

國立交通大學

外國語文學系外國文學與語言學碩士班

碩士論文

不帶「比」字比較句

Comparatives without *Bi*

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中華民國一百年六月

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碩士論文

A Thesis

Submitted to Department of Foreign Languages and Literatures
Graduate Institute of Foreign Literatures and Linguistics
National Chiao Tung University
in partial Fulfillment of the Requirements
for the Degree of Master
in

Graduate Institute of Foreign Literatures and Linguistics

June 2011

Hsinchu, Taiwan, Republic of China

中華民國一百年六月

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摘 要

之前有許多關於形容詞當謂語的不帶「比」字比較句研究，然而，幾乎沒有研究探討動詞性的不帶「比」字比較句。此篇論文主要探討中文 X Duo V (Y) D 和台語 X Ke V/A (Y) D 這兩種不帶「比」字比較句的句法結構。這兩種比較句和中文形容詞當謂語的 X A (Y) D 比較句結構 (Liu, 2007) 有相似的特徵，例如，他們後面都帶有兩個名詞性補語：一個是當作比較項的指示名詞組，另一個是作為變量的度量詞組或名詞組。此外，比較項可省略，但變量卻必須存在。

儘管如此，過去的研究，包括 C.C. Chao (2005) 和 M. Xiang (2005)，並沒有解釋為何比較項可省略，而變量卻必須保留的原因。C. S. Liu (2007) 認為在 X A (Y) D 的比較句中，形容詞經過移位並和隱形的弱性比較詞素結合（也就是隱形的動詞性詞綴「過₂」）。因為「過₂」的語意內涵已被消除，這個隱形的比較詞素喪失核准形容詞間距論元的能力，所以必須藉由變量來限制形容詞的間距論元。

本文認為中文的「多」和台語的「ke」皆為動詞，「多」和「ke」出現會多帶個補語，也就是所謂的比較項，而且因為不同於動詞性詞綴「過₂」，「多」和「ke」是組成比較句的語意核心。所以，在「多」和「ke」後面出現的形容詞或動詞，在結構上沒有往上移位並與「多」和「ke」合併的動機。若「多」和「ke」移位，會造成詞序上和主語選擇上的問題。根據 Larson (1988) 的 VP 外殼 (VP-shell) 和 C. T. Huang (2006) 的 V-得結構 (V-*de* construction)，本文認為中文的「多」和台語的「ke」為主要動詞，表達「超越／超過」的語意；至於在「多」和「ke」後面的動詞或形容詞則是表達主要事件形成的方法。在「多」和「ke」後面的動詞或形容詞，會先在辭彙階段裡，與「多」和「ke」合併成一個詞，然後這個詞再移位到輕動詞 EXCEED 的位置檢核語意特徵，進而形成比較句。像非受格動詞「來」一樣，「多」和「ke」也可當非受格動詞，帶個可省略的方位詞和不可省略的度量詞當補語。所以，本文將比較項類比為方位詞，在句法上可省略；度量詞在非受格句中必須出現，所以在不帶「比」字比較句中擔任變量角色時，也必須保留。台語的「ke」也可以被刪略而形成 X A Y D 結構的比較句，並且比較項和變量都必須出現。本文根據 T. H. Lin (2001) 的輕動詞理論 (light verb theory)，把此結構視為古漢語的殘留，形容詞與輕動詞 EXCEED 在結構上合併成動詞。此外，有些比較句帶有蒙受語意，本文認為這些蒙受語意，來自於「多」和「ke」後面動詞本身的詞彙語意影響，與比較句結構本身無關。

關鍵詞：比較項；變量度；量詞；比較詞素

Comparatives without *Bi*

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ABSTRACT

The adjectival comparative without *bi* has been studied for several years. However, seldom papers discuss about the verbal comparative without *bi*. This thesis is about the syntactic structures of the X Duo V (Y) D comparative in Mandarin and the X Ke V/A (Y) D comparative in Taiwanese. These two types of comparatives without *bi* have similar properties with the X A (Y) D comparative in Mandarin (Liu, 2007). More specifically, there are two nominal complements contained in comparatives without *bi*: a referential NP functioning as the standard of comparison and a MP/DP functioning as the differential. Furthermore, the standard of comparison is optional, but the differential is obligatorily required.

