
Mama bun coido iongban le?
媽媽 分 菜刀 怎樣 了
Mom BUN kitchen-knife how ASP
'This is a very sharp kitchen knife. It cut Mom. What happened to Mom?'

11. A-Min gai giok don tung. Yiungin tet do A-Min.
阿明 的 腳 很 痛 有 人 踢 到 阿明
A-Min GEN leg very painful someone kick DO A-Min
A-Min faksen magai sicim?
阿明 發生 什麼 事情?
A-Min happen what thing
'A-Min's leg is painful because someone kicked A-Min. What happened to A-Min?'

12. Lia tieu gieu mhe fungset me mhe pakset. Gi he magai set?
這 條 狗 不是 紅色 也 不是 白色 牠 是 什麼 顏色
this CL dog not red nor white it is what color
'This dog is neither red nor white. What color is it?'

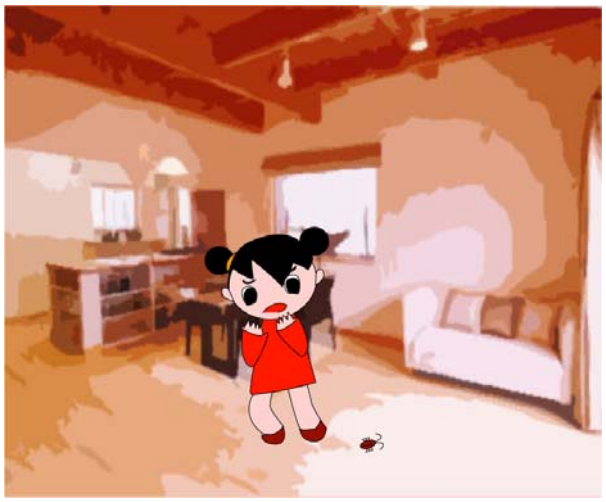
13. A-Bo koi do gincha si taishang hem. A-Bo hem gincha lou fai ngin
阿寶 看 到 警察 就 大 聲 叫 阿寶 叫 警察 把 壞人
A-Bo see DO police SI loud shout A-Bo shout police LOU bad person
zok ziu le. Fai ngin bun A-Bo iongban le?
抓 走 了 壞 人 分 阿寶 怎樣 了
catch away ASP bad person BUN A-Bo how ASP
'A-Bo yelled when he saw the police. A-Bo asked the police to catch the bad person away. What happened to the bad person?'

14. Didi siit dungsi siit do man tinai. Baba si fak didi fak gi
弟弟 吃 東西 吃 到 滿 地板 爸爸 就 罰 弟弟 罰 他
brother eat food eat DO full floor Dad SI punish Brother punish he
so tinai. Didi bun baba iongban?
掃 地板 弟弟 分 爸爸 怎樣
sweep floor Brother BUN Dad how
'Brother messed up the floor by pieces of food he ate. Dad punished Brother to sweep the floor. What happened to Brother?'

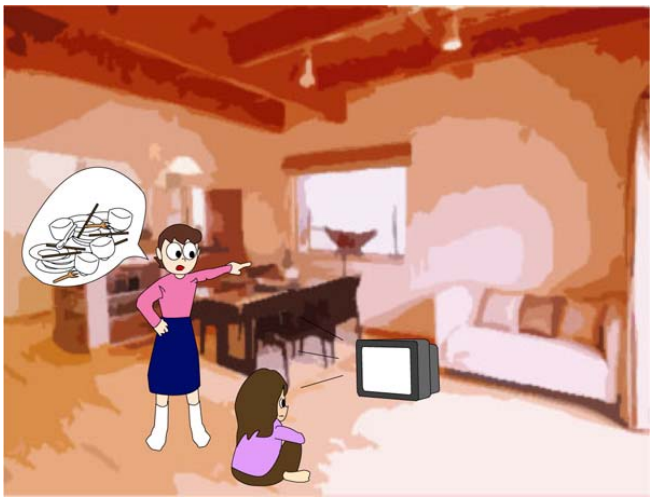


15. Yiungin di vusoso gai fonggian hang cutloi, hak do mama.
有人 在 黑漆漆 的 房間 走 出來 嚇 到 媽媽
Someone from dark GEN room step out frighten DO Mom
Mama faksen magai sicim?
媽媽 發生 什麼 事情
Mom happen what thing
'Someone was stepping out of the room, which frightened Mom. What happened to Mom?'

