M.A. Thesis

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Noun Phrases in Taiwan Sign Language

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# ABSTRACT

With the knowledge that noun phrases play an important role in languages and are one of the main elements in sentences, i.e. semantically denote entities like persons, places, concrete objects, or abstract entities, and syntactically may function as subjects, objects, and complements of prepositional phrases and possessive phrases, this thesis will investigate noun phrases in Taiwan Sign Language and focus on three issues.

The first issue is about the modifiers in noun phrases, adjectives, in TSL, with the goal of determining the categories and modifications of adjectives and the co-occurrences of adjectives with nouns in TSL.

The second issue is concerned with the forms and distributions of numerals and quantifiers in TSL with the aim of determining how numerals and quantifiers are formed and used in TSL noun phrases.

The third issue is concerned with the word orders within noun phrases in TSL, to systematically explain the reasons behind the seeming chaotic word orders within TSL noun phrases. The results of this investigation show that the word orders within noun phrases in TSL display a correspondence to the conceptual organization raised by Taylor (2000), in which adjectives are supposed to be closest to head nouns, and quantifiers (including numerals) and determiners are supposed to be in the most peripheral positions of noun phrases.

Keywords: Taiwan Sign Language (TSL), noun phrases, adjectives, quantifiers, word order

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# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

Nouns designate entities in the world, real or imagined, and are believed to be one of the universal and central categories in languages. A noun phrase, as previous research indicates, is a construction that (a) typically has either a noun or a pronoun as its central constituent, i.e., that noun or pronoun must be regarded as the "head" or most important element in the phrase, (b) contains amongst its most central members those words that denote entities like person, place, concrete objects, or abstract entities such as ideas or feelings, and (c) can be replaced by a pronoun (Haegeman and Gueron 1999; Huddleston 1984; 1988; LaPalombara 1976; Payne 1997; Rijkhoff 2002; Wardhaugh 1995).

From the string *The tall black boy* in (1a), it is intuitively obvious that some elements are more essential than others. It is the noun *boy*, from the semantic point of view, that is the most important. It is the central entity indicated by the phrase. In (1b), though the adjectives *tall* and *black* are omitted, the phrase still makes reference to the entity and the sentence is grammatical. However, it will be odd and ungrammatical if we leave *The tall black* but omit the noun *boy*. Thus, we know that the most important and central part of a noun phrase must be the head noun. Examples (2a) and (2b) show that no matter what the head noun refers to, the noun phrase is able to be replaced by pronouns.

(1) a. [NP The tall black *boy*] is a student here.

b. [NP The *boy*] is a student here.

c. *[NP The tall black] is a student here.

(2) a. [NP This *idea/ school/ cup…*] is good.

b. [NP *It*] is good.

Noun phrases typically can function as: (a) subjects, objects, predicative in clause structure, (b) complement of prepositional phrases, and (c) complement of possessive phrases as shown in (3)-(6) (Berk 1999; Huddleston 1988; Payne 1997; Quirk and Greenbaum 1973):

(3) [NP **The teacher**] encouraged [NP **the student**]. (subject and object)

(4) [NP He] is [NP **a teacher**]. (predicative in clause structure)

(5) [NP The student] on [NP **the stage**] spoke. (complement of prepositional phrase)

(6) [NP The students] of [NP **the teacher**] are old. (complement of possessive

phrase)

As we can see from sentences (3) to (6) above, noun phrases play not only an important but also necessary part in language; they are the main elements in sentences. In addition, the ordering of constituents within noun phrases has also been suggested to be related to word order (Comrie 1989; Croft 2003; Denning and Kemmer 1990; Greenberg 1963; Hawkins 1983, 1988). This thesis investigates the constituency and word order within noun phrases in Taiwan Sign Language (hereafter TSL).

Sign languages are languages which employ the visual-gestural modality

rather than the auditory-vocal modality employed by spoken languages (Stokoe 1960; Stokoe, Castoerline, and Croneberg 1965; Meier 2002). In Taiwan, TSL is the language commonly used among the deaf and hearing-impaired (Chang, Su, and Tai 2005). According to Smith (1989:1), TSL is a branch of the Japanese Sign Language family and has its own dialects, i.e., the TSL of Taipei and the TSL of Tainan. These two dialects do not show significant differences in the grammatical structure, their main differences lie in the lexicon, e.g., CAR, WINE, WHAT, etc.[1] In addition, there is also a sign language known as '*wenfa shouyu*' (grammatical sign language), also called 'Sign Chinese' in Taiwan. This kind of sign language, which keeps the signs of TSL but follows the grammar of Mandarin, is developed in order to help the deaf learn Mandarin, and it is used among the deaf students and teachers in schools (Smith 1989:1).

In the following section, the constituency of noun phrases is discussed. Then in section 1.3 the main issues of this thesis will be discussed, and finally the organization of the thesis will be given in section 1.4.

## 1.2 The Constituency of Noun Phrases

### 1.2.1 Constituents and Expansions of Noun Phrases

Besides the obligatory head noun, a noun phrase may also include modifiers, or dependents. The dependents can be referred to as pre-head and post-head. Pre-head dependents may include determiners and modifiers. Take English for example, determiners include articles such as *a/an* and *the*; demonstratives, such as *this, that, these, and those*; quantifiers like *many, some, every, any*; possessives such as *my, your, her*, or *Mary's*; and *wh*-words, such as *which, what, whose* (Borjars and Burridege

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[1] Words in capital letters represent the signs in TSL.

2001; Brinton 2000; Givon 1993; Huddleston 1984; LaPalombara 1976). The categories of English determiners are summarized as in (7).

(7) Categories of English Determiners

Art→ {a, an, the}

Dem→ {this, that, these, those}

Quant→ {some, many, every, any…}

Poss→ {my, your, his, her, our, Mary's, the boy's…}

Wh- → {what, which, whose}

Modifiers can be divided into two groups, i.e., pre-nominal modifiers and post-nominal modifiers. In English, pre-nominal modifiers are referred to as adjectives like *good, big, red,* and *angry*, and so forth as in sentence (8); and nouns like *baseball* in (9). Post-nominal modifiers, also known as post-head dependents, are composed of relative clauses as in (10), noun complements as in (11), and possessive phrases as in (12).

(8) [NP A **little**/**clever**/**good** boy] came.

(9) He went to [NP the **baseball** game].

(10) [NP The boy **who you like**] is sitting there.

(11) [NP His mastery **of linguistics**] brought him a job.

(12) [NP The daughters **of the teacher**] are pretty.

Thus, in English, noun phrases can be expanded in various ways (Table 1.1).

Expansions of Noun Phrases
| | | |
|---|---|---|
| NP → | N | cats |
| | A N | cute cats |
| | N N | baseball game |
| | Det N | the cats |
| | Det A N | the cute cats |
| | Det N N | the baseball game |
| | Det AP N | the very cute cats |
| | Det N PP | the cats on the sofa |
| | Det A N PP | the cute cats on the sofa |
| | Det N N PP | the baseball game in Taipei |
| | Det AP N PP | the very cute cats on the sofa |
| | Pro | He |
| | PN | John |

Table 1.1 Expansions of NP in English

## 1.2.2 Ordering of Constituents within Noun Phrases

The constituents within noun phrases, namely, the head nouns and dependents, in general, show consistent ordering within a language. For instance, English exhibits a rigid ordering of constituents within noun phrases as follows (Jackson 1991; LaPalombara 1976):

(13) Determiners- numerals-adjectives- noun modifiers- nouns-{PP, PossP, Rel}[2]

Determiners are always in phrase-initial position; numerals following determiners precede adjectives. Next are the noun modifiers which precede head nouns. Finally, PP, PossP, and relative clauses occupy the phrase-final positions, as shown in (14) to (16).

(14) [NP These five fantastic piano concerts in Taipei] attracted lots of fans.

(15) He met [NP those three young American students of the teacher].

(16) [NP The two radical student organizations you mentioned] are famous.

We can also apply the phrase structure schema as depicted in (17) to analyze the structure of noun phrases in English (O'Grady 2001).

(17) The phrase structure template

```
              XP
       Aei
    Specifier          X'
                 ei
          Adjunct/modifier      X'
                           ri
                         X       Complement
                        Head
```
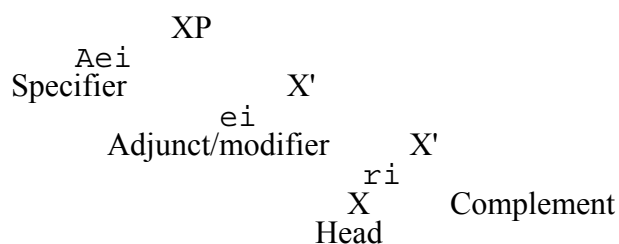
In this case, the structure of a noun phrase in English can be drawn as follows:

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[2]  {} means optionally inclusive.

(18) Phrase structure of English noun phrase

```
                  NP
           qp
Determiner                    N'
                   qi
                 Numeral            N'
                      qi
                   Adjective              N'
                         qi
                     Noun Modifier            N'
                            qi
                         N'            PP
                         |          /‾‾‾‾‾‾\
                        Noun
```
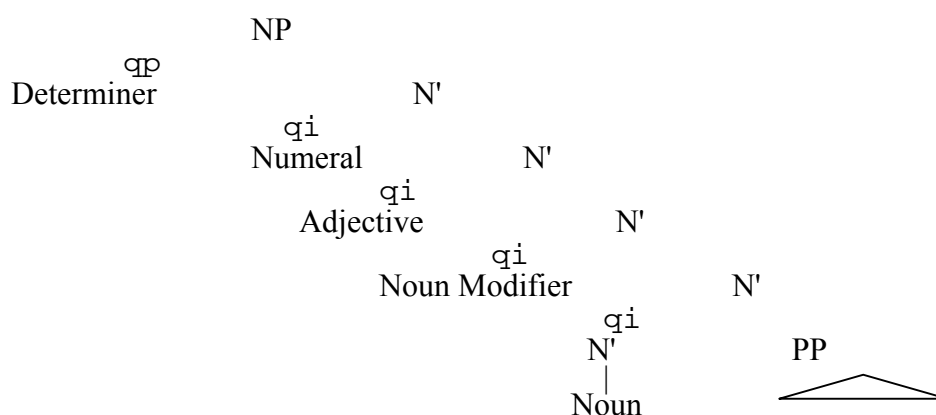
Accordingly, a noun phrase as in sentence (14) can be represented by the tree structure in (19).

(19) The tree structure of 'These five fantastic piano concerts in Taipei'

```
                  NP
           qp
Determiner                    N'
                   qi
     |           Numeral            N'
     |              qi
     |           Adjective              N'
     |              |       qi
     |              |    Noun Modifier            N'
     |              |       |      qi
     |              |       |     N'            PP
     |              |       |     |         /‾‾‾‾‾‾\
  These           five  fantastic  piano   N        in      Taipei
                                           |
                                        concerts
```
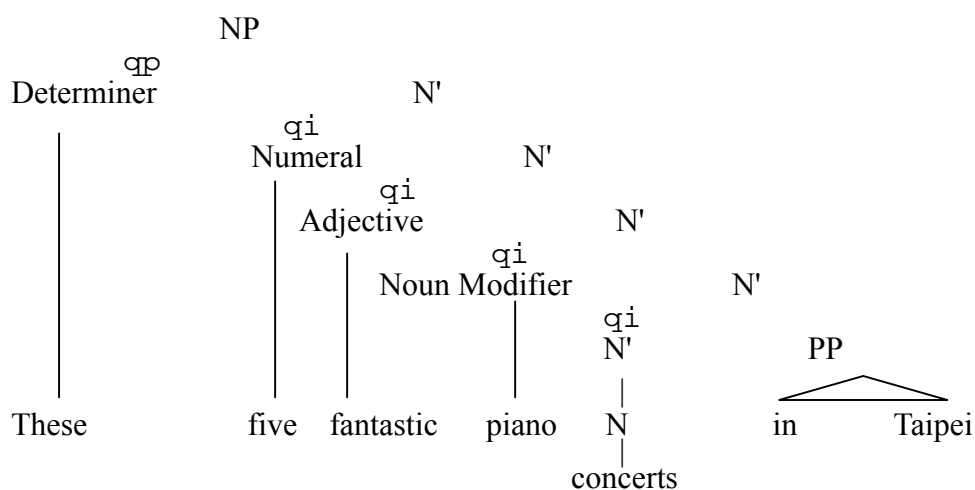
## 1.3  Main issues

There are three main issues pertaining to the ordering of constituents within noun phrases in TSL. The first is with the adjectives within noun phrases in TSL. What are

the categories and the behaviors of adjectives within TSL noun phrases? What relation do they have with head nouns?

The second issue has to do with the components designating the concepts of amount and number, i.e. quantifiers and numerals. What are their forms (signs) and what are their distributions?

Finally, the last issue is related to the word orders within TSL noun phrases. As mentioned in section 1.2, a noun phrase in English at most may carry the determiner, the quantifier, pre-nominal modifiers, and post-nominal modifiers. Also, in English these constituents follow a rigid order. Can we reach a principle for the ordering of constituents within noun phrases in TSL as well? This thesis will look at the ordering of constituents, including determiners, quantifiers, numerals, and adjectives within the noun phrase in TSL.

## 1.4  The organization of the thesis

This thesis is organized as follows:
Chapter 2 examines the modifiers, namely, the category 'adjective' within noun phrases in TSL. At first, whether TSL shows the category 'adjective' will be examined. Then, in order to introduce the ways of modifications of adjectives in TSL, the semantic categories of adjectives will be discussed, too. This chapter will also introduce the ways of modification of adjectives in TSL. Most important of all, the performances of adjectives within noun phrases in TSL will be investigated in this chapter.