However, previous studies, including C.C. Chao (2005) and M. Xiang (2005), don't explain why the standard is optional and the differential is obligatory. C. S. Liu (2007) claims that the adjective has been moved and incorporated into a covert weak comparative morpheme (i.e. the covert verbal suffix *-guo2*). Since the semantic content of *-guo2* is bleached, the covert comparative morpheme lost the ability to license the interval argument of the adjective. Thus, the differential is necessary to restrict the interval argument of the adjective.

In this thesis, I proposed that the morpheme *duo* "exceed" and *ke* "exceed" are verbs, unlike a verbal suffix like *guo2*, because they are the semantic nucleus to form the comparatives. Therefore, the verb or the adjective behind *duo/ke* has no motivation to raise and to merge with *duo/ke*. The movement may cause problems about word ordering and arguments selecting. Based on Larson's (1988) VP-shell and C. T. Huang's (2006) V-*de* construction, I consider the comparative morpheme *duo* "exceed" in Mandarin and *ke* "exceed" in Taiwanese to be the main verb expressing the surpassing meaning, and the verb/adjective behind *duo/ke* is a manner of the main event. The verb/adjective behind *duo/ke* merges with *duo/ke* in the lexicon to be a word first, and then they are moved to a light verb EXCEED for feature checking to form the comparative construction. Like the unaccusative verb *lai* "come", the verb *duo/ke* can take an optional location and an obligatory MP as its complements. Therefore, I argue that the standard of comparison is an extended location, so it is optional. The MP is obligatory in the unaccusative construction, and it is also necessary when functioning as the differential the comparative construction without *bi*. Moreover,

Taiwanese *ke* may be deleted to form an X A Y D comparative construction, and both of the standard and the differential is obligatory. Base on T. H. Lin's (2001) light verb theory, the structure may be a residue of different stratum of Archaic Chinese. The adjective is incorporated to a light verb EXCEED. Besides, the affective reading might be allowed in the verbal comparative is owing to the lexical meaning of the verb behind the comparative morpheme.

Key words: the standard of comparison, the differential, the measure phrase, the comparative morpheme



誌 謝

碩士三年的歲月，在這一刻，終於把論文完成了。回首過往，我心中有無盡的歡喜與感謝。首先，我要感謝我的指導老師劉辰生教授。劉老師教學上的認真態度大家有目共睹，有趣又豐富的上課內容，啟發我對句法學和比較句研究的興趣。與老師討論論文時，老師會讓我嘗試自己摸索，從旁細心引導、循循善誘，並耐心的解答我的疑惑，總是在我陷入瓶頸時，適時的拉我一把，使我的論文寫作過程中，雖然辛苦但也同時沉浸在作研究的樂趣中。此外，劉老師也相當關心學生的日常生活，常以自身的經驗鼓勵我們、開導我們，也時常替學生著想。在老師身上，學到的不只是對語言學研究的認真態度，還有教學的熱忱，能被這樣優秀又富有教學熱忱的老師教到，我真的覺得自己很幸運！謝謝老師，您辛苦了！

接著我要感謝我的論文口試老師林若望老師與魏廷冀老師，十分感謝兩位老師在百忙之中抽空參加我的口試。林老師是我碩士班的語意學老師，林老師總是用貼近學生生活的例子，清楚的講解複雜的語意概念，敏捷的思考、批判的能力，再再使我佩服。感謝林若望老師和魏廷冀老師在口試時提出許多寶貴意見，讓我了解論文的不足和需要改進的地方。

在此，我要感謝碩士班時期，與我一起努力、一起煩惱、一起歡笑的好夥伴。感謝賴郁雯老師，耐心的聽我們發牢騷，也常常幫我打氣，美味的食物、優質的電影，皮辦是幸福的天堂。感謝學姊佳霖、蔓婷和馨瑜，常在我手足無措時，給我鼓勵和建議，在論文地獄裡掙扎時，適時帶我出去透透氣，因為你們，我的碩士生活很充實愉快。也謝謝學長柏宏和奕勳，課業上常需要你們的幫忙，謝謝！感謝我一群可愛又有義氣的同學伊凡、郡儀、米琪、鈺楨、博任和皓志，多少的日子裡和大家一起努力、玩鬧，因為有你們，我的碩士班生活精彩無比，也因為彼此的討論和幫忙，讓我的研究更為精進，很榮幸與你們一起同窗三年，也很榮幸跟大家一起快樂畢業。尤其是伊凡和皓志，要不是有你們兩位在，我的碩士班生涯一定很艱辛、孤獨，感謝你們陪我熬夜、陪我努力、陪我玩樂，謝謝！接著，感謝學妹育瑩和詒月，熬夜的日子你們也義氣相挺，晚餐也因為有你們陪伴變得十分美味。