16. Cengin dong gian kicak. Gi koin do magai?
小孩 很 怕 蟑螂 她 看 到 什麼
kid very scare cockroach she see DO what
'The kid scares cockroaches very much. What does she see now?'



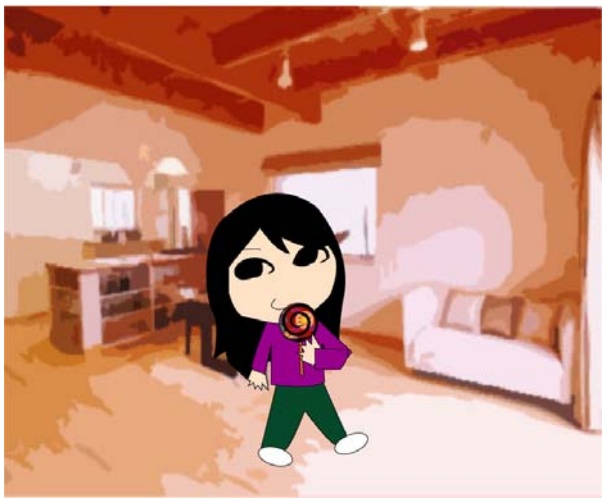
17. Mama kon do A-Moi digai kon tiansi. Mama si hem A-Moi
媽媽 看 到 阿梅 在 看 電視 媽媽 就 叫 阿梅
Mom see Do A-Moi DUR watch TV Mom SI ask A-Moi
hi se von. A-Moi bun mama iongban?
去 洗 碗 阿梅 分 媽媽 怎樣
go wash dishes A-Moi BUN Mom how
'Mom saw A-Moi keeping watching TV. So Mom asked A-Moi to wash dishes. What happened to A-Moi?'



18. Celai m cesiin, cemoi si nou celai. Celai bun cemoi iongban?
男生不洗澡,女生就討厭男生。男生分女生怎樣了?
boy not bathe girl SI hate boys boys BUN girls how
'The boy does not take a bath. So the girl hates him. What happened to him?'

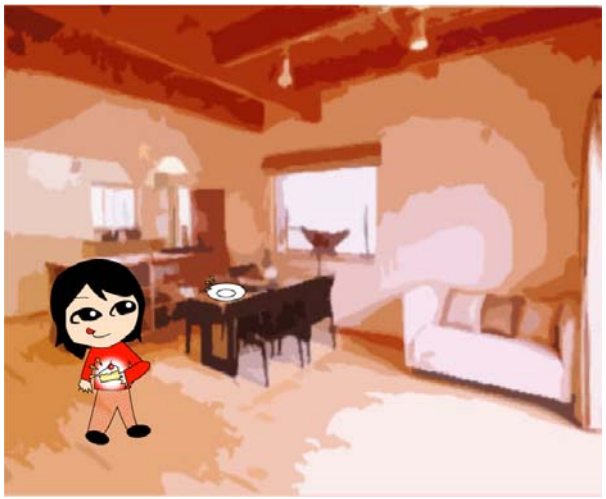
19. Didi digai soimu. A-Min dakoi tiensi. A-Min si
弟弟 在 睡覺 阿明 打開 電視 阿明 就
brother DUR sleep A-Min turn-on TV A-Min SI
cau siang didi le. Didi bun A-Min iongban le?
吵 醒 弟弟 了 弟弟 分 阿明 怎樣 了
annoy awake brother ASP brother BUN A-Min how ASP
'Brother was asleep. A-Min turned on TV, which annoyed Brother. What happened to Brother?'

20. Gi dusi dong ieu. Liha gi digai siit magai?
他 肚子 很 餓 現在 他 在 吃 什麼
he stomach very hungry now he DUR eat what
'He felt hungry. What does he eat?'



21. Mama dong gieu mo kon do baba. Mama si don siong baba.
媽媽 很 久 沒 看 到 爸爸 媽媽 就 很 想 爸爸
Mom very long not see DO Dad Mom SI very miss Dad
Baba bun mama iongban?
爸爸 分 媽媽 怎樣?
Dad BUN Mom how
'It has been a long time for Mom not seeing Dad. So Mom missed Dad so deeply. What happened to Dad?'