Chapter 3 provides an introduction of the quantifiers in TSL including cardinal numerals like ONE, TWO, THREE, etc. and other quantifiers like SOME, A FEW, MOST, ALL and so forth. This chapter explains the forms and distributions of

quantifiers in TSL and the correlation between nouns and quantifiers within noun phrases in TSL. Besides, it also introduces some unique strategies to express the concept of quantity in TSL.

Chapter 4 gives an overall discussion over the word orders within noun phrases in TSL and aims to see if the performances of word orders in TSL noun phrases demonstrate some generalization. Furthermore, this chapter also attempts to study if the structure of TSL noun phrases conforms to Rijkoff's (1990, 2002) predictions or to the cognitive layered structure raised by Langacker (1991) and Taylor (2002). Finally, the last chapter, chapter 5 offers the conclusion.

# CHAPTER 2

## MODIFIERS IN TSL NOUN PHRASES

### 2.1 Introduction

In general, modifiers in a language are regarded as a class of optional elements encoding properties of heads (O'Grady 2001). Many parts of speech are able to be modified (Berk 1999). When in regards to the modifiers of noun phrases, the most familiar and typical category that modifies nouns is adjectives. Adjectives are typically described as the class of words that have the following properties: (a) they denote properties and attributes of the entities designated by nouns, (b) they can be used predicatively or attributively, and (c) they may undergo modification and inflection (O'Grady 2001; Berk 1999; Givon 1993; Huddleston 1984, 1988). Take English for example, when an adjective is used predicatively, it usually follows the copula '*to be*' and designates some of the properties of the subject. When an adjective is used attributively, it can only serve as a pre-nominal modifier. In (1a), for instance, the adjective *tall* occurs after the copula '*is*' when it is used predicatively. But it comes before the noun '*building*' as a pre-nominal modifier when it is used attributively, as in (1b).

   (1) a. This building is tall.

       b. This is a tall building.

Adjectives which are gradable in English also undergo inflection and modification to

express grade and degree. They may take inflectional affixes like *-er* or *-est* (*taller, tallest*) to show the comparative or superlative grade or a pre-modifier '*very*' (O'Grady 2001) as well as in the following examples.

(2) He is <u>taller</u>.

(3) He is <u>very</u> tall.

Nevertheless, not all languages express the concept of properties through the specific category 'adjective'. Some languages do not even contain the category 'adjective' as English does. Instead, they may convey the concept of properties by the use of verbs or nouns (Payne 1997). As for TSL, due to its use of the visual modality some questions are raised when we try to study the way it conveys the concept of properties. First, does TSL demonstrate the category 'adjectives' as English? Secondly, if adjectives are observed in TSL, what are their properties? Third, how are the adjectives modified in TSL? Lastly, how do adjectives perform within noun phrases? Predicative and attributive uses, as well as other properties of adjectives will be investigated in this chapter. In addition, the modification of adjectives in TSL and the distribution of adjectives in noun phrases will be introduced as well. Section 2.2 will investigate whether TSL contains adjectives and talk about the adjectives in terms of predicative and attributive uses in British Sign Langauge and TSL. After that, section 2.3 will give an introduction of the categories of adjectives in both English and TSL. The modification of adjectives in TSL then will be discussed in section 2.4 while the concluding remark will be provided in section 2.5.

## 2.2 Adjectives in TSL

Before we get into the discussion over adjectives in TSL, I will introduce adjectives in British Sign Language (BSL) first in order to see if adjectives in TSL show similarities or differences compared with BSL adjectives on their performances.

### 2.2.1 Adjectives in BSL

Sutton-Spense and Woll (2003) indicated that there are two kinds of adjective in British Sign Language, one is attributive adjectives and the other is predicative adjectives. Attributive adjectives occur in noun phrases, for example, *a big ball*, *a blue pen*. In BSL, there are three ways for attributive adjectives to occur in the noun phrase. An attributive adjective can occur before a noun like HOT FOOD, after a noun like SHIRT WHITE, or incorporated into a noun like SHORT-LIST in BSL. No matter how they go with the noun in the noun phrase, the premise is that they all occur within the noun phrase. In English, predicative adjectives need to follow the copula 'to be' as in *The man is tall*. A sentence like *The man tall* is regarded as ungrammatical without the copula. However, predicative adjectives in BSL tend to be verb-like, i.e. they do not follow a copula. For instance, MAN $IX_{det}$ TALL 'The man is tall'.[3] The sentence is complete with only the predicative adjective TALL in BSL. However, is it the same story when we turn to look at the adjectives in TSL? In the following sections, I will introduce these two kinds of adjectives in TSL and see if the predicative adjectives in TSL do not follow a copula, either.

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[3] $IX_{det}$ represents the determiner.

### 2.2.2 Predicative adjectives in TSL

Before we look at predicative adjectives, there is an issue we need to investigate first. That is, whether TSL even has predicative adjectives and predicative verb distinction? O'Grady (2001) has proposed some criteria to determine what category a word belongs to; they are meaning, inflection, and distribution. Starting from the meaning, verbs typically designate actions, sensations, and states. On the other hand, adjectives denote the properties or attributes of entities. In English, verbs may take inflectional affixes like *-ed* or *–ing* (*looked, looking*) to denote the eventuality of the action, while adjectives can take the comparative or superlative affixes like *–er* or *–est* (*taller, tallest*). However, these criteria are still insufficient to determine a word's category. Although words that designate actions tend to be verbs, nouns may denote actions too (*destruction, injection*). In addition, not all adjectives can take the comparative or superlative affixes, e.g. *excellenter or *intelligentest. Thus, distributional criteria are more reliable for determining a word's category. That is to say, a word's category is determined on the basis of the elements with which it occurs. For example, a verb typically shows up with an auxiliary, while an adjective shows up with a degree word instead.

When we look at TSL, though we are not able to verify if TSL property-denoting words perform inflection yet, we find that the property-denoting words in TSL conform to the first and the third criteria mentioned above, i.e. they denote properties of entities by all means and they co-occur with degree words, as in sentence (5).[4] In addition, it is odd for a property-denoting word to co-occur with an auxiliary or aspect markers like FINISHI, as exemplified in (6). However, when they act as predicates,

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[4] TSL signers use the sign SURPASS or MORE to indicate the comparative and the sign FIRST for the superlative; in addition, facial expressions are also sometimes considered to be inflectional.

they do not require the copula. As we can see in (4), the sign EXPENSIVE alone completes the sentence as the main predicate. In this way, property-denoting words in TSL seem to act like verbs. Although they seem to contain some properties of true adjectives, they also show properties similar to predicative adjectives in BSL. Thus, we can say that predicative adjectives in TSL tend to be verb-like as predicative adjectives in BSL.

(4) FATHER IX$_{det}$ SHIRT <u>EXPENSIVE</u>.

   'Father's shirt is expensive.'

(5) TEACHER IX$_{det}$ SON TWO <u>CUTE VERY</u>.

   'The teacher's two sons are very cute.'

(6) ? IX$_{det}$ MAPLE <u>RED **FINISH**</u>.

   'The maple is already red.'

### 2.2.3   Attributive adjectives in TSL

Attributive adjectives are those adjectives appearing in the noun phrase as modifiers. Unlike English, which only allows the pre-nominal position for attributive adjectives, TSL, like BSL, shows that attributive adjectives may either occur before the noun as in (7a) and (8a) or after the noun as in (7b) and (8b).

(7) a. <u>CUTE</u> CAT IX$_{pro1s}$ LIKE.[5]

'I like cute cats.'

b. CAT <u>CUTE</u> IX$_{pro1s}$ LIKE.

'I like cute cats.'

(8) a. <u>DIRTY</u> CLOTHES.

b. CLOTHES <u>DIRTY</u>.

'dirty clothes'

DIRTY   CLOTHES

Figure 2.1.a

CLOTHES   DIRTY

Figure 2.1.b

## 2.3 Categories of adjectives in TSL

In the following sections, the categories of adjectives in TSL will be introduced

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[5] IX$_{pro1s}$ represents the first person singular pronoun.

on the basis of the categorization of English adjectives, thus, the categories of adjectives in English will be introduced first in section 2.3.1. After that, 2.3.2 will introduce the categories of adjectives in TSL.

### 2.3.1　Categories of adjectives in English

As we already know, adjectives are words denoting properties and attributes of entities designated by nouns. According to the semantics of the properties they denote, adjectives are grouped as prototypical and less-prototypical. Prototypical adjectives are considered to relate to inherent, concrete, and relatively stable qualities of entities while less-prototypical adjectives code more temporary states or less concrete properties (Givon 1993; Payne 1997). Some linguists indicate that English prototypical adjectives denote dimension such as size and shape, age, value (evaluative), and color (Bennett 2002; Huddleston 1988). Some make a more detailed categorization in which the prototypical adjectives in English denote size, age, color, shape, auditory qualities, taste, tactile properties, and value adjectives (Givon 1993; Payne 1997). The prototypical adjectives in English are summarized in (9).

> (9) a. Size: big, small, tall, short
>
> b. Age: old, young
>
> c. Color: red, green, yellow
>
> d. Shape: round, square
>
> e. Auditory qualities: noisy, quiet
>
> f. Taste: sweet, sour, bitter
>
> g. Tactile properties: rough, hard, soft
>
> h. Value (evaluative): good, bad, pretty

The less-prototypical adjectives in English are not as ample as the prototypical ones. They are regarded as denoting physical properties, speed, difficulty, qualification, similarity, and human propensity or transitory states (Bennett 2002; Givon 1993; Payne 1997), as illustrated in (10).

(10) a. Physical property: hard, heavy

b. Speed: fast, slow

c. Difficulty: difficult, easy

d. Qualification: probable, appropriate

e. Similarity: unlike, similar

f. Human propensity: sad, happy, angry

Even though it seems easy to divide adjectives into these two groups, there is not always a clear-cut distinction between the prototypical and the less-prototypical adjectives. For instance, while some linguists think of adjectives such as age or value adjectives as prototypical adjectives (Bennett 2002; Payne 1997), some look at them as less-prototypical ones (Givon 1993).

### 2.3.2 Basic types of Adjectives in TSL

In the section above I introduced the categorization of adjectives in English and distinguished them into prototypical and less-prototypical sets. In this section, I divide the adjectives in TSL into eight main groups based on their semantics. Four types tend to be prototypical while the other four types tend to be less-prototypical. The prototypical set contains (a) size, (b) shape, (c) color, and (d) age adjectives, as

in Figure 2.2 to Figure 2.6.

In Figure 2.2, the sign BIG is produced with both hands' index fingers and thumbs extended. The two hands meet in front of the chest and then pull apart.

(a) size

(11) BIG

'big'



Figure 2.2

The sign SMALL is produced with one hand's index and middle finger extended in a "V" and the other hand's index finger touching the bottom of the "V", as in Figure 2.3.

(12) SMALL

'small'



Figure 2.3

The sign ROUND is formed by forming a semicircle with one hand's thumb and

index finger while the index finger traces the rest of the circle, as in Figure 2.4.

(b) shape

(13) ROUND

    'round'



Figure 2.4

The sign GREEN is produced by putting the index finger on lips and then bending the finger down, as illustrated in Figure 2.5.

(c) color

(14) GREEN

    'green'



Figure 2.5

The sign YOUNG is illustrated in Figure 2.6. One open hand, with the palm facing the face, pulls upward.

(d) age

(15) YOUNG

'young'



Figure 2.6

The less-prototypical adjectives include (e) physical characteristics, (f) human propensity, (g) value (evaluative), and (h) speed adjectives. Figure 2.7 to Figure 2.12 give the illustrations of some examples of these adjectives.

Figure 2.7 is the illustration of the sign DIFFICULT, which is produced with one hand making a fist and pressing the fist against the face near the jaw. The sign NEW, in Figure 2.8, has the signer clench his fist in front of the shoulder first, and then open it as he pulls it outward away from the body.

(e) physical characteristics

(16) DUFFUCULT

'difficult'



Figure 2.7

(17) NEW

      'new'



Figure 2.8


The sign ANGRY is made by pointing both index fingers upward from the side of the head, as in Figure 2.9, while the sign TIRED is produced by placing the bent fingers of one hand on the middle of the chest, as in Figure 2.10.


(f) human propensity

    (18) ANGRY

       'angry'



Figure 2.9

(19) TIRED

    'tired'



Figure 2.10

Figure 2.11 provides illustrations of a pair of antonyms, GOOD and BAD. GOOD is produced by making a fist and putting it in front of the nose, as in Figure 2.11a while BAD is made by moving the fist downward from the nose, as in Figure 2.11b.

(g) value (evaluative)

    (20) GOOD vs. BAD

      'good'     'bad'



a. GOOD       b. BAD

Figure 2.11

Figure 2.12 gives illustrations of another pair of antonyms, FAST and SLOW. They share the same handshape, i.e. the thumb and index finger extend while other finger bend. The hand moves upward to express FAST, as in Figure 2.12a, while it

goes downward to express SLOW, as in Figure 2.12b.