另外，我要感謝我的男友丞賢，感謝你十多年來的陪伴，你總是把我放在第一位，因為有你的包容、體諒與支持，我可以勇敢實踐理想。生命因你的存在而完整。

最後，請容我將這篇論文獻給我最敬愛的家人。感謝爸爸、媽媽的支持和無私的奉獻，讓我可以無後顧之憂的完成碩士班學業，遇到挫折時也因為有你們的鼓勵和教誨，我得以努力不懈，你們的愛成就了我的智慧與健全人格。也要感謝我的姊姊、姊夫和哥哥，感謝你們適時的關心和安慰，也感謝你們會以過來人經驗給我適當的建議，讓我有信心面對挑戰。我的家人是我強力的後盾，我要將這份喜悅與你們分享，我愛你們！

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There are many studies concentrating on the adjectival comparative constructions in Mandarin (cf. Y. R. Chao 1968, Y. C. Fu 1978, Li and Thompson 1981, F. F. Tsao 1989, W. M. Hong 1991, J. C. Hsing 2003, C. P. Chao 2005, C. S. Liu 2007, and many others). One of the adjectival comparatives without *bi* in Mandarin is the X A (Y) D comparative like (1).¹

(1) Zhangsan gao (Lisi) *(san gongfen)

Zhangsan tall Lisi three centimeter

‘Zhangsan is three centimeters taller (than Lisi).’

This type of comparative contains two post-predicative nominal expressions: One is a referential NP functioning as the standard of comparison while the other is a non-referential measure phrase denoting the differential. The standard of comparison is optional and the differential is obligatory (Liu, 2007).

However, there is another comparative without *bi*-phrase like (2a), henceforth the X Duo V (Y) D comparative, seldom studied by scholars.

(2) a. Zhangsan duo du (Lisi) *(liang ben shu)

Zhangsan much read Lisi two CL book

‘Zhangsan read two more books than Lisi did.’

¹ Abbreviations used in this paper include: A: adjectives, V: verbs, D: the differential pseudo-object, NP: noun phrase, MP: measure phrase, CL: classifier, ASP: aspect marker, SFP: sentence final particle. Romanization used in this paper: Hanyu Pinyin for Mandarin; TL (The Taiwanese Romanization) for Taiwanese, and the tone marker is omitted.

- b. *Zhangsan duo gao Lisi san gongfen
 Zhangsan much tall Lisi three centimeter

Similar to the X A (Y) D comparative, the X Duo V (Y) D comparative also takes two post-predicative arguments: a referential NP functioning as the standard of comparison, and the other is a measure phrase denoting the differential. The standard of comparison in the X Duo V (Y) M comparative is optional, and the differential is necessary. Nevertheless, contrary to the comparative construction like (1), the morpheme *duo* “much” cannot attach to an adjectival predicate, as (2b) shows.

Comparative constructions without *bi*, in fact, not only occur in Mandarin but also in Taiwanese. Similar to the morpheme *duo* “much” in Mandarin, the morpheme *ke* “much” in Taiwanese can be followed by a verb like the example in (3a) denotes. However, as (3b) shows, Taiwanese *ke* “much” is different from Mandarin *duo* “much” since *ke* “much” can have an adjective behind it.

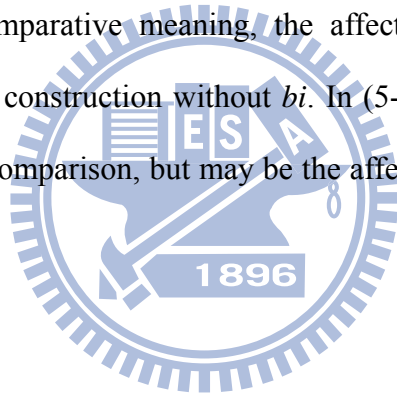
- (3) a. Ong-e ke thak (Li-e) *(sann pun tsheh)
 Ong-e much read Li-e three CL book
 ‘Ong-e read three more books than (Li-e).’
 b. Ong-e ke kuan (Li-e) *(sann tshun)
 Ong-e much tall Li-e one-third decimeter
 ‘Ong-e is one-third decimeter taller than Li-e.’