22. Lia gai cengin dong hou siit tongle. Cenging siit tet tongle le.
這 個 小孩 很 喜歡 吃 糖 小孩 吃 掉 糖 了
this CL kid very like eat candy kid eat empty candy ASP
Tong bun cengin iongban le?
糖 分 小孩 怎樣 了
candy BUN kid how ASP
'This kid likes to eat candies so much. Now she has finished eating a candy. What happened to the candy?'



## Appendix D: Test Sentences Used in the PS Task

1. Monkey: *Didi bun baba cim do le.*
弟弟 分 爸爸 找 到 了。
Brother BUN Dad seek DO ASP
'Brother was seeked out by Dad.'

Piggy: *Baba bun didi cim do le.*
爸爸 分 弟弟 找 到 了。
Dad BUN brother seek DO ASP
'Dad was seeked out by Brother.'

2. Monkey: *Sinsam bun hoksang seu.*
老師 分 學生 笑。
teacher BUN student laugh-at
'The teacher was laughed at by the students.'

Piggy: *Hoksang bun sinsam seu.*
學生 分 老師 笑。
student BUN teacher laugh-at
'The students are laughed at by the teacher.'

3. Monkey: *Mama tu cengin hi gou kiu.*
媽媽 帶 小孩 去 玩 球。
Mom take child go play ball
'Mom took her kid to play the ball.'

Piggy: *Mama tu cegieu hi gou kiu.*
媽媽 帶 小狗 去 玩 球。
Mom take puppy go play ball
'Mom took the puppy to play the ball.'

4. Monkey: *Tong bun cengin siit tet le.*
糖 分 小孩 吃 掉 了。
candy BUN kid eat empty ASP
'Candy was eaten by the kid .'

Piggy: * *Cengin bun tong siit tet le.*
小孩 分 糖 吃 掉 了。
kid BUN candy eat empty ASP
'The kid is eaten by the candy.'

5. Monkey: *Didi bun A-Min cau siang le.*
弟弟 分 阿明 吵 醒 了。
brother BUN A-Min annoy awake ASP
'Brother was annoyed by A-Min to awake from his sleeping.'

Piggy: *A-Min bun didi cau siang le.*
阿明 分 弟弟 吵 醒 了。
A-Min BUN brother annoy awake ASP
'A-Min was annoyed by Brother to awake from his sleeping.'

6. Monkey: *Lia tieu gieu he vuset gai.*
這 條 狗 是 黑色 的。
this CL dog be black
'This dog is black.'

Piggy: *Lia tieu gieu he pakset gai.* (這條狗是白色的。)
這 條 狗 是 白色 的。
this CL dog be white
'This dog is white.'

7. Monkey: *Fai ngin bun A-Bo hem gincha zok ziu le.*
壞 人 分 阿寶 叫 警察 抓 走 了。
bad person BUN A-Bo ask poice catch away ASP
'The bad person is caught away by A-Bo's asking for the police.'

Piggy: *A-Bo bun fai ngin hem gincha zok ziu le.*
阿寶 分 壞 人 叫 警察 抓 走 了。
A-Bo BUN bad person ask poice catch away ASP
'A-Bo is caught away by the bad person's asking for the police.'

8 .Monkey: *Heule pa do su don hi.*
猴子 爬 到 樹 上 去。
monkey climb DO tree top go
'The monkey climbed atop to the tree.'

Piggy: **Su pa do heule don hi.*
*樹 爬 到 猴子 上 去。
tree climb DO monkey top go
'The tree climb atop to the monkey.'

9. Monkey: *Mama bun ngin hak do.*
媽媽 分 人 嚇 到。
Mom BUN person frighten DO
'Mom was frightened by someone.'

Piggy: **Mama bun hak do.*
*媽媽 分 嚇 到
Mom BUN frighten DO
'Mom was frightened.'

10. Monkey: *Didi bun A-Min hem mama cau siang le.*
弟弟 分 阿明 叫 媽媽 吵 醒 了。

brother BUN A-Min ask Mom annoy awake ASP
'Brother was awaken by A-Min's asking for Mom's help.'

Piggy: *A-Min bun didi hem mama cau siang le.*
阿明 分 弟弟 叫 媽媽 吵 醒 了。
A-Min BUN brother ask Mom annoy awake ASP
'A-Min was awaken by Brother's asking for Mom's help.