(h) speed

(21) FAST vs. SLOW

    'fast'    'slow'



a. FAST        b. SLOW

Figure 2.12

## 2.4 Modifications of Adjectives in TSL

According to Sutton-Spence and Woll (2003), adjectives in BSL can be modified to show their degree in four ways: (a) by adding a pre-modifier like VERY or QUITE, (b) by the use of substitution of signs, e.g., SMALL vs. TINY, (c) by inflection, i.e. a bound morpheme made of a long, tense, initial hold followed by a rapid release to a final hold, e.g., HOT vs. VERY-HOT, and (d) by non-manual features like facial expressions. When it comes to adjectives in TSL, we find that there are also four specific ways for TSL signers to indicate intensity. In general, they can be considered as two means. One is the use of non-manual features including facial expressions and the exaggeration of movements of hands. The other is the use of the post-modifiers, VERY and PRECISE. However, among these four ways of modification, the facial expressions are observed in all cases as an obligatory component. These four ways to modify adjectives are expounded in the following section.

### 2.4.1　Types of Modification of Adjectives in TSL

There are four ways to modify adjectives in TSL; among them we can draw a distinction based on form. The first group may be considered as the use of prosodic features and the second group is the addition of post-modifiers. Further, each group contains two specific performances.

For the first group, the signers may emphasize the intensity by (a) a facial expression and exaggeration of hand movements; or by (b) only the facial expressions. Figure 2.14 and Figure 2.16 provide the illustrations of (a), the use of both facial expressions and exaggerated hand motion. In both examples, the non-modified adjectives are also given comparison. The first pair illustrates BIG, in which the signer's expression remains constant. In VERY BIG the signer bends his brows, and opens his mouth to add intensity, see Figure 2.14. In addition, the signer also stretches his arms open wider than usual, see Figure 2.14. Figure 2.15 and Figure 2.16 give a contrast between ANGRY and VERY ANGRY.

(22) IX$_{det}$ BALL <u>BIG</u>.

'This ball is big. '



BIG

Figure 2.13

(23) IX_{det} BALL <u>BIG (VERY)</u>.

'This ball is very big. '
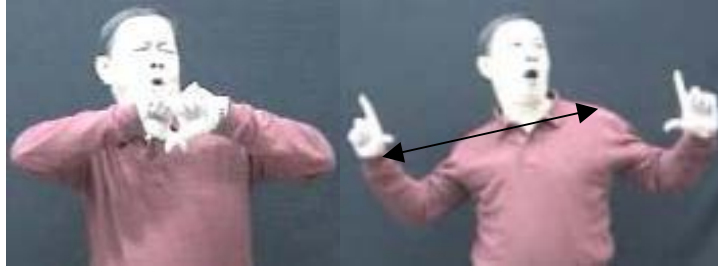


BIG (VERY)

Figure 2.14


(24) IX_{pro3s} <u>ANGRY</u>.

'He is angry.'



ANGRY

Figure 2.15

(25) IX<sub>pro3s</sub> <u>ANGRY (VERY)</u>.

'He is very angry.'



ANGRY (VERY)[6]

Figure 2.16

The second way to modify adjectives in TSL is by only using the facial expressions. As we can see from the examples below, signers may highlight intensity with an emphatic look. In Figure 2.18 the affirmative countenance denotes the intensity of YOUNG while in Figure 2.20 the intensity of TIRED is presented through a frown.

(26) IX<sub>det</sub> TEACHER <u>YOUNG</u>.

'That teacher is young.'



YOUNG

Figure 2.17

---

[6] This figure is from Liu (2005:85).

(27) IX<sub>det</sub> TEACHER <u>YOUNG (VERY)</u>.

'That teacher is very young.'

YOUNG (VERY)

Figure 2.18


(28) IX<sub>pro1s</sub> <u>TIRED</u>.

'I am tired.'

TIRED

Figure 2.19

(29) IX$_{pro1s}$ <u>TIRED (VERY)</u>.

    'I am very tired.'



    TIRED (VERY)

    Figure 2.20

Compared to the first, the second type of modification not only makes use of facial expressions but also of post-modifiers. The first and also the more widely used post-modifier is VERY, as illustrated in Figure 2.21b and Figure 2.22b. Notice that in both examples, DIFFICULT VERY 'very difficult' and RED VERY 'very red', the post-modifiers are accompanied by emphatic facial expressions.

    (30) IX$_{det}$ QUESTION <u>DIFFICULT (VERY) VERY</u>.

    'The question is very difficult.'



a.  DIFFICULT(VERY)   b. VERY

Figure 2.21

(31) IX$_{det}$ MAPLE <u>RED VERY</u>.

    'The maple is very red.'



a. RED          b. VERY

Figure 2.22

The other post-modifier is PRECISE, which is also always accompanied by an emphatic look, as illustrated in Figure 2.23c and Figure 2.24b. Note that this post-modifier only co-occurs with adjectives designating the properties of shapes. Thus, unlike VERY, which can follow a number of types of adjectives; it only follows adjectives like SQUARE or ROUND, as in Figure 2.23 and Figure 2.24.

(32) IX$_{det}$ BRICK <u>SQUARE PRECISE</u>.

    'The brick is very square.'
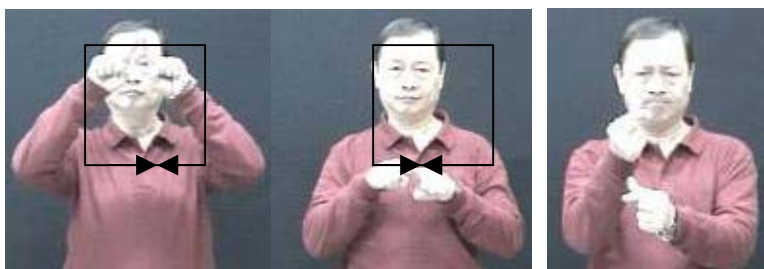


a. SQUARE          b. PRECISE

Figure 2.23

(33) IX<sub>det</sub> TELLURION <u>ROUND PRECISE</u>.

'The tellurion is very round.'



a. ROUND        b. PRECISE

Figure 2.24


### 2.4.2　The Relation between Adjectives and their Modification in TSL

In last section the four ways of modifying adjectives in TSL was discussed. Now in this section, the relation between adjectives and their modifiers is discussed. As mentioned, emphatic facial expressions are observed in all cases and it is also compatible with other types of modification like exaggeration of hand movements or post-modifiers. Second to the facial expression is the post-modifier 'VERY', which is compatible with most kinds of adjectives, except for those with stretching hand movements like BIG or FAST. Exaggerated hand movements usually occur with adjectives consisting of a stretch or insistent movement of hands such as ANGRY or SLOW. Finally, the other post-modifier 'PRECISE' is the most restricted and can only be used to modify shape adjectives like SQUARE or ROUND.


### 2.4.3　Modified Adjectives in Noun Phrases in TSL

When a noun phrase includes a modified adjective in TSL, several expressions are used to denote the identical concept. First, an Adj-VERY phrase may precede or

follow the head noun of a noun phrase, as in (34a-b). The modifier 'VERY' is also observed in the preceding position of the adjective, as in (34e). In this case, the adjective phrase can only precede the head noun, the sentence is ungrammatical when the VERY-Adjective phrase follow the head noun, as in (34f). Still, there is a very common expression in which the emphatic facial expression modifies the adjective, while the adjective precedes or follows the head noun of a noun phrase, as exemplified in (34c-d). Notice that among the various expressions, (34a) and (34c) are the most widely used and are considered as the most typical and acceptable while expressions like (34e) is the least typical.

(34) a. GIRL <u>PRETTY</u> **VERY** IX$_{pro3s}$ LIKE.[7]

'He likes very pretty girls.'

b. <u>PRETTY</u> **VERY** GIRL IX$_{pro3s}$ LIKE.

'He likes very pretty girls.'

c. GIRL <u>PRETTY (VERY)</u> IX$_{pro3s}$ LIKE.

'He likes very pretty girls.'

d. <u>PRETTY (VERY)</u> GIRL IX$_{pro3s}$ LIKE.

'He likes very pretty girls.'

e. **VERY** <u>PRETTY</u> GIRL IX$_{pro3s}$ LIKE.

'He likes very pretty girls.'

*f. GIRL **VERY** <u>PRETTY</u> IX$_{pro3s}$ LIKE.

'He likes very pretty girls.'

---

[7] IX$_{pro3s}$ represents the third person singular pronouns.

**2.5 Conclusion**

In this chapter, I have studied noun phrase modifiers, namely, TSL adjectives. First, although the adjectives observed in TSL do not share the exact same characteristics as English adjectives, they display the following properties: (a) they denote properties or attributes of the designating entities, (b) they can be used predicatively and attributively, and (c) they undergo modification and cannot occur with auxiliary verbs or aspect markers. When adjectives are used predicatively in TSL, they do not need to follow a copula. Instead, TSL adjectives alone are capable of forming a complete predicate as those in BSL. As to the attributive adjectives, they occur pre-nominally or post-nominally. In addition, like English, TSL adjectives can be grouped into a prototypical set and less-prototypical set, as well. The prototypical adjectives include size, shape, color, and age adjectives while the less-prototypical ones contain physical characteristics, human propensity, value (evaluative), and speed adjectives.

In terms of modification, there are four ways to express the intensity of adjectives in TSL. They all require emphatic facial expressions with the addition of optionally exaggerative hand movements, or addition of one of two post modifiers, 'VERY' or 'PRECISE'. Finally, the distributions of modified adjectives in noun phrases were also investigated. In noun phrases, a simple adjective can be pre-nominal or post-nominal. As for adjective phrases post-nominally modified by 'VERY', they may precede or follow the head nouns in the noun phrases. However, when the modifier 'VERY' comes before the adjective, then the adjective phrase can only precede the head noun in the noun phrase. Simultaneous uses of the emphatic expressions with adjectives are also found to be very common in noun phrases in

TSL.

# CHAPTER 3

# QUANTIFIERS IN TSL NOUN PHRASES

## 3.1 Introduction

Following the discussion of the adjectives in Chapter 2, this chapter will investigate quantifiers, which are rather close and relative to noun phrases and designate the concept of quantity (Langacker 1991; Rijkhoff 2002), or number (Payne 1997; Sutton-Spence and Woll 2003), or the 'plural' (Sutton-Spence and Woll 2003). The concept of quantity or number in languages can be expressed through many morphosyntactic processes (Payne 1997); among them inflection is likely to be a common one. Take English for example, in the case of English nouns, the number is marked by inflection with the addition of the affix *–s*. However, some languages do not mark number on nouns like Nancoyry, a language spoken in India's Nicobarese Islands (O'Grady 2001). In other cases, only certain types of nouns optionally mark number, like Mandarin Chinese in which only human nouns can take the plural suffix *–men*, e.g., *laoshimen* 'teachers' (Li and Thompson 1981; Payne 1997). One of the most common ways to convey the concept of quantity is by adding inflection to the determiner, or adding a quantifier or a numeral to the noun phrase. For instance, a plural English noun phrase may consist of a plural noun such as '*boys*' and a plural determiner like *these* or *those* as in '*those boys*', or of a quantifier, and a plural noun as in '*three boys*', or still may include all these constituents as in '*these three boys.*'

Quantifiers, in general, refer to words like *some, many, a few, a little, all, three*, and so forth. Quantifiers are considered to be a sub-class of determiners or postdeterminers sometimes since they may occupy the determiner slot sometimes

(Berk 1999; Brinton 2000; Borjars and Burridge 2001; Givon 1993; Huddleston 1984; LaPalombara 1976; Quirk and Greenbaum 1973; Wardhaugh 1995). Some scholars further divide the quantifier category, arguing that quantifiers like *some, many, a few, a little, all*, and so forth are distinguished from numerals, and are true 'quantifiers' (Jacobs 1993; Langacker 1991; McCawley 1988; O'Grady 2001; Radford 1988; Rijkhoff 2002; and Taylor 2002). Some refer to those non-numeral quantifiers with terms like 'quantity word' (Baker 1995), 'non-numeral quantifier' (Payne 1997), or 'indefinite quantifiers' (Jackson 1991). Still some regard this class of words to be a sub-class of determiners, namely, 'indefinite quantifiers-determiners' since they sometimes occupy the determiner slot in noun phrases (Brinton 2000; Givon 1993; Borjars and Burridge 2001; Huddleston 1984; LaPalombara 1976). No matter what they are named, their common functions are to designate a non-specific amount or quantity while numerals refer to a more exact and specific quantity (Jackson 1991).

When we talk about the concept of quantity in TSL noun phrases; however, some questions arise. First, how does TSL express the concept of quantity? Second, if TSL has its own quantifiers, what are their forms? Lastly, how do the numerals and quantifiers co-occur with nouns within noun phrases? This chapter will introduce and discuss numerals and quantifiers in terms of their forms and distributions. The introduction to the forms and distributions of numerals in TSL will be given in section 3.2. Section 3.3 discusses the forms and distributions of quantifiers in TSL. Section 3.4 concludes the chapter.

## 3.2  Numerals

### 3.2.1   Forms

Some languages have a number system comprising of only four terms: one, two, three, and many. Some languages contain native terms for only the first few numbers like one, two, and three. Still other languages may have native terms for infinity. In English the native terms of numerals include *one, two, and three*, and so on to 999,999. The term *million* is borrowed from French while *billion* and *trillion* are formed from backformations (Payne 1997). In Mandarin, the native terms of numerals can count from *yi* 'one' to *zhao* 'a million million'. In the case of TSL, its native terms can be counted from zero to ten million. Although we can still see that TSL signers also use a term for a hundred million and a million million, they are borrowings from Signed Chinese. The forms of the basic numeral units including TEN, HUNDRED, THOUSAND, and TEN-THOUSAND are illustrated in Figure 3.1 to Figure 3.4.