This type of comparative, called the X Ke V/A (Y) D comparative in this paper, also contains two post-predicative nominal expressions: a referential NP functioning as the standard of comparison and a measure phrase functioning as the differential. The standard of comparison is optional and the differential is obligatory.

Furthermore, the morpheme *ke* “much” may be deleted, and the adjective behind *ke* “much” is the main predicate, like the example in (4) shows. When an adjective functions as the predicate in the comparatives without *bi*, two post-predicative nominal expressions is obligatory. Thus, the standard of comparison *Li-e* and the differential *sann tshun* “one decimeter” are optional in (3b), but both of them are obligatory in (4).

- (4) Ong-e kuan *(Li-e) *(sann tshhun)
 Ong-e tall Li-e three one-third decimeter
 ‘Ong-e is one decimeter taller than Li-e.’

In addition to the comparative meaning, the affective reading sometimes might be allowed in the comparative construction without *bi*. In (5-6), the referential NP complement not only is the standard of comparison, but may be the affectee in the event “Zhangsan/Ong-e drank two bottles of wine”.



(5) Mandarin:

- Zhangsan duo he-le Lisi liang ping jiu
 Zhangsan much drink-ASP Lisi two bottle wine

Two readings: a. ‘Zhangsan drank two more bottles of wine than Lisi did.’

- b. ‘Lisi’s wine which Zhangsan drank exceeds the wine which Lisi presupposed that Zhangsan would drink in two bottles.’

(6) Taiwanese:

- Ong-e ke lim Li-e nng kuan tsiu
 Ong-e much drink Li-e two CL wine

Two readings: a. ‘Ong-e drank two more bottles of wine than Li-e.’

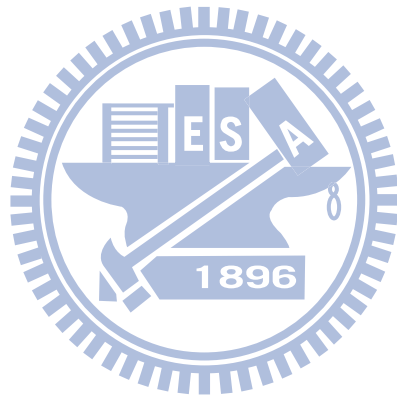
b. 'Li-e's wine was drunk by Li-e for the quantity of two more bottles that Li-e presupposed.'

So far, we have mentioned about three types of comparative constructions without *bi* in Chinese: the X A (Y) D comparative and the X Duo V (Y) D comparative in Mandarin, and the X Ke V/A (Y) D comparative in Taiwanese. Those three types all contain two complements: a standard of comparison and a differential. Nevertheless, some comparative types can have a morpheme (e.g., *duo* "much") located before the verb/adjective, but some can not. Finally, the affective reading might be allowed in those comparative constructions without *bi*.

Liu (2007) has provided us clear analyses for the X A (Y) D comparative in Mandarin. The purpose of this thesis is to study the syntax of the X Duo V (Y) D comparative in Mandarin and the X Ke V/A (Y) D comparative in Taiwanese. It will be shown that Liu's analysis of the comparative morpheme *guo* "surpassing" cannot be analogized to those two comparatives. Base on Larson's (1988) VP-shell and C. T. Huang's (2006) V-*de* resultative phrase construction, I provide a unified analysis for the comparative construction containing the morpheme *duo* "much" or *ke* "much". Following T. H. Lin's (2001) light verb syntax, the adjectival comparative construction in Taiwanese without the morpheme *ke* "much" is considered as the residue of Archaic Chinese. Finally, the affective reading comes from the lexical meaning of the verb following the morpheme *duo* "much" or *ke* "much".

The organization of this paper is as follows. I shall start chapter 2 by reviewing the current studies on the adjectival comparative without *bi* in Mandarin. Following Huang's (2006) V-*de* phrasal structure, I propose a syntactic structure for the X Duo V (Y) D comparative in Mandarin in chapter 3. Following Larson (1988) and Huang (2006), the structure of the X Ke V/A (Y) D comparative will be analyzed in chapter 4. Moreover, the adjectival comparative construction without the morpheme *ke* "much" in Taiwanese is based

on Lin's (2001) theory of light verb syntax. Finally, chapter 5 concludes.



Chapter 2

The X A (Y) D COMPARATIVE IN MANDARIN

In this chapter, we will review the adjectival comparative construction without *bi*, henceforth the X A (Y) D comparative, including those proposed by Chao (2005), M. Xiang (2005), and Liu (2007).