11. Monkey: *Cengin koin do kicak.*
小孩 看 到 蟑螂。
kid see DO cockroach
'The kid saw the cockroach.'

Piggy: *Cengin dieu shi kicak.*
小孩 踩 死 蟑螂。
kid step die cockroach
'The kid stepped the cockroach to die.'

12. Monkey: *A-Min bun ngin tet do.*
阿明 分 人 踢 到。
A-Min BUN person kick DO
'A-Min was kicked by someone.'

Piggy: **A-Min bun tet do.*
*阿明 分 踢 到。
A-Min BUN kick DO
'A-Min was kicked.'

13. Monkey: *Mama bun coido got do le.*
媽媽 分 菜刀 割 到 了。
Mom BUN kitchen-knife cut DO ASP
'Mom was cut by the kitchen knife.'

Piggy: **Coido bun mama got do le.*
*菜刀 分 媽媽 割 到 了。
kitchen-knife BUN Mom cut DO ASP
'The kitchen knife was cut by Mom.'

14. Monkey: *Fai ngin bun A-Bo zok ziu le.*
壞 人 分 阿寶 捉 走 了。
bad person BUN A-Bo catch away ASP
'The bad person was caught away by A-Bo.'

Piggy: *A-Bo bun fai ngin zok ziu le.*
阿寶 分 壞 人 捉 走 了。
A-Bo BUN bad person catch away ASP
'A-Bo was caught away by the bad person.'

15. Monkey: *Baba bun didi fak gi so tinai.*
爸爸 分 弟弟 罰 他 掃 地板。
Dad BUN Brother punish he sweep floor
'Dad was punished by Brother to sweep the floor.'

Piggy: *Didi bun baba fak gi so tinai.*
弟弟 分 爸爸 罰 他 掃 地板。
Brother BUN Dad punish he sweep floor
'Brother was punished by Dad to sweep the floor.'

16. Monkey: *Celai bun cemoi nou.*
男生 分 女生 討厭。
boy BUN girl hate
'The boy is hated by the girl.'

Piggy: *Cemoi bun celai nou.*
女生 分 男生 討厭。
girl BUN boy hate
'The girl is hated by the boy.'

17. Monkey: *Didi bun meimei da.*
弟弟 分 妹妹 打。
Brother BUN Sister hit
'Brother is hit by Sister.'

Piggy: *Meime bun didi da.*
妹妹 分 弟弟 打。
Sister BUN Brother hit
'Sister is hit by Brother.'

18. Monkey: *A-Moi bun mama hem gi se von.* ()
阿梅 分 媽媽 叫 她 洗 碗。
A-Moi BUN Mom ask her wash dish
'A-Moi was asked by Mom to wash dishes.'

Piggy: *Mama bun A-Moi hem gi se von.*
媽媽 分 阿梅 叫 她 洗 碗。
Mom BUN A-Moi ask her wash dish
'Mom was asked by A-Moi to wash dishes.'

19. Monkey: *Cengin bun Mama mia do le.*
小孩 分 媽媽 摸 到 了。
kid BUN Mom touch DO ASP
'The kid was touched by Mom.'

Piggy: *Mama bun cengin mia do le.*
媽媽 分 小孩 摸 到 了。

Mom BUN kid touch DO ASP
‘Mom was touched by the kid.’

20. Monkey: *Gi siit tongle.*
他 吃 糖果。
he eat candy
‘He ate the candy.’

Piggy: *Gi siit fan.*
他 吃 飯。
he eat rice
‘He had the meal.’

21. Monkey: *Bozhi bun tai fung chui zeu le.*
報紙 分 大 風 吹 走 了。
newspaper BUN strong wind blow away ASP
‘The newspaper was blown away by the strong wind.’

Piggy: *Tai fung bun bozhi chui zeu le.*
大 風 被 報紙 吹 走 了。
strong wind BUN newspaper blow away ASP
‘The strong wind was blown away by the newspaper.’.

22. Monkey: *Baba bun mama siong.*
爸爸 分 媽媽 想。
Dad BUN Mom miss
‘Dad was missed by Mom.’

Piggy: *Mama bun baba siong.*
媽媽 分 爸爸 想。
Mom BUN Dad miss
‘Mom was missed by Dad.’