(1) TEN
  'ten'



Figure 3.1

(2) HUNDRED
　　'hundred'



　　Figure 3.2


(3) THOUSAND
　　'thousand'



　　Figure 3.3


(4) TEN THOUSAND
　　'ten thousand'



　　Figure 3.4


The numeral system in TSL is also quite similar to that of Mandarin. It uses the same strategy as Mandarin Chinese to express numerals. For example, the teens in

both Mandarin and TSL are composed of the numeral TEN plus a numeral from one to nine. Table 3.1 illustrates some of the teens in Mandarin and TSL.

| Mandarin | TSL | English |
|---|---|---|
| Shi-yi 'ten-one' | TEN-ONE | Eleven |
| Shi-er 'ten-two' | TEN-TWO | Twelve |
| Shi-wo 'ten-five' | TEN-FIVE | Fifteen |

Table 3.1 Examples of teens in Mandarin, TSL, and English

Besides the teens, numerals larger than the teens, i.e., numerals such as twenties, thirties, and fifties, and so forth, or hundreds and thousands are also constructed in the same way as Mandarin as table 3.2 shows.

| Mandarin | TSL | English |
|---|---|---|
| Er-shi-yi 'two-ten-one' | TWENY-ONE | twenty-one |
| San-shi 'three-ten' | THIRTY | thirty |
| San-shi-er 'three-ten-two' | THIRTY-TWO | thrity-two |
| Si-shi 'four-ten' | FORTY | forty |
| Si-shi-san 'four-ten-three' | FORTY-THREE | forty-three |
| Wu-shi 'five-ten' | FIFTY | fifty |
| Wu-shi-si 'five-ten-four' | FIFTY-FOUR | fifty-four |
| Liu-shi 'six-ten' | SIXTY | sixty |
| Liu-shi-wu 'six-ten-five' | SIXTY-FIVE | sixty-five |
| Qi-shi 'seven-ten' | SEVENTY | seventy |

| | | |
|---|---|---|
| Qi-shi-liu 'seven-ten-six' | SEVENTY-SIX | seventy-six |
| Ba-shi 'eight-ten' | EIGHTY | eighty |
| Ba-shi-qi 'eight-ten-seven' | EIGHTY-SEVEN | eighty-seven |
| Jiu-shi 'nine-ten' | NINETY | ninety |
| Jiu-shi-ba 'nine-ten-eight' | NINETY-EIGHT | ninety-eight |
| San-bai 'three-hundred' | THREE-HUNDRED | three-hundred |
| Wu-qian 'five-thousand' | FIVE-THOUSAND | five thousand |
| Ba-wan 'eight-ten-thousand' | EIGHT-TEN THOUSAND | eighty thousand |

Table 3.2 Examples of numerals larger than teens in Mandarin, TSL, and English

The forms of the numerals like 20, 30, 40, and so forth to 90 in TSL are single signs, unlike Mandarin in which these numerals are made by a numeral from two to nine and the numeral ten. These signs are formed by a mixture of two signs—the handshape of a numeral and the handshape of TEN in TSL. For instance, the sign TWENTY as in Figure 3.5g combines the two extending fingers of TWO, Figure 3.5b, with the bending handshape of TEN. The resulting combination is given in Figure 3.5. Other examples are given as well. [8]

---

[8] This figure is from Su (2004: 126).

a. ONE    b. TWO    c. THREE    d. FOUR    e. FIVE

f. TEN    g. TWENTY    h. THIRTY    i. FOURTY    j. FIFTY

k. SIX    l. SEVEN    m. EIGHT    n. NINE

o. SIXTY    p. SEVENTY    q. EIGHTY    r. NINETY
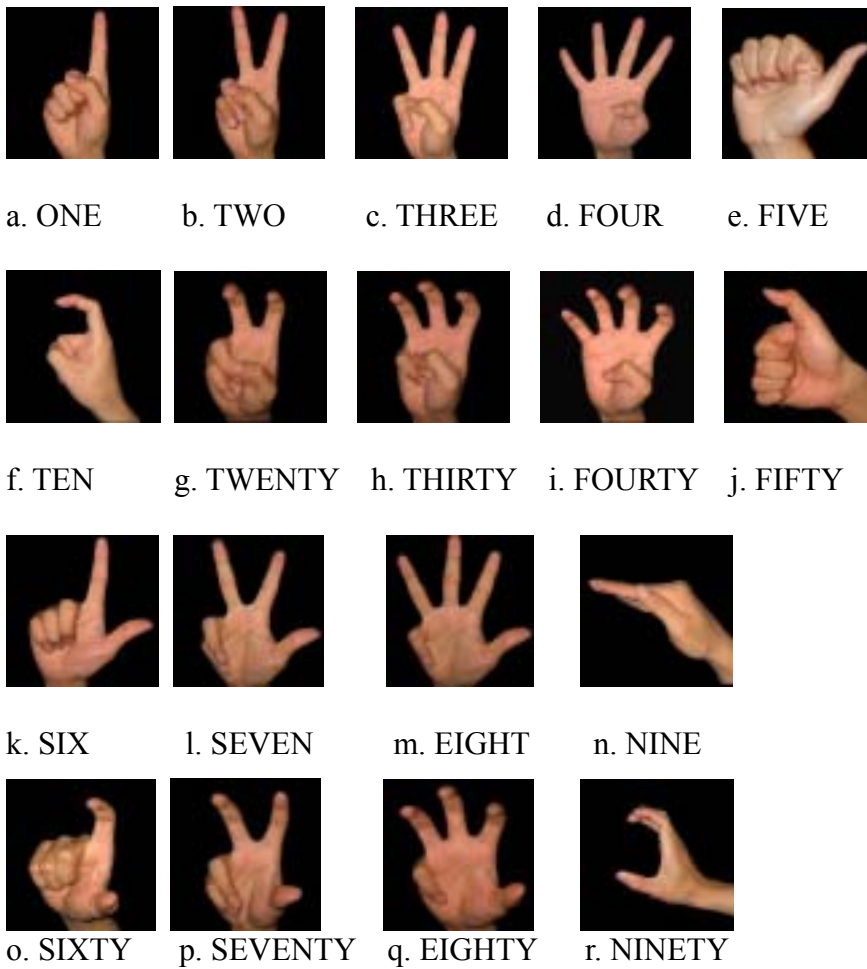
Figure 3.5

As one can see, the numeral system in TSL is iconic to number. In other words, as we can see from Figure 3.6a-d, the signs of the basic numbers, i.e. from ONE to FOUR exhibit a correspondence with the number of fingers. The number of fingers itself represents the number in the numeral system in TSL.

| a. ONE | b. TWO | c. THREE | d. FOUR |
|--------|--------|----------|---------|
| 'one'  | 'two'  | 'three'  | 'four'  |

Figure 3.6

### 3.2.2 Indefinite Singular Noun phrases

In English, indefinite singular markers occupy a required position, for example, it does not show much difference when we say 'I bought a book' or 'I bought one book' besides the stress of the number of referents, either one cannot be omitted in the noun phrase. In other words, a sentence like 'I bought book' will be ungrammatical without a/one or plural markings on the noun in English. However, we found that there is no such distinction between indefinite articles and ONE in TSL since the forms of either one in TSL are usually omitted.[9] That is to say, TSL signers do not always use the sign ONE when expressing a referent; instead, they use the bare nouns as in (5) and (6), in which only the bare noun BOOK is signed.[10] The sign ONE is used only when the number is especially emphasize as in (7).

(5) TABLE IX$_{pro1s}$ <u>BOOK</u> PUT.

'I put a book on the table.'

---

[9] The signs for the indefinite singular article and ONE are identical.
[10] The plurality of bare nouns in TSL is determined on the basis of the context.

(6) IX<sub>pro1s</sub> <u>BOOK</u> BUY.

'I bought a book.'

(7) IX<sub>pro1s</sub> HAVE <u>ONE</u> FRIEND.

'I have one friend.'


TSL has a sentence pattern similar to the *existential sentence* in Mandarin (Li and Thomson 1981), in which sentence initially there is an existential verb HAVE followed by a noun phrase.[11]  Sentence (8) is an example of an existential sentence in Mandarin. In TSL the indefinite article ONE must follow the verb HAVE. As sentences (9) shows, the sign ONE must occur after the verb HAVE. Otherwise, the referring head noun will be perceived as plural as in (10). Figure 3.7a provides with the illustration of HAVE, which is produced the hand open and the palm facing outward from the front of the chest.


    (8) You  yi  ge  nanhai zai  kan  baozhi. (Mandarin)
         Have one CL  boy   Asp read   newspaper
         'There is a boy reading the newspaper.'

    (9) <u>HAVE ONE STUDENT</u> NEWSPAPER READ.

     'There is a student reading the newspaper.'

    (10) <u>HAVE BOY</u> BASEBALL LIKE.

     'There are boys in fond of the baseball.'

---

3 According to Li and Thompson (1981), an existential sentence in Mandarin contains the existential verb yǒu or a verb of posture and it signals the existence of the referent of a noun phrase.

a. HAVE            b. ONE            c. STUDENT

Figure 3.7

### 3.2.3 Distributions of Numerals within Noun phrases

In this section the distribution of numerals in TSL noun phrases will be discussed. Unlike English or Mandarin, in which numerals display a fixed order, i.e., they are always in the position preceding the nouns, as examples (11) and (12) indicate. In TSL when the numeral only combines with the head noun, it can occur in either the pre-nominal or post-nominal position, as in examples (13) and (14). (13a) and (14a) exemplify the post-nominal positions of the numeral while (13b) and (14b) provides examples of the pre-nominal positions of the numeral. Notice that whether the numeral is pre-nominal or post-nominal, the sentence pairs (13) and (14) do not differ in meaning.

(11) a. There are _five_ _students_ in the classroom. (English)

    *b. There are _students_ _five_ in the classroom. (English)

(12) a. Ta mai-le     san   ben   shu. (Mandarin)

      He buy-Asp   three CL   book

      'He bought three books.'

    b. ? Ta mai-le      shu     san    ben. (Mandarin)

       He buy-Asp   book   three   CL

       'He bought three books.'

(13) a. TEACHER TABLE BOOK <u>THREE</u> PUT.

'The teacher put three books on the table.'

b. TEACHER TABLE <u>THREE</u> BOOK PUT.

'The teacher put three books on the table.'

(14) a. CAT <u>FIVE</u> IX$_{pro3s}$ HAVE.

'He has five cats.'

b. <u>FIVE</u> CAT IX$_{pro3s}$ HAVE.

'He has five cats.'


## 3.3  Quantifiers

As mentioned in section 3.1, words like *some, many, a few, a little, all*, and so forth are called 'quantifiers' (Jacobs 1993; Langacker 1991; McCawley 1988; O'Grady 2001; Radford 1988; Rijkhoff 2002; and Taylor 2002), 'quantity words' (Baker, 1995), 'non-numeral quantifiers' (Payne 1997), 'indefinite quantifiers' (Jackson 1991), or 'indefinite quantifiers-determiners' (Brinton 2000; Givon 1993; Borjars and Burridge 2001; Huddleston 1984; LaPalombara 1976). The various terms are all referring to the same class of words. In this thesis, I will use the term 'quantifiers' hereafter. In the following sections I show what quantifiers TSL has and what strategies TSL users adopt to express the concept of quantity. In addition, the correlation between quantifiers and nouns will be introduced in the following sections as well.


### 3.3.1   Examples of Quantifiers

Quantifiers in TSL include SOME, A LITTLE, MOST, and ALL, and also words

like EVERY, ANY, OTHER, ANOTHER, and ONLY-NUMERAL. There are three distinctive ways to express the identical concept of SOME in TSL. Sentences (15), (16), and (17) are instances of the three types of SOME in TSL. Figure 3.8 illustrates the first type SOME (A), which is produced with four fingers bending in one at a time onto the thumb. The second, SOME (B), is composed of the combination of three different handshapes; ONE, TWO, and THREE, as illustrated in Figure 3.9. The last one, SOME (C), is similar to the plural form of the determiner in which the extended index finger traces a circle around a space designating some entities, as Figure 3.10 shows.

(15) IX$_{pro3s}$ CLOTHES <u>SOME (A)</u> UNWEARABLE.

'He has some unwearable clothes.'



SOME (A)

Figure 3.8

(16) a. IX$_{pro3s}$ CLOTHES <u>SOME (B)</u> UNWEARABLE.

‘He has some unwearable clothes.’

b. IX$_{pro3s}$ <u>SOME (B)</u> CLOTHES UNWEARABLE.

‘He has some unwearable clothes.’



SOME (B)

Figure 3.9


(17) a. IX$_{pro1s}$ FRIEND <u>SOME (C)</u> BASEBALL LIKE.

‘Some of my friends like baseball.

b. IX$_{pro1s}$ <u>SOME (C)</u> FRIEND BASEBALL LIKE.

‘Some of my friends like baseball.



SOME (C)

Figure 3.10


Sentences (18), (19), and (20) are examples of A LITTLE, MOST and ALL. In TSL, the concept of *a little* vs. *a few* is incorporated into one sign. It is made by

making a fist in which the index and thumb rub each other, as illustrated in Figure 3.11.[12] From Figure 3.12 we can see that MOST is produced with the hand in front of the chest open with palm facing up. Figure 3.13 gives the illustration of the form of ALL, in which each hand traces half of a circle, meeting at the bottom.

(18) IX$_{pro1s}$ IX$_{det}$ MONEY A LITTLE-(HAVE); IX$_{pro2s}$ BORROW GO SPEND.