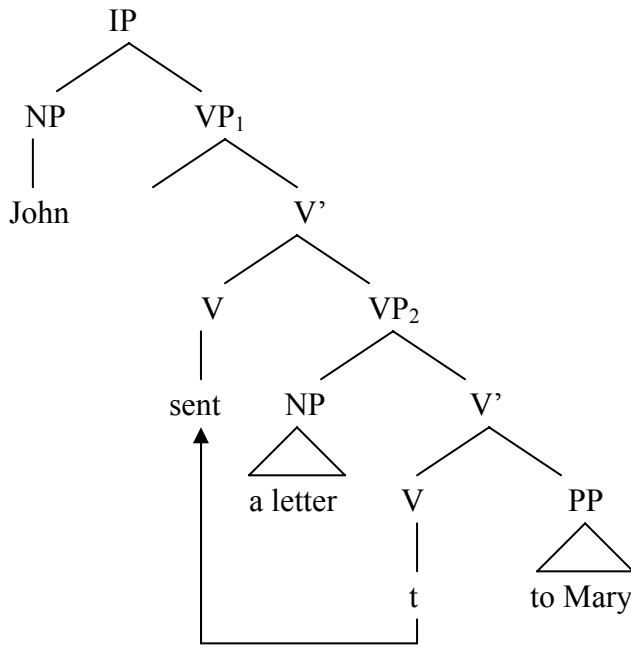
2.1 C. C. Chao (2005)

Based on Larson's (1988) double object constructions, Chao (2005) terms the X A (Y) D comparatives as double-object-like constructions. Larson (1988) proposes the VP-shell analysis for the structure of a double object construction like (7b). As for corresponding double object constructions, he argues that dative constructions must undergo a process similar to passivization, only which they occur in the domain of VP instead of IP as in (8b). In other words, the example in (7b) is derived from the dative construction (7a).

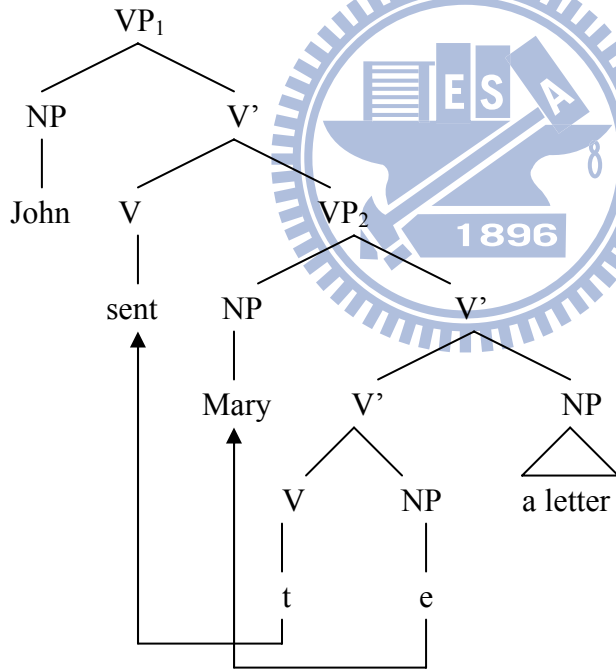
(7) a. John sent a letter to Mary.

b. John sent Mary a letter.

(8) a.



b.