# Appendix E: Statistic Data

Table (i): Subjects' Correct Responses on the Properties of Hakka Passives in the Both Tasks (Paired-samples T Test; in p-values)

| Property | Property | Sig. (2-tailed) | |
|---|---|---|---|
| | | Experimental | Control |
| TC | SV | 0.713 | [a]NA |
| | RP | *0.000 | *0.045 |
| | AV | 0.188 | NA |
| | AM | *0.004 | NA |
| | VT | 0.890 | 0.334 |
| SC | RP | *0.000 | *0.045 |
| | AV | *0.080 | NA |
| | AM | *0.002 | NA |
| | VT | 0.601 | 0.334 |
| RP | AV | *0.000 | *0.045 |
| | AM | *0.000 | *0.045 |
| | VT | *0.000 | *0.034 |
| AV | AM | 0.117 | NA |
| | VT | 0.135 | 0.334 |
| AM | VT | *0.003 | 0.334 |

[a] The correlation and *t* cannot be computed because the standard error of difference is 0.

Table (ii): Subjects' Correct Responses on Hakka Passives in Both Tasks

(One-way ANOVA)

| Property | Group | Group | Sig. |
|---|---|---|---|
| TC | G1 | G2 | 0.386 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | 0.016 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.000 |
| | | Control | *0.000 |
| | G4 | Control | 0.548 |
| SC | G1 | G2 | *0.000 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | 0.226 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.000 |
| | | Control | *0.000 |
| | G4 | Control | 0.719 |
| RP | G1 | G2 | *0.001 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | 0.308 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.001 |
| | | Control | *0.000 |

| | | | |
|---|---|---|---|
| | G4 | Control | 0.752 |
| AV | G1 | G2 | *0.000 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | 0.203 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.000 |
| | | Control | *0.000 |
| | G4 | Control | 0.738 |
| AM | G1 | G2 | *0.012 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | 0.401 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.000 |
| | | Control | *0.000 |
| | G4 | Control | 0.771 |
| VT | G1 | G2 | *0.000 |
| | | G3 | *0.000 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G2 | G3 | *0.001 |
| | | G4 | *0.000 |
| | | Control | *0.000 |
| | G3 | G4 | *0.010 |
| | | Control | *0.000 |
| | G4 | Control | 0.126 |

Table (iii): Experimental Group's Correct Responses on the Properties of Hakka Passives in Both Tasks (Paired-samples T Test; in p-values)

| Property | Sub-property | | Sig. (2-tailed) | |
|---|---|---|---|---|
| | | | Experimental | Control |
| TC | N-Truncated | Truncated | *0.002 | 0.334 |
| SC | Long-distance | Short-distance | *0.005 | 0.334 |
| RP | Non-gapped | Long-distance | *0.011 | *0.019 |
| AV | Adversative | N-adversative | 0.427 | 0.334 |
| AM | A-A | A-I | *0.015 | 0.334 |
| | | I-A | 0.766 | 0.334 |
| | | I-I | *0.002 | 0.334 |
| | A-I | I-A | *0.006 | NA |
| | | I-I | 0.532 | NA |
| | I-A | I-I | *0.002 | NA |
| VT | Resultative | Action | 0.766 | 0.334 |
| | | Experiential | *0.000 | 0.334 |
| | Action | Experiential | *0.000 | NA |

Table (iv): Subjects' Correct Responses on Hakka Passives in Both Tasks

(One-way ANOVA)

| TC | Group | Group | Sig. |
|---|---|---|---|
| Non-Truncated | 1 | 2 | 0.061 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.334 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.001 |
| | | Control | *0.000 |
| | 4 | Control | 0.903 |
| Truncated | 1 | 2 | 0.994 |
| | | 3 | *0.003 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.007 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.001 |
| | | Control | *0.000 |
| | 4 | Control | 0.472 |
| SC | Group | Group | Sig. |
| Long-distance | 1 | 2 | *0.000 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.450 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.019 |
| | | Control | *0.000 |
| | 4 | Control | 0.788 |

| | | | |
|---|---|---|---|
| Short-distance | 1 | 2 | 0.061 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.334 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.001 |
| | | Control | *0.000 |
| | 4 | Control | 0.903 |
| RP | Group | Group | Sig. |
| Non-gapped | 1 | 2 | 0.726 |
| | | 3 | 0.108 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.598 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.007 |
| | | Control | 0.002 |
| | 4 | Control | 0.942 |
| Long-distance | 1 | 2 | *0.000 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.450 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.019 |
| | | Control | *0.000 |
| | 4 | Control | 0.788 |
| AV | Group | Group | Sig. |
| Adversative | 1 | 2 | 0.061 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |

| | | | |
|---|---|---|---|
| | | Control | *0.000 |
| | 2 | 3 | 0.334 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.001 |
| | | Control | *0.000 |
| | 4 | Control | 0.903 |
| N-adversative | 1 | 2 | *0.000 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.573 |
| | | 4 | *0.001 |
| | | Control | *0.000 |
| | 3 | 4 | 0.055 |
| | | Control | 0.003 |
| | 4 | Control | 0.890 |
| AM | Group | Group | Sig. |
| A-A | 1 | 2 | 0.953 |
| | | 3 | *0.050 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.162 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.000 |
| | | Control | *0.000 |
| | 4 | Control | 0.986 |
| A-I | 1 | 2 | *0.013 |
| | | 3 | *0.004 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.980 |
| | | 4 | 0.097 |
| | | Control | 0.009 |

| | | | |
|---|---|---|---|
| | 3 | 4 | 0.215 |
| | | Control | 0.031 |
| | 4 | Control | 0.921 |
| I-A | 1 | 2 | 0.483 |
| | | 3 | 0.066 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.707 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.009 |
| | | Control | *0.000 |
| | 4 | Control | 0.941 |
| I-I | 1 | 2 | *0.025 |
| | | 3 | *0.002 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.844 |
| | | 4 | 0.071 |
| | | Control | 0.005 |
| | 3 | 4 | 0.358 |
| | | Control | 0.066 |
| | 4 | Control | 0.904 |
| VT | Group | Group | Sig. |
| Resultative | 1 | 2 | 0.061 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | 0.334 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | *0.001 |
| | | Control | *0.000 |
| | 4 | Control | 0.903 |
| Action | 1 | 2 | *0.005 |

| | | | |
|---|---|---|---|
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | *0.010 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | 0.315 |
| | | Control | 0.032 |
| | 4 | Control | 0.829 |
| Experiential | 1 | 2 | *0.001 |
| | | 3 | *0.000 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 2 | 3 | *0.012 |
| | | 4 | *0.000 |
| | | Control | *0.000 |
| | 3 | 4 | 0.674 |
| | | Control | 0.001 |
| | 4 | Control | 0.064 |

Table (v): Experimental Group's Correct Responses in Both Tasks (in Average Means and Standard Deviation)

| Property | TC | | | | SC | | | | RP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Task / Group | PP | | PS | | PP | | PS | | PP | | PS | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| 1 | 0.00 | 0.00 | 0.87 | 0.21 | 0.00 | 0.00 | 0.63 | 0.19 | 0.00 | 0.00 | 0.50 | 0.37 |
| 2 | 0.13 | 0.13 | 0.90 | 0.16 | 0.32 | 0.32 | 0.85 | 0.13 | 0.18 | 0.20 | 0.78 | 0.19 |
| 3 | 0.38 | 0.33 | 0.97 | 0.09 | 0.43 | 0.36 | 0.97 | 0.09 | 0.25 | 0.28 | 0.93 | 0.11 |
| 4 | 0.83 | 0.26 | 1.00 | 0.00 | 0.85 | 0.18 | 1.00 | 0.00 | 0.70 | 0.25 | 0.98 | 0.06 |
| Property | AV | | | | AM | | | | VT | | | |
| Task / Group | PP | | PS | | PP | | PS | | PP | | PS | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| 1 | 0.03 | 0.09 | 0.70 | 0.24 | 0.00 | 0.00 | 0.92 | 0.15 | 0.02 | 0.06 | 0.66 | 0.17 |
| 2 | 0.33 | 0.26 | 0.90 | 0.13 | 0.32 | 0.33 | 0.93 | 0.11 | 0.28 | 0.23 | 0.96 | 0.17 |
| 3 | 0.48 | 0.27 | 0.95 | 0.10 | 0.42 | 0.28 | 1.00 | 0.00 | 0.54 | 0.21 | 0.95 | 0.08 |
| 4 | 0.87 | 0.19 | 1.00 | 0.00 | 0.87 | 0.23 | 1.00 | 0.00 | 0.79 | 0.16 | 1.00 | 0.00 |