'I have a little money here; you can borrow it to spend. '



A LITTTE

Figure 3.11

(19) STUDENT MOST PASSIVE.

'Most students are passive.'



MOST

Figure 3.12

---

[12] TSL does not show countable and uncountable distinctions on the quantifiers; therefore, only one single sign conveys the concept of *a little/a few*.

(20) IX<sub>pro3s</sub> MONEY <u>ALL</u> TAKE BUY BOOK.

'He spent all the money buying books.'



ALL

Figure 3.13

Sentences (21) and (22) are examples of EVERY and ANY in TSL. The sign of EVERY is illustrated in Figure 3.14, in which the signer places the back of his fist, index finger extended, on the palm of the other hand. The sign of ANY is produced by shaking the index finger from side to side in front of the chest, as illustrated in Figure 3.15.

(21) IX<sub>pro3s</sub> <u>EVERY</u> BOOK READ FINISH.

'He finished reading every book.'



EVERY

Figure 3.14

(22) IX<sub>pro2s</sub> QUESTION <u>ANY</u> HAVE ASK TEACHER CAN.

'If you have any questions, you can ask the teacher.'



ANY

Figure 3.15

The following sentences provide instances of OTHER and ANOTHER. The sign OTHER is produced with the palm of one hand facing the chest while the palm of the other pushes outwards, as Figure 3.16 illustrates. ANOTHER is made up of two signs, OTHER and ONE, as in Figure 3.17.

(23) <u>OTHER</u> STUDENT COME WILL?

'Will other students come?'



OTHER

Figure 3.16

(24) <u>OTHER-ONE</u> STUDENT OPINION RAISE THINK DIFFERENT.

'Another student raised different opinions.'



ANOTHER

Figure 3.17

In TSL, although there is a sign for the concept 'only', it is not used with nouns.[13] If one wishes to modify a noun, there are a series of signs designating both the concept of 'only' and number that can be used. This group of signs are formed by placing numeral sign in front of the mouth. Figure 3.18 illustrates the sign ONLY-ONE, in which the sign ONE is placed in front of the mouth.[14]

(25) CHILD <u>ONLY-ONE</u> BE-THERE.

'Only one child is there.'



ONLY-ONE

Figure 3.18

---

[13] The sign 'ONLY' in TSL only co-occurs with verbs and modifies the number or frequency of events.
[14] Only from one to four.

Although the sign ONLY is not co-used with nouns in TSL, TSL users are still able to express the same concept in several ways according to the context. For instance, an emphatic pointing is often used to indicate the concept of 'only'. In sentences (26) and (27a), the pointing signs which follow the noun phrases create an 'only' meaning. In addition, TSL signers can also use other lexical items like AIM-AT or ESPECIALLY to express similar concepts. As in sentence (27b), the signer may use the sign AIM-AT together with pointing to reinforce the concept of 'only'. We can also see how the sign ESPECIALLY is used to convey 'only' from sentence (28).

(26) CHILDREN IX$_{det}$ <u>POINTING++</u> COME.[15]

'Only those children came.'

(27) a. CLOTH RED <u>POINTING++</u> BULL SEE ANGRY WILL.

'Only red cloth will make bulls angry. '

b. CLOTH RED <u>POINTING++</u> BULL <u>AIM-AT</u> ANGRY WILL.

'Only red cloth will make bulls angry. '

(28) IX$_{det}$ ISLAND OLD PEOPLE <u>ESPECIALLY</u> LIVE PLACE, YOUNG

LIVE CANNOT.

'The island is only for the old to live, the young are not allowed.'


### 3.3.2   Adverbial Quantifier and the concept of NONE

From the previous section it becomes clear that sign languages may exhibit different strategies from those used in Mandarin and English to express the concept of quantity. Thus, when we look at the following examples, it is not surprising to find

---

[15] '++' means repetitive.

that instead of using a quantifier before the noun like _much cake_ in English or _hen duo_ _dangao_ 'a lot of cake' in Mandarin, TSL indicates the concept of quantity through adverbial quantifiers. To express that there is a large amount of something, TSL users adopt the sign A LOT immediately after the verb at the end of the sentence, as in (29) and (30). In sentence (29) the noun CAKE itself does not contain any information about quantity and there is no quantifier adjacent to it either. The concept of quantity is expressed through the adverbial quantifier A LOT (see Figure 3.19d). A parallel example is given in (30) and Figure 3.20 in which the adverbial quantifier A LOT provides the quantity information pertaining to the number of people.

(29) $IX_{pro3s}$ CAKE EAT <u>A LOT</u>.

'He ate a lot of cake.'



a. $IX_{pro3s}$          b. CAKE



c. EAT          d. A LOT

Figure 3.19

(30) WEEKEND BASEBALL GAME PEOPLE GO <u>A LOT</u>.

'A lot of people go to the baseball games on the weekend.'



a. PEOPLE        b. GO        c. A LOT

Figure 3.20

The other quantifier in TSL encodes the concept of 'none', which indicates no references. In English, 'none' usually occurs with 'of' in the initial position of noun phrases as in (31). TSL, however, does not have a specific sign for 'none'. Instead, TSL users convey the concept of 'none' through the use of two signs, INSIDE and NO. INSIDE always follows the noun phrase while NO occurs after the predicate. Sentences (32) and (33) give examples of the use of INSIDE and NO, while Figure 3.21 offers illustrations of each sign.

(31) <u>None of</u> the students like the teacher. (English)

(32) IX<sub>pro3p</sub> <u>INSIDE</u> SPEAK ENGLSIH CAN <u>NO</u>.[16]

**'**None of them can speak English.**'**



a. INSIDE        b. NO

Figure 3.21

(33) IX<sub>pro1s</sub> FRIEND <u>INSIDE</u> MARRY <u>NO</u>.

'None of my friends are married.'

### 3.3.3   Distributions of Quantifiers with Nouns

In this section the distribution of each quantifier within nouns phrases will be illustrated. First, the concept of SOME, which includes three different signs, will be discussed. The first sign, SOME (A), is only allowed to occur after the noun in TSL as (34) and (35) show. In sentence (34) the quantifier SOME (A) is placed after the noun CLOTHES. Likewise, SOME (A) is signed after the nouns INSTANT-NOODLE and CAN in sentence (35).

(34) IX<sub>pro3s</sub> CLOTHES <u>SOME (A)</u> UNWEARABLE.

'He has some unwearable clothes.'

---

[16]  IX<sub>pro3p</sub> represents the third person plural pronouns.

(35) IX$_{pro3pl}$ GO SUPERMARKET BUY INSTANT-NOODLE CAN <u>SOME (A)</u>

   BUY.

   'They went to the supermarket to buy some instant noodles and cans.'

As for the second sign, SOME (B), it can either precede or follow the noun, as in (36) and (37). Note that, sentences (36) and (37) express the same meaning. The only difference between them is the position of the quantifier SOME (B).

   (36) IX$_{pro3s}$ CLOTHES <u>SOME (B)</u> UNWEARABLE.

   'He has some unwearable clothes.'

   (37) IX$_{pro3s}$ <u>SOME (B)</u> CLOTHES UNWEARABLE.

   'He has some unwearable clothes.'

The third type SOME (C) shows a pattern parallel to that of SOME (B) in that it can occur in either pre-nominal or post-nominal position as well, as in sentences (38) and (39). Again, the position of the quantifier does not affect the meaning of the sentence.

   (38) IX$_{pro1s}$ FRIEND <u>SOME (C)</u> BASEBALL LIKE.

   'Some of my friends like baseball.

   (39) IX$_{pro1s}$ <u>SOME (C)</u> FRIEND BASEBALL LIKE.

   'Some of my friends like baseball.

Like SOME (A), the quantifiers A LITTLE, MOST, ALL, ANY and

ONLY-NUMBER can only occur in the post-nominal position, as in sentences (40) to (46). In both sentences (40) and (42) the quantifiers A LITTLE and ALL are placed after the noun MONEY while the quantifier MOST occurs after the noun STUDENT in sentence (41).

(40) IX$_{pro1s}$ IX$_{det}$ MONEY <u>A LITTLE-</u>(HAVE) IX$_{pro2s}$ BORROW TO SPEND.

   'I have a little money here; you can borrow it to spend.'

(41) STUDENT <u>MOST</u> PASSIVE.

   'Most students are passive.'

(42) IX$_{pro3s}$ MONEY <u>ALL</u> TAKE BUY BOOK.

   'He spent all the money buying books.'

In sentences (43) and (44), ANY follows the head nouns IDEA and QUESTION, respectively, while in sentences (45) and (46), ONLY-NUMBER follow the head nouns STUDENT and CHILD respectively.

(43) EVERY PERSON IDEA <u>ANY</u> ALL RAISE DISCUSS CAN.

   'Everyone can raise any idea to discuss.'

(44) IX$_{pro2s}$ QUESTION <u>ANY</u> HAVE ASK TEACHER CAN.

   'If you have any questions, you can ask the teacher.'

(45) IX$_{pro3s}$ STUDENT <u>ONLY-TWO</u> LIVE TAIPEI.

   'Only two of his students live in Taipei.'

(46) CHILD <u>ONLY-ONE</u> BE-THERE.

   'Only one child is there.'

Other quantifiers that must precede the head noun are EVERY, OTHER, and ANOTHER as shown in (47) to (52).

(47) IX$_{pro3s}$ ASK <u>EVERY</u> TEACHER QUESTION SAME.

'He asked every teacher the same question.'

(48) IX$_{pro3s}$ <u>EVERY</u> BOOK READ FINISH.

'He finished reading every book.'

(49) <u>OTHER</u> STUDENT COME WILL?

'Will other students come?'

(50) IX$_{pro2s}$ <u>OTHER</u> IDEA RAISE TELL IX$_{pro1s.}$

'You can raise and tell me other ideas. '

(51) IX$_{pro1s}$ PLAN <u>OTHER-ONE</u> DRESS WEAR TO ATTEND WEDDING.

'I plan to wear another dress to attend the wedding.'

(52) <u>OTHER-ONE</u> STUDENT OPINION RAISE THINK DIFFERENT.

'Another student raised different opinions.'

### 3.3.4 Summary

Quantifiers' distributions are not as flexible as those of numerals in TSL. Specifically, except for the second sign SOME (B) and the third sign SOME (C), which can occur in either pre-nominal or post-nominal position, most quantifiers can only occur pre-nominally. The signs A LOT is presented as adverbial quantifiers in TSL. Table 3.3 offers a summary of the distributions of quantifiers within TSL noun phrases.

|  | Pre-nominal | Post-nominal | Adverbial |
|---|---|---|---|
| SOME (A) |  | ˇ |  |
| SOME (B) | ˇ | ˇ |  |
| SOME (C) | ˇ | ˇ |  |
| A LITTLE |  | ˇ |  |
| MOST |  | ˇ |  |
| ALL |  | ˇ |  |
| ANY |  | ˇ |  |
| ONLY-NUMBER |  | ˇ |  |
| EVERY | ˇ |  |  |
| OTHER | ˇ |  |  |
| ANOTHER | ˇ |  |  |
| A LOT |  |  | ˇ |

Table 3.2 The summary of distributions of quantifiers in TSL

## 3.4 Conclusion

In spite of the similarities between English, Mandarin and sign languages, TSL displays a lot of visually iconic characteristics in the quantification in noun phrases such as number of fingers representing numerals. The distribution of quantifiers, however, varies in terms of number ONE is not necessarily required and is usually omitted. In addition, when the noun phrase is composed of just the numeral and the noun, both pre-nominal and post-nominal positions are acceptable. Quantifiers in TSL like SOME (A), A LITTLE, ALL, MOST, ANY, and ONLY-NUMBER tend to occur

after the noun while the second type SOME (B) and the third type SOME (C) are permitted in either pre-nominal or post-nominal positions. Furthermore, EVERY, OTHER and ANOTHER always precede head noun; there are various types of quantifiers that show larger distributional varieties than quantifiers found in English.
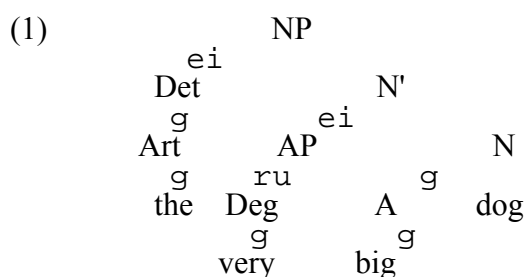
# CHAPTER 4

# WORD ORDER WITHIN TSL NOUN PHRASES

## 4.1 Introduction

Research on noun phrases has tended to focus on morphosyntactic structure and word order universals (Croft 2003; Croft and Deligianni 2001; Hawkins 1983; Rijkhoff 2002). One aspect given great attention is finding correlation between the order of the constituents within noun phrases and the types of constituents which occur. In other words, do constituents encode certain properties which determine their order within a noun phrase? Croft and Deligianni (2001) took a typological point of view and proposed the Pre-nominal Integration hypothesis claiming that in contrast with post-nominal modifiers, which tend to be contrastive and express salient information in the utterance, pre-nominal modifiers tend to be non-contrastive and are more unified with the head semantically, more compound-like, and express inherent properties. Thus, pre-nominal modifiers are more tightly integrated into the noun phrase than post-nominal modifiers.