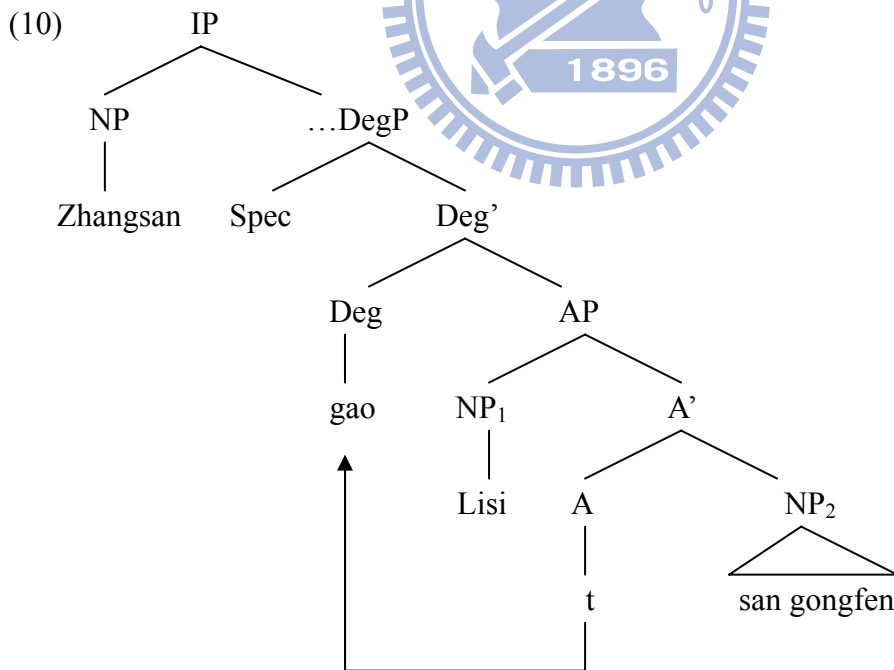
As the indirect object *Mary* is moved forwardly, the verb *sent* loses its ability to assign an inherent case to the direct object *Mary*, so the preposition *to* is deleted. The direct object *a letter* is de-thermatized as an adjunct and adjoined to the V' in VP₂. The verb *sent* is moved to the head of VP₁, and then *Mary* gets a case, as (8b) denotes.

As the X A (Y) D comparative construction in (9) shows, the gradable adjectival

predicate, similar to the verb in Larson’s analysis of double object construction, takes two NP complements. The first NP functions as a standard of comparison, and the second one functions as a differential between the two compared degree values. Chao (2005) proposed that the adjectival predicate in (9a) raises to a degree head which projects a functional DegP for some kind of feature checking, as (10) shows (cf. Abney 1987).

(9) a. Zhangsan gao Lisi san gongfen
 Zhangsan tall Lisi three centimeter
 ‘Zhangsan is three centimeters taller than Lisi.’

b. Zhangsan da Lisi san sui
 Zhangsan old Lisi three year
 ‘Zhangsan is three years older than Lisi.’



There exist some distinctions between the double-object-like constructions proposed by Chao (2005) and Larson’s (1988) double object constructions even though they have similar

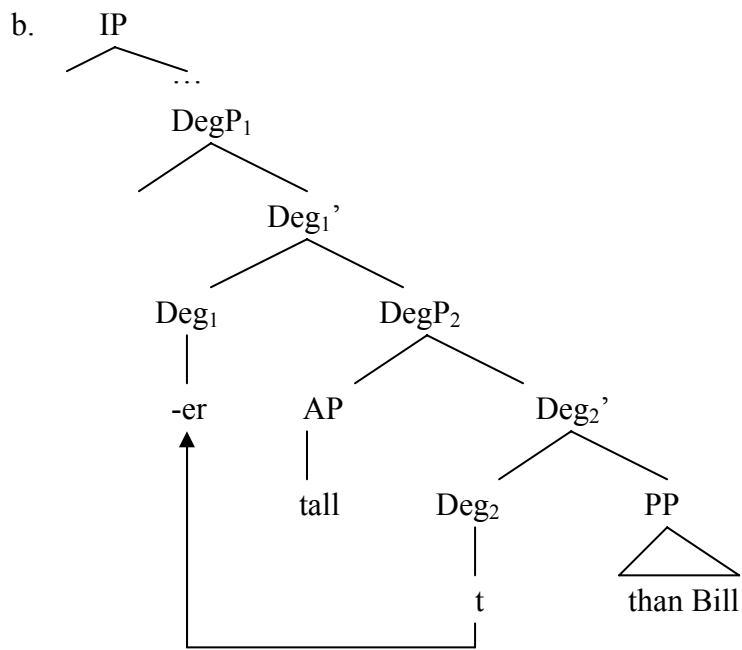
syntactic structures. The complements of English double-object constructions are NP and PP respectively while those of comparatives with a double-object-like construction are both NPs. Furthermore, both internal arguments of English double-object constructions cannot be omitted; however, in a double-object-like comparative construction, the first internal NP functioning as a standard of comparison is optionally required, and the non-referential one functioning as a differential is obligatory.

In the comparative with a double-object-like construction, there remains a problem that Chao (2005) fails to account for. She does not explain why the internal referential NP is optional while the internal non-referential NP is necessary.