Similarly, Rijkhoff (1990, 2002) proposed that the ordering patterns in noun phrases can be regarded as a consequence of the function of the combination of the following three principles: the principle of domain integrity (PDI), the principle of head proximity (PHP), and the principle of scope (Pos). The first principle, PDI, indicates that constituents belonging to the same domain tend to appear together; e.g., in the domain of a noun phrase, constituents like adjectives and the head noun will appear together. The second principle, PHP, predicts that the head of a domain tends

to be contiguous with the head of its superordinate domain. For instance, as in the following tree structure, the head of the domain AP, *big*, according to PHP, will be contiguous with the head of the domain NP, which is the superordinate domain of AP, i.e. the head noun *dog*. The contiguity of *big* and *dog* in the following phrase conforms to the prediction of PHP.


(1)
```
                    NP
              ei
        Det             N'
         g        ei
        Art       AP          N
         g     ru         g
        the   Deg      A      dog
              g       g
            very    big
```


The third principle, Pos, claims that an operator is expressed in the periphery of the layer it has in its scope. In the case of noun phrases, operators semantically designate the notions of 'quality', 'quantity', and 'locality'. A quantity operator in a noun phrase is realized by quantifiers or numerals and has the noun phrase in its scope. Thus, as in the phrase *three big dogs*, the quantity operator *three* has the qualified part *big dogs* in its scope and is expressed in the phrase-initial position, the periphery of the layer. These three principles all work together following a general principle of iconic ordering, which indicates that constituents of an expression will iconically reflect the semantic content of the expression in which they occur. By these three principles, eight possible word order patterns of noun phrase in count-noun languages are predicted, see (2).

(2) Possible Patterns of Noun Phrase Constituents as Predicted by Rijkhoff (1990,

2002)

(dem for demonstratives, num for numerals, A for adjectives, N for nouns)


a. dem num A N

b. dem A N num

c.  num A N dem

d.  A N num dem

e.  dem num N A

f.  dem N A num

g.  num N A dem

h.  N A num dem


Langacker (1991) and Taylor (2002: 343) also try to give an explanation to the word order within noun phrases from the perspective of cognitive linguistics. They consider nouns as a kind of type or schema and the noun phrase as an instance of that type, see Figure 4.1.

Noun (Type, schema)

NP      NP      NP      NP…

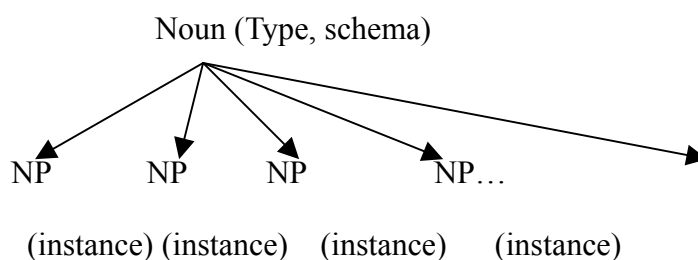(instance) (instance)   (instance)     (instance)

Figure 4.1 Schema and instance

Thus, the conceptual organization of a noun phrase includes specification, instantiation, quantification, and grounding. Possible instances of a type may be narrowed down to a certain set through specification, namely, the addition of adjectival modifier. For example, a bare noun, such as *book*, designates a type. However, *good book* designates a more specific type than that designated by *book*. Instantiation is the relation between the type and its instances, that is, the linking of the type and its instances. Quantification has to do with the number and quantity of the designated instances, which is usually designated by the use of quantifiers or numerals. Finally, grounding, which is completed through determiners, is the process whereby the speaker 'locates' the designated instances from the standpoint of the speech event. These four components of the conceptual organization of noun phrases may be illustrated as follows:

(3) (Grounding (Quantification (Instantiation (Specification (Type)))))

Although it is not necessarily the case that the layered conceptual structure reveals a one-to-one correspondence to morphosyntactic structure, it is not difficult to observe the preservation of this conceptual layering in syntax. As exemplified in (4), the English noun phrase corresponds consistently with (3). [17]

---

[17] According Taylor (2002), full isomorphism between the conceptual and syntactic organization is upset by some factors and the analysis of nominals may be much more complex especially when we take the count-mass distinction into consideration.

(4) Those       three       big       houses

     ↓        ↓        ↓        ↓

(Grounding (Quantification (Specification    (Type))))

The prediction enables us to give a comprehensible explanation to the ordering of constituents within noun phrases.

Thus, when turning to look at the syntactic structure of noun phrases in TSL, which allow both pre-nominal and post-nominal modifiers, it becomes necessary to examine distributional data closely to see if it follows the generalizations given above. This chapter aims to investigate the word order within noun phrases in TSL and try to seek such a generalization. Do TSL noun phrases conform to Rijkhoff's (1990; 2002) or Langacker's (1991) and Taylor's (2002) predictions? Section 4.2 will discuss noun phrases determiners. After that, the orders of numerals and quantifiers within noun phrases containing adjectives will be described in section 4.3. Section 4.4 will talk about the order and combination of determiners, quantifiers, and adjectives in noun phrases step by step. Finally, section 4.5 concludes the chapter.

## 4.2 Noun Phrases Consisting of Determiners and Nouns

Unlike English, in which determiners mainly comprise of articles and demonstratives, TSL determiners include singular, plural, proximal, and distal demonstratives. The following sections will provide a picture of the distributions of determiners in noun phrases in TSL.

### 4.2.1  Nouns and Singular Determiners

Both the proximal and the distal singular determiners are expressed through identical forms; i.e. the YI handshape (produced with the index extended) to point towards the referents. Although the direction of pointing depends on the locations of referents, it is still easy to make a contrast between proximal and distal demonstrative determiners. For proximal determiners, the hand tends to hold right in front of the chest and the index points outwards or downwards as in sentence (6), see Figure 4.2a. Distal determiners involve placing the hand further from the signer with the index pointing sideways towards the referents, as shown in Figure 4.2b.

(5) $\underline{IX_{det}}$ STUDENT CLOTHES WASH.

 'This student washed the clothes.'

(6) $\underline{IX_{det}}$ DOG $IX_{pro3s}$ BITE.

 'He bit that dog.'



a. THIS          b. THAT

Figure 4.2

The data show that in TSL most demonstrative determiners, regardless of proximity, usually occur in the initial position of noun phrases, as exemplified in sentences (7) to (9), but when the referring entities are present and visible to both the

signer and the addressee, the head noun may precede the determiners as well, see sentences (10) and (11). In this case, the signer first mentions the referring entities, which he and the addressee already see, to emphasize what is being referred to, and then indicate the referents through pointing, i.e. the TSL determiner. Take example (10) for instance, this expression is used when there is a group of people present to the signer and addressee. In order to specify whether a man or a woman is referred to, the signer first gives the information about what he is going to mention, in this case a man. Then a more specific indication towards the referent is accomplished through a pointing sign, namely, a definite determiner. Example (11a) displays a parallel usage of the post-nominal determiner, under the circumstance that both the signer and the addressee can see the airplane they are talking about. Sentence (11b) conveys nothing about whether the airplane is visible to the signer and addressee or not.

(7) $\underline{IX}_{det}$ GIRL MY STUDENT.

'This girl is my student.'
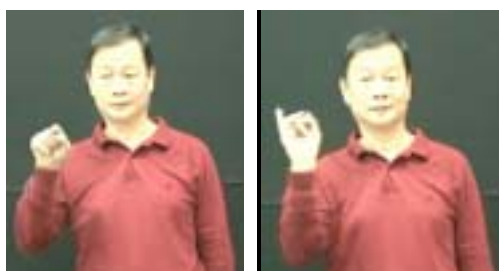


a. $\underline{IX}_{det}$          b. GIRL

Figure 4.2

(8) $\underline{IX}_{det}$ TREE LAST-YEAR I PLANT.

'I planted this tree last year.'

(9) $\underline{IX}_{det}$ BOY TALL.

'This boy is tall.'

(10) BOY IX<sub>det</sub> TALL.

'The boy over there is tall.'

(11) a. AIRPLANE IX<sub>det</sub> REACH AMERICA.

'This airplane is flying to America.'

b. IX<sub>det</sub> AIRPLANE REACH AMERICA.

'This airplane is flying to America.'



a. AIRPLANE          b. IX<sub>det</sub>

Figure 4.3



a. IX<sub>det</sub>          b. AIRPLANE

Figure 4.4

Thus singular proximal and distal determiners are inclined to occur before the head nouns in TSL noun phrases. Only when the referents are present and visible to both the signer and the addressee are they likely to follow the head nouns.

**4.2.2 Nouns and Plural Determiners**

In order to express the plurality, the proximal and distal determiners demonstrate two strategies. One is to repeat the pointing sign accordingly as in sentence (12), see Figure 4.5a. The other is to make a circle around all referents before signing the head noun, as in sentences (13) and (14), see Figure 4.6b.

(12) $\underline{IX_{det}}$   $\underline{IX_{det}}$   $\underline{IX_{det}}$ THREE BOY $IX_{pro1s}$ STUDENT.

'These three boys are my students.'



a. $IX_{det}$



b. THREE          c. BOY

Figure 4.5

(13) $\underline{IX_{det}}$ (with a circle) BOY THREE $IX_{pro1s}$ STUDENT.

'These three boys are my students.'

(14) <u>IX</u>det (with a circle) STUDENT TEACHER HIT.

'Those students hit the teacher.'
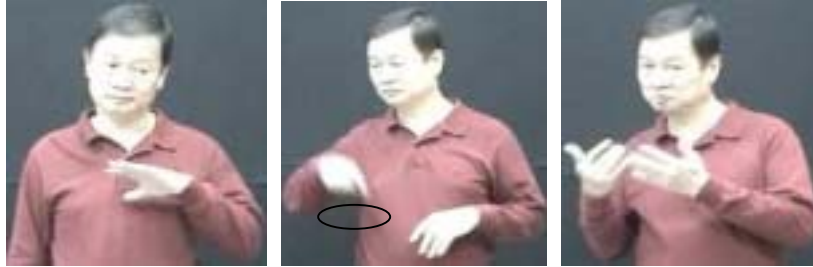


a. TEACHER        b. IXdet        c. STUDENT



d. HIT+MAN (TEACHER)

'hit (the teacher)'

Figure 4.6

In addition to these two strategies, there is another way to express the distal plural determiner with numerals. The numeral is combined with the direction of the distal determiner and occurs before the head noun, as exemplified in sentence (15), see Figure 4.7a.[18]

---

[18] In TSL only the signs for one to four can combine with the distal determiner.

(15) <u>IX<sub>det</sub></u>-THREE MEN IX<sub>pro1s</sub> FRIEND.

'Those three men are my friends.'



a. IX<sub>det</sub> -THREE      b. MEN

Figure 4.7


Finally, the final way of signaling plural referents does not involve agreement. It involves the singular determiner, pointing, followed by a numeral, like the sentence (16). A sentence like sentence (17) gives a singular reading, since there is no numeral in the sentence.


(16) <u>IX<sub>det</sub></u> (single pointing) MEN <u>THREE</u> TALL.

'These three men are tall.'



a. IX<sub>det</sub>         b. MEN              c. THREE

d. TALL

Figure 4.8

(17) <u>IX<sub>det</sub></u> (single pointing) MAN TALL.

'This man is tall.'

In terms of word order, plural determiners made through the repetitive pointing or with a circle are similar to singular determiners, i.e. they are allowed in either the pre-nominal or the post-nominal position, as in sentences (18a-b) and (19a-b). Similarly, head nouns are allowed to sign before the plural determiners when they are visible and present to the signer and addressee.

(18) a. <u>IX<sub>det,</sub> IX<sub>det,</sub> IX<sub>det,</sub> CAT</u> IX<sub>pro1s</sub> BELONG-TO.

'Those cats belong to me.'

  b. <u>CAT IX<sub>det,</sub> IX<sub>det,</sub> IX<sub>det</sub></u> IX<sub>pro1s</sub> BELONG-TO.

'Those cats belong to me.'

(19) a. <u>IX<sub>det</sub> (with a circle) CAT</u> IX<sub>pro1s</sub> BELONG-TO.

'Those cats belong to me.

  b. <u>CAT IX<sub>det</sub> (with a circle)</u> IX<sub>pro1s</sub> BELONG-TO.

'Those cats belong to me.

### 4.2.3    Summary

Thus, singular determiners are allowed in either the pre-nominal or the post-nominal position in TSL depending on context. When referents are visible to both the signer and the addressee the determiners can follow the head noun. Plural referents can be expressed in four ways in TSL. Plural determiners include repetitive pointing and tracing a circle with the index finger and can occur in either the pre-nominal or post-nominal positions in noun phrases.[19] As mentioned in the previous section, determiners are the elements that convey the last step of conceptual organization, grounding. It is not surprising to find determiner in either pre-nominal or post-nominal position in TSL, since they are in the peripheral positions of the phrase and locate the referents from the standpoint of the speech event. Table 4.1 gives a summary of the distributions of determiners and nouns in TSL.

|  | Pre-nominal | Post-nominal |
|---|---|---|
| Singular determiners | ˇ | ˇ |
| Plural determiners (repetitive pointing) | ˇ | ˇ |
| Plural determiners (with a circle) | ˇ | ˇ |

Table 4.1 Distributions of determiners with nouns in TSL

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[19] The distributions of the other two types of plural determiners will be further discussed in section 4.4.2. Here I focus on the two that can occur without the numeral in noun phrases.