2.2 M. Xiang (2005)

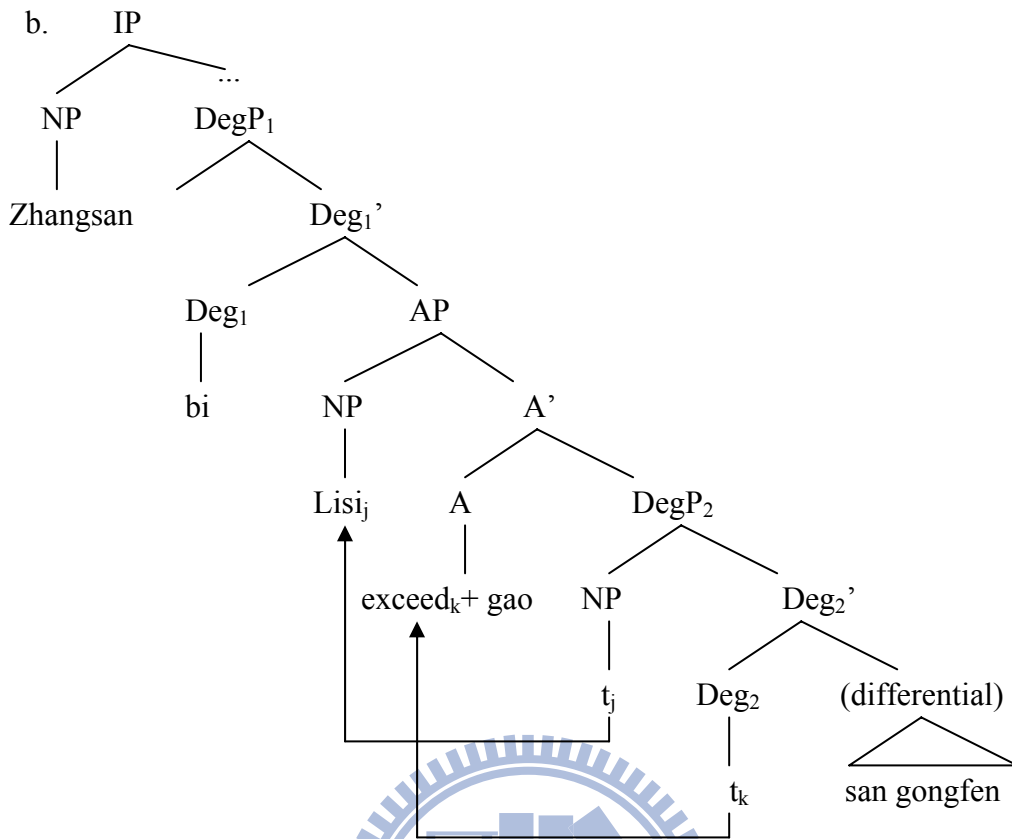
Ming Xiang calls this type of adjectival comparative without *bi*: bare comparative. Xiang builds her syntax for comparative constructions on Larson's (1991) DegP-shell structure like (11), which looks like the VP-shell structure for the double object construction. She observes that the standard must asymmetrically c-command the predicate of comparison and its differential degree argument.

(11) a. John is taller than Bill.



Xiang (2005) make some adjustment of the DegP-shell for the correct word order in Mandarin comparatives, as (12) shows.

- (12) a. Zhangsan bi Lisi gao (san gongfen)
 Zhangsan bi Lisi tall three centimeter
 ‘Zhangsan is (three centimeters) taller than Lisi.’