**4.3  Numerals and Quantifiers with Noun Phrases Containing Adjectives**

**4.3.1   Noun Phrases Containing Numerals and Adjectives**

The composition of noun phrases with a numeral, adjective, and noun are more complex since not only the numeral but also the adjective can occur in either pre-nominal position or post-nominal position. As we can see, the numeral and adjective may occupy the pre-nominal and post-nominal slot as in sentences (20) and (23) or appear together in the pre-nominal or post-nominal place as in sentences (21) and (22). In sentence (20) the numeral ONE is placed before the head noun MAN while the adjective GOOD is placed after the head noun. On the contrary in (23), the numeral FIVE is put after the head noun CAT while the adjective CUTE is in front of the head noun. In sentence (21) the numeral TWO is adjacent to the adjective BLACK in post-nominal position while the numeral FIVE together with the adjective CUTE occur in the pre-nominal position in sentence (22). However, if we consider the adjective-noun/ noun-adjective phrases as a noun phrase unit, it becomes clear that the numeral may either precede or follow it. Examples (20) and (21) show that the numeral can precede or follow noun-adjective phrases while examples (22) and (23) indicate the numeral is able to precede or follow adjective-noun phrases.

    (20) IX$_{pro3s}$ TELL-ME HAVE <u>**ONE**</u> <u>MAN GOOD</u> INTRODUCE TO-ME.

       'She said she'd like to introduce a good guy to me.'

    (21) IX$_{pro1s}$ <u>HIGH HEELS BLACK</u> **TWO** HAVE.

       'I have two pairs of black high heels.'

    (22) IX$_{pro3s}$ <u>**FIVE**</u> <u>CUTE CATS</u> HAVE.

       'She has five cute cats.'

(23) IX$_{pro3s}$ RAISE <u>CUTE CAT</u> **FIVE**.

'She raises five cute cats.'

The data show that word order in TSL corresponds to the conceptual organization mentioned in (3). Although there are no uniform distributions of adjectives and numerals in TSL, we still find that adjectives are always adjacent and closer to the head nouns than numerals since they fulfill the first step of conceptual organization, specification. Numerals, which fulfill the second step of conceptual organization, quantification, are observed in the more peripheral positions when they co-occur with adjective-noun or noun-adjective phrases, as in (21) and (22).

### 4.3.2   Noun Phrases Containing Quantifiers and Adjectives

Following the distribution of each quantifier in simple noun phrases mentioned in 3.3.2, this section proceeds to discuss the combination of each quantifier with adjectives and nouns. First, let's look at the SOME quantifiers. The first SOME (A), shows a wide range of distributional patterns. It may precede or follow the adjective-noun/ noun-adjective phrases as in sentences (24a) to (24d) or it may follow the head noun but precede the adjective as well as in sentence (24e). SOME (B) and SOME (C) reveal a consistent distribution. They are only allowed to appear in the preceding or following positions of adjective-noun phrases as in sentences (25) and (26).

(24) a. IX$_{pro3s}$ ASK TEACHER **SOME (A)** <u>DIFFICULT QUESTION</u>.

'He asked the teacher some difficult questions.'

b. IX<sub>pro3s</sub> ASK TEACHER **<u>SOME (A)</u> <u>QUESTION DIFFICULT</u>**.

'He asked the teacher some difficult questions.'

c. IX<sub>pro3s</sub> ASK TEACHER <u>DIFFICULT QUESTION</u> **<u>SOME (A)</u>**.

 'He asked the teacher some difficult questions.'

d. IX<sub>pro3s</sub> ASK TEACHER <u>QUESTION DIFFICULT</u> **<u>SOME (A)</u>**.

'He asked the teacher some difficult questions.'

e. IX<sub>pro3s</sub> ASK TEACHER <u>QUESTION</u> **<u>SOME (A)</u>** <u>DIFFICULT</u>.

'He asked the teacher some difficult questions.'

(25) a. IX<sub>pro3s</sub> ASK TEACHER **<u>SOME (B)</u>** <u>DIFFICULT QUESTION</u>.

'He asked the teacher some difficult questions.'

b. IX<sub>pro3s</sub> ASK TEACHER <u>DIFFICULT QUESTION</u> **<u>SOME (B)</u>**.

'He asked the teacher some difficult questions.'

(26) a. IX<sub>pro3s</sub> ASK TEACHER **<u>SOME (C)</u>** <u>DIFFICULT QUESTION</u>.

'He asked the teacher some difficult questions.'

b. IX<sub>pro3s</sub> ASK TEACHER <u>DIFFICULT QUESTION</u> **<u>SOME (C)</u>**.

'He asked the teacher some difficult questions.'


Besides SOME, there are some quantifiers which can only occur in the initial positions of the noun phrase when co-occurring with adjectives. They are MOST, OTHER, and ANTOTHER. These quantifiers always precede adjective-noun and noun-adjective phrases.

(27) a. IX<sub>pro1s</sub> **MOST** OLD CLOTHES THROW.

   'I threw away most of the old clothes.'

   b. IX<sub>pro1s</sub> **MOST** CLOTHES OLD THROW.

   'I threw away most of the old clothes.'

(28) a. IX<sub>pro3s</sub> HAVE **OTHER** BIG CUP.

   'He has other big cups.'

   b. IX<sub>pro3s</sub> HAVE **OTHER** CUP BIG.

   'He has other big cups.'

(29) a. IX<sub>pro1s</sub> **OTHER-ONE** LITTLE BOTTLE LIKE.

   'I like a different little bottle.'

   b. IX<sub>pro1s</sub> **OTHER-ONE** BOTTLE LITTLE LIKE.

   'I like a different little bottle.'


Unlike the above quantifiers, the following set of quantifiers in TSL show a wider range of distributions, i.e., they are allowed not only in the phrase-initial but also phrase-final positions. ALL, EVERY, and ANY are observed in both the phrase-initial positions, as in 30a-b, 31a-b, and 32a-b, and the phrase-final positions, as in 30c-d, 31c-d, and 32c-d, regardless of the adjective's position.


 (30) a. IX<sub>pro1s</sub> **ALL** OLD CLOTHES THROW.

   'I threw away all the old clothes.'

   b. IX<sub>pro1s</sub> **ALL** CLOTHES OLD THROW.

   'I threw away all the old clothes.'

c. IX$_{pro1s}$ <u>OLD CLOTHES</u> **ALL** THROW.

'I threw away all the old clothes.'

d. IX$_{pro1s}$ <u>CLOTHES OLD</u> **ALL** THROW.

'I threw away all the old clothes.'

(31) a. IX$_{pro3s}$ **EVERY** <u>YOUNG GIRL</u> LIKE.

'Every young girl likes him.'

b. IX$_{pro3s}$ **EVERY** <u>GIRL YOUNG</u> LIKE.

'Every young girl likes him.'

c. IX$_{pro3s}$ <u>YOUNG GIRL</u> **EVERY** LIKE.

'Every young girl likes him.'

d. IX$_{pro3s}$ <u>GIRL YOUNG</u> **EVERY** LIKE.

'Every young girl likes him.'

(32) a. IX$_{pro2s}$ **ANY** <u>BLACK SHOES</u> HAVE?[20]

'Do you have any black shoes?'

b. IX$_{pro2s}$ **ANY** <u>SHOES BLACK</u> HAVE?

'Do you have any black shoes?'

c. IX$_{pro2s}$ <u>BLACK SHOES</u> **ANY** HAVE?

'Do you have any black shoes?'

d. IX$_{pro2s}$ <u>SHOES BLACK</u> **ANY** HAVE?

'Do you have any black shoes?'


A LITTLE is similar to but a bit different from the three quantifiers above in that when it is in the phrase-initial position, the adjective can only precede the head noun;

---

[20] IX$_{pro2s}$ represents the second person singular pronoun.

in this case, the phrase will be ungrammatical if the adjective follows the head noun in the phrase-final position, as (33b) indicates:

(33) a. IX$_{pro3s}$ **A LITTLE** BLUE DYESTUFF GIVE-ME.

   'He gave me a little blue dyestuff.'

   b. * IX$_{pro3s}$ **A LITTLE** DYESTUFF BLUE GIVE-ME.

   c. IX$_{pro3s}$ BLUE DYESTUFF **A LITTLE** GIVE-ME.

   'He gave me a little blue dyestuff.'

   d. IX$_{pro3s}$ DYESTUFF BLUE **A LITTLE** GIVE-ME.

   'He gave me a little blue dyestuff.'

### 4.3.3   Summary

In the above sections I have introduced the distributions of each quantifier with noun phrases containing adjectives. In sum, we can find that SOME (A) turns out to be the most flexible one among the quantifiers discussed. It is allowed to precede or follow adjective-noun/noun-adjective phrases and to intervene between nouns and adjectives when the adjective is in the phrase-final position. When it comes to SOME (B) and SOME (C), they can only co-occur with the adjective-noun construction in the beginning or at the end of the noun phrases. Table 4.3 provides a summary of the distributions of each SOME with adjectives in TSL noun phrases.

| | SOME (A) | SOME (B) | SOME (C) |
|---|---|---|---|
| __ A N | ˇ | ˇ | ˇ |
| __ N A | ˇ | | |
| A N __ | ˇ | ˇ | ˇ |
| N A __ | ˇ | | |
| N __ A | ˇ | | |
| A __ N | | | |

Table 4.3 Distributions of SOME with adjectives in TSL noun phrases

As to the remaining TSL quantifiers, MOST, OTHER, and ANOTHER are allowed to precede adjective-noun phrases and noun-adjective phrases. ALL, EVERY, and ANY are compatible with adjective-noun phrases and noun-adjective phrases in both the phrase-initial and phrase-final positions. A LITTLE differs from ALL, EVERY, and ANY in that when appearing in the phrase-initial position, it is not compatible with noun-adjective phrases.

Table 4.4 and table 4.5 gives the summaries of the distributions of quantifiers with adjectives in TSL.

| | MOST | OTHER | ANOTHER |
|---|---|---|---|
| __ A N | ˇ | ˇ | ˇ |
| __ N A | ˇ | ˇ | ˇ |
| A N __ | | | |
| N A __ | | | |

Table 4.4 Distributions of MOST, OTHER, and ANOTHER with adjectives

| | ALL | EVERY | ANY | A LITTLE |
|---|---|---|---|---|
| __ A N | ˘ | ˘ | ˘ | ˘ |
| __ N A | ˘ | ˘ | ˘ | |
| A N __ | ˘ | ˘ | ˘ | ˘ |
| N A __ | ˘ | ˘ | ˘ | ˘ |

Table 4.5 Distributions of ALL, EVERY, ANY, and A LITTLE with adjectives

The data here also show that adjectives are always adjacent to the head nouns and quantifiers are observed to be further from the head nouns than adjectives. In other words, the data indicate that the ordering of quantifiers and adjectives within noun phrases in TSL does conform to conceptual organization. That is, specification is earlier than quantification and hence, adjectives are always adjacent and closer to head nouns than quantifiers.

## 4.4 Noun Phrases Consisting of Determiners, Numerals, Adjectives

### 4.4.1 Noun Phrases Containing Determiners and Adjectives

When a noun phrase contains both a determiner and an adjective, there are several possible orders of constituents. Generally speaking, either the pre-nominal or post-nominal positions, the adjectives are adjacent to the head nouns in TSL. Likewise, when noun phrases containing adjectives occur with determiners, the adjectives tend to occur adjacent to the head nouns, as we can see from the following examples. In sentence (34a) and (34b), the determiners precede the noun phrases, which contain the adjective CUTE in either the pre-nominal or the post-nominal position. Also, in sentence (34d), the adjective CUTE is adjacent to the head noun CAT in the pre-nominal position with the determiner following the head noun.

However, determiners may also occur in the post-nominal position. In such cases, they must occur adjacent to the head nouns. As a result, when the determiners occur after the head nouns, the adjectives can only attach to the head nouns in the phrase-initial position, as in (34d) or follow the determiners and appear in the phrase-final position, like in sentence (34c). The intervention of adjectives between the head noun and the determiner, as with CUTE between CAT and the determiner in sentence (34e), will result in an ungrammatical sentence.

(34) a. <u>IX<sub>det</sub></u> <u>CUTE</u> CAT IX<sub>pro1s</sub> BELONG-TO.

'That cute cat belongs to me.'

b. <u>IX<sub>det</sub></u> CAT <u>CUTE</u> IX<sub>pro1s</sub> BELONG-TO.

'That cute cat belongs to me.'

c. CAT <u>IX<sub>det</sub></u> <u>CUTE</u> IX<sub>pro1s</sub> BELONG-TO.

'That cute cat belongs to me.'

d. <u>CUTE</u> CAT <u>IX<sub>det</sub></u> IX<sub>pro1s</sub> BELONG-TO.

'That cute cat belongs to me.'

e. *CAT <u>CUTE IX<sub>det</sub></u> IX<sub>pro1s</sub> BELONG-TO.

'That cute cat belongs to me.'

According to the conceptual organization of noun phrases in (3), specification, which is realized by adjectives, takes place earlier than grounding, which is fulfilled by determiners. Thus, adjectives are supposed to be closer to head nouns than determiners. Here the data imply that except for exceptions like (34c), in which the head noun is signed first and the determiner follows the head noun before the

adjective, most cases in TSL noun phrases comply with conceptual organization.

### 4.4.2 Noun Phrases Containing Determiners and Numerals

In spoken languages like English or Mandarin, noun phrases containing a determiner and a numeral usually display a rigid order. For example, in English the determiners are always in front of the numerals in noun phrases, e.g. *those three boys*. A phrase with a reverse order will then be ungrammatical, e.g. *\*three those boys*. Mandarin, which only allows pre-nominal determiners, does not allow a determiner to occur after the numeral either. For instance, the concept of 'thes*e* two books' only allows the determiner *zhe* in the phrase-initial position.The noun phrase consists of the numeral *liang* (two), classifier *ben*, and the head noun *shu* (book), as in the phrase *zhe liang ben shu*. A phrase like *\*liang ben zhe shu* 'these two books' is ungrammatical. However, in TSL word order is not so rigid. As mentioned in section 4.2.2, the four ways of indicating plurality in TSL are repetitive pointing, a circle made by the index, pointing with a numeral and a blend of determiner and numeral.

Repetitive pointing is allowed in both the phrase-initial and the phrase-final positions, as examples in (35) show. In examples (35a-b) the plural determiners are in the phrase-initial position, whether the numeral THREE comes before after the head noun BOY. In (35c-d), determiners appear in the phrase-final position.


(35) a. <u>IX$_{det}$</u>  <u>IX$_{det}$</u>  <u>IX$_{det}$</u> BOY <u>THREE</u> IX$_{pro1s}$ STUDENT.

      'These three boys are my students.'

    b. <u>IX$_{det}$</u>  <u>IX$_{det}$</u>  <u>IX$_{det}$</u> <u>THREE</u> BOY IX$_{pro1s}$ STUDENT.

      'These three boys are my students.'

c. BOY THREE IX$_{det}$  IX$_{det}$  IX$_{det}$ IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

d. THREE BOY IX$_{det}$  IX$_{det}$  IX$_{det}$ IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

The second type of plural determiner in TSL, tracing a circle around the referents, can only occur in the phrase-initial position when a numeral follows the head noun, as in example (36a). It will be ungrammatical when the numeral is before the head noun, as in (36b). Yet, there is no such restriction when it is in the phrase-final position. Numerals are acceptable in either the pre-nominal or post-nominal positions when the determiners are in the phrase-final position. Examples (36c-d) reveal that THREE can precede or follow the head noun BOY when the determiner is in the phrase-final position.

(36) a. IX$_{det}$ (with a circle) BOY THREE IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

*b. IX$_{det}$ (with a circle) THREE BOY IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

c. BOY THREE IX$_{det}$ (with a circle) IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

d. THREE BOY IX$_{det}$ (with a circle) IX$_{pro1s}$ STUDENT.

'These three boys are my students.'

The third way of indicating plurality, a pointing with a numeral, shows the least

restriction on its distribution. Like the second type, it is able to occur in the phrase-initial position, as in sentences (37a-b), or the phrase-final position, as in sentences (37c-d). In these two cases, the numeral may precede or follow the head noun as well. However, note that there is still an expression which is like the topicalization or the "topic prominence" in Mandarin (Li and Thompson 1997), in which the topic, referring to something that the speaker assumes the addressee knows, here the head noun, occurs in the phrase-initial position with the determiner immediately following the head noun and the numeral in the phrase-final position, as sentence (37e) shows. [21]

(37) a. <u>IX<sub>det</sub></u> <u>FOUR</u> CAR IX<sub>pro1s</sub> FRIEND BELONG-TO.

   'Those four cars belong to my friend.'

   b. <u>IX<sub>det</sub></u> CAR <u>FOUR</u> IX<sub>pro1s</sub> FRIEND BELONG-TO.

   'Those four cars belong to my friend.'

   c. <u>FOUR</u> CAR <u>IX<sub>det</sub></u> IX<sub>pro1s</sub> FRIEND BELONG-TO.

   'Those four cars belong to my friend.'

   d. CAR <u>FOUR</u> <u>IX<sub>det</sub></u> IX<sub>pro1s</sub> FRIEND BELONG-TO.

   'Those four cars belong to my friend.'

   e. CAR <u>IX<sub>det</sub></u> <u>FOUR</u> IX<sub>pro1s</sub> FRIEND BELONG-TO.

   'Those four cars belong to my friend.'

The fourth way to indicate plurality is to blend the determiner and the numeral together, as in examples (38a-b). This blend of determiner and numeral can occur

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[21] Generally speaking, topicalization refers to the placement of the topic in sentence-initial position like "*Those girls, they giggle when they see me.*"

either before or after the head noun.


(38) a. <u>IX<sub>det</sub></u>-FOUR CAR IX<sub>pro1s</sub> FRIEND BELONG-TO.

'Those four cars belong to my friend.'

b. CAR <u>IX<sub>det</sub></u>-FOUR IX<sub>pro1s</sub> FRIEND BELONG-TO.

'Those four cars belong to my friend.'


Similar to noun phrases containing determiners and adjectives, in the case of noun phrases containing determiners and numerals, there is also an exception in which the head noun occurs in the initial position of the phrase and the determiner immediately follows the head noun. Yet, as we can see from the data, in most cases the word orders of noun phrases containing determiners and numerals also conform to the conceptual organization; i.e. numerals are observed closer to the head nouns than determiners since quantification takes place earlier than grounding.


### 4.4.3 Noun Phrases Containing Determiners, Numerals, and Adjectives

When a noun phrase contains a determiner, an adjective, and a numeral; the determiners are in the phrase-initial positions while the numerals are in either the phrase-final positions, as in sentences (39) and (40), or in the position following the determiner, as in sentences (41) and (42). Adjectives are found to be adjacent to the head nouns in this case. As long as they are adjacent to the head nouns, they may appear either before the head noun as in sentences (40) and (42) or after the head noun as in sentences (39) and (41).

(39) IX<sub>det</sub> BOY <u>NAUGHTY</u> <u>FIVE</u> IX<sub>pro3s</sub> BELONG-TO STUDENT.

    'These five naughty boys are my students.'

(40) IX<sub>det</sub> <u>NAUGHTY</u> BOY <u>FIVE</u> IX<sub>pro3s</sub> BELONG-TO STUDENT.

    'These five naughty boys are my students.'

(41) IX<sub>det</sub> <u>FIVE</u> BOY <u>NAUGHTY</u> IX<sub>pro3s</sub> BELONG-TO STUDENT.

    'These five naughty boys are my students.'

(42) IX<sub>det</sub> <u>FIVE</u> <u>NAUGHTY</u> BOY IX<sub>pro3s</sub> BELONG-TO STUDENT.

    'These five naughty boys are my students.'

### 4.4.4 Summary

From the above analyses and descriptions, we see that TSL presents a quite flexible order of the constituents within noun phrases. Also, it can be concluded that, in TSL, adjectives will almost always be positioned adjacent to the head noun. Likewise, if there is no adjective, but there is a numeral and any other modifier in a noun phrase, then the numeral must be placed adjacent to the head noun. Determiners, on the other hand, tend to occur in the phrase-initial or phrase-final positions in most cases. When a noun phrase includes a determiner, a numeral, and an adjective, then the determiner can only occur in the initial position of the noun phrase. The only exceptions are the two examples displaying topicalization, i.e. signing the head noun in the sentence-initial position and then the determiner, and numeral or adjective. In general we can say that adjectives have the shortest distance from the head noun, and then come numerals, followed by determiners, which are in the most peripheral positions of the noun phrase. The overall pattern reveals that, in spite of some exceptions, the word orders within noun phrases in TSL do correspond to conceptual organization.

**4.5    Conclusion**

In this chapter, the word order within noun phrases in TSL was investigated. The data reveal that the adjectives are always adjacent to the head noun no matter how many constituents there are in the noun phrase. As long as they are adjacent to the head nouns, they are allowed in either the pre-nominal or post-nominal positions or both according to which element they co-occur with. The only exception is that when the head noun occurs in the phrase-initial position of a definite noun phrase, the adjective then will follow the post-nominal determiner. Numerals are observed in both the phrase-initial or phrase-final positions when the noun phrase contains a numeral and an adjective. Quantifiers are found in both the phrase-initial and phrase-final positions in most cases, except MOST, OTHER, and ANOTHER, which only appear in the pre-nominal position. It is also found that in a noun phrase which simply consists of a determiner, a numeral, and the head noun, the numeral must be adjacent to the head noun. In such cases, the determiners are also found in either the phrase-initial or phrase-final positions most of time. The only exception is topicalization where the head noun is placed in phrase-initial position and followed by the determiner and then the numeral. As for determiners, both the singular and the plural determiners are allowed in either pre-nominal or post-nominal positions. The distinction is that when the determiner follows the head noun, it implies not only that the referent is visible to both the signer and the addressee but also the specificity of the referent. In addition, when a noun phrase consists of a determiner, a numeral, and an adjective, the determiner can only occur in the phrase-initial position.

Based on our findings, despite flexible word order, (a) adjectives are closest to the head noun, (b) numerals and quantifiers are the second closest and tend to precede

or follow adjective-noun or noun-adjective phrases, and (c) determiners usually occupy the most peripheral positions in the noun phrases, except for the topicalization-like instances. In terms of the word order listed, word orders within TSL noun phrases conform to some of the predications made by Rijkhoff (2002) as follows:

(43) a. **dem num A N**

b. **dem A N num**

c. num A N dem

d. A N num dem

e. **dem num N A**

f. **dem N A num**

g.  num N A dem

h.  N A num dem

The distributions also conform to the cognitive explanation raised by Langacker (1991) and Taylor (2002). That is, specification, as the first step, narrows down the possible instances into a smaller set. This is realized by adjectives adjacent to the type, i.e., the head noun. In spite of the flexibility between pre-nominal or post-nominal position, adjectives are mostly found adjacent to head nouns within TSL. After specification, quantification, which is realized by quantifiers, takes place. Therefore, quantifiers tend to occur beside the adjectives in noun phrases and rarely intervene between adjectives and head nouns. In TSL, quantifiers (including numerals) are also found beside adjective-noun or noun-adjective phrases and never intervene between

the adjectives and head nouns. The last step, grounding, relies on the addition of determiners to the periphery of the noun phrase. Hence, determiners are usually observed in the most peripheral positions of noun phrases. Besides some cases of topicalization, the occurrences of determiners in TSL indeed conform to cognitive organization as well. Although TSL seems to display a non-rigid word order within noun phrases and there is no absolute correspondence between the inference and the orders of constituents within TSL noun phrases, the placements of adjectives, quantifiers, and determiners in TSL are similar in conceptual structure to English and other spoken languages.

# CHAPTER 5

# CONCLUSION

Nouns are regarded as one of the main grammatical categories of languages, it is the class of words that express the most time-stable concepts like rock, tree, water, mountain, etc. (Givon 1984). From the syntactic and semantic point of view, nouns also play the syntactic roles of subjects, objects, predicates, and complements in PP and PossP structures (Berk 1999; Huddleston 1988; Payne 1997; Quirk and Greenbaum 1973) and play the semantic roles of agents, patients, goals, etc. (Payne 1997; O'Grady 2001). Noun phrases, which have nouns as their central part, the head, by all means contain the characteristics of nouns and play an essential part in languages as well. This thesis investigates noun phrases in TSL and provides explanations to the constituency of noun phrases and generalizations to the ordering of constituents.

Chapter 2 introduced how TSL users express the concept of qualities within noun phrases. This included attributive and predicative uses of property-denoting words, namely, adjectives. Attributive adjectives may occur either before or after the head nouns while predicative adjectives can form a full predicate on their own in TSL. Furthermore, the categorization of adjectives and the ways of intension of the adjectives in TSL are also illustrated. Like English, TSL adjectives are able to be divided into more prototypical adjectives and less prototypical adjectives according to their semantics. As to the modification of adjectives, besides the lexical terms VERY and PRECISE, TSL users also convey degree by facial expressions or exaggerations of movements. Most important of all, this chapter also discusses the correlation between the adjective and the head noun in the noun phrase. The result shows that unlike English, adjectives are allowed in both the pre-nominal and the post-nominal

positions in noun phrases.

Chapter 3 proceeds to investigate numerals and quantifiers and their correlations with nouns in TSL. Quantifiers included EVERY, ANY, ALL, SOME, and so on. TSL numerals are found to resemble those in Chinese; however, they are also visually iconic since number can correspond to the number of fingers. Numerals, like adjectives, are allowed in either the pre-nominal or post-nominal positions. As for quantifiers, only SOME (B) and SOME (C) show the same distributional properties as numerals. Among the quantifiers, SOME (A), A LITTLE, MOST, ALL, ANY, and ONLY-NUMBER are always in the post-nominal positions while EVERY, OTHER, and ANOTHER are always in the pre-nominal positions. In addition, TSL also has adverbial quantifier like MUCH/ MANY, which always occur after predicates.

Finally, chapter 4 gives a full picture of the constituency and word orders within noun phrases in TSL. It is found that except for the topicalization, determiners occur in the most peripheral positions in the noun phrase—either phrase-initially or phrase-finally. Quantifiers are usually next to determiners while adjectives are always adjacent to the head noun. In sum, in spite of complex word orders, we can still find that the ordering of the constituents within noun phrases in TSL corresponds to the cognitive layered structure proposed by Langacker (1991) and Taylor (2002). The adjacency between nouns and adjectives proves that specification takes place first when processing a referent. The peripheral and phrase-initial positions for determiners also echo to the last step of processing, grounding. As a result, quantifiers are less restricted in their distributions since quantification is the step between specification and grounding. As long as the adjectives are adjacent to the head noun, they are allowed in either pre-nominal or post-nominal positions. The word orders within TSL noun phrases also meet the predictions made by the three principles raised by Rijkhoff (2002).

Although at first TSL appears to have non-rigid orders within noun phrases, the result of this thesis implies that it follows previously established principles of conceptual structure. Besides, it also provides some insights into the nature of languages and human cognition.

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