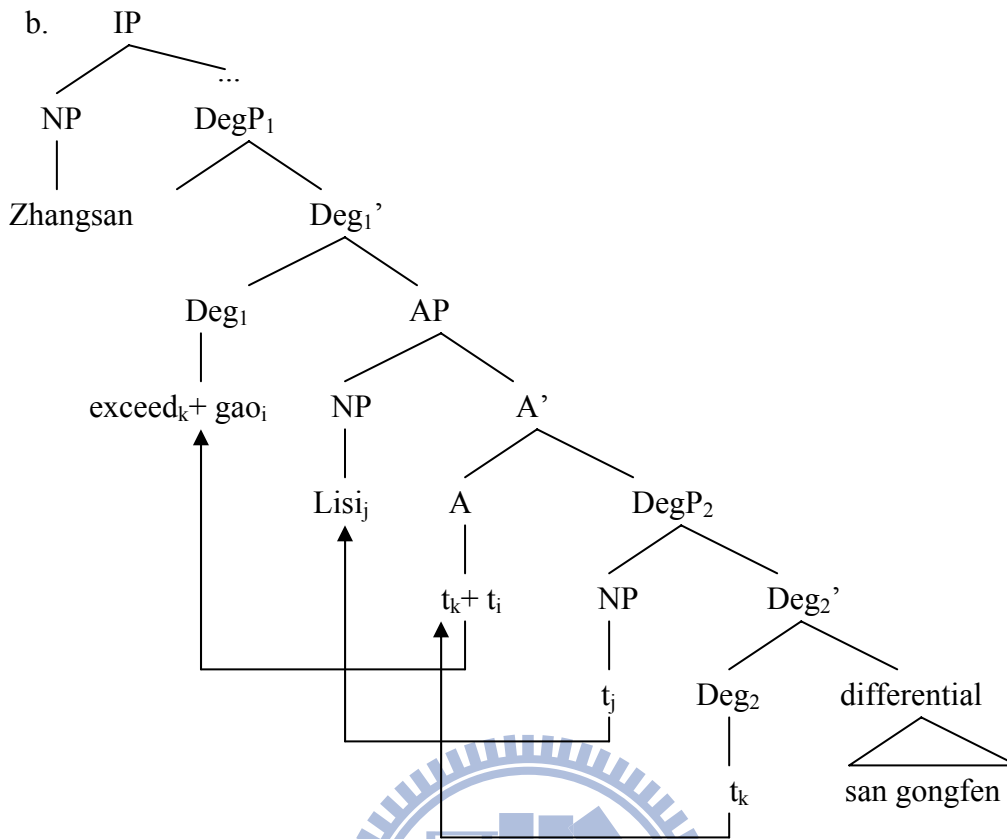


Xiang claims that her structure can also generate the bare comparative structure by head-movement of the exceed+gao from A to Deg₁ position, like (13) denotes.

(13) a. Zhangsan gao Lisi san gongfen

Zhangsan tall Lisi three centimeter

‘Zhangsan is three centimeters taller than Lisi.’



Xiang assumes that the phonetically null morpheme *exceed* merges with the differential and the standard of comparison to be DegP₂ first. The null morpheme *exceed* is then moved and combine with the adjective *gao* “tall” in the A head. Finally, the combination of *exceed+gao* is moved to the Deg₁ for the correct order of Mandarin bare comparative.

No matter how insightful that Xiang’s (2005) revises Larsonian (1991) style DegP-shell analysis of bare comparatives is, there are still some problems in her approach. Although Xiang points out that the differential is obligatory in the bare comparatives, she doesn’t explain why it is necessary. As pointed out by Erlewine (2007), the bare comparative always require the differential; nevertheless, the comparative with *bi* may not have such requirement. This shows that the structure of the bare comparative may be different from one of the comparative with *bi*.

Moreover, according to Lin (2009), the structure might raise a problem if we add an

adverb *hai* “still” before the adjective, like the examples in (14).²

- (14) a. Zhangsan bi Lisi hai gao san gongfen
Zhangsan bi Lisi still tall three centimeter
'Zhangsan is three centimeters taller than Lisi is.'
- b. *Zhangsan gao Lisi hai san gongfen
Zhangsan tall Lisi still three centimeter
- c. Zhangsan hai gao Lisi san gongfen
Zhangsan still tall Lisi three centimeter

If we just move *exceed+ gao* to the Deg_i head originally occupied by *bi*, the adverb *hai* “still” is wrongly left in situ, as (14b) shows. As (35c) shows, the adverb *hai* “still” must precede the adjective, and it is impossible for the raising analysis of the adjective. Therefore, we can assume again that the structure of the bare comparative is not identical with one of the comparative with *bi*.

2.3 C. S. Liu (2007)

According to Liu (2007), the X A (Y) D comparative, like (15a), contains a covert comparative suffix *-guo2* behind the adjectival predicate, and the covert weak comparative morpheme is derived from the verbal suffix *guo1* “exceed/surpass” in the comparative construction of X A-*guo1* Y (D) like (15b).

- (15) a. Zhangsan gao-guo2 (Lisi) san gongfen

² Unlike Lin (2009), I don't think the sentence in (14c) is grammatical. According Liu (2007), the adjective moved becomes a dynamic verb, so it can take complements. A degree adverb doesn't modify a dynamic verb. Even though the adverb *hai* is moved with the adjective together, *hai+gao* is still an adjective which cannot take complements. Hence, I don't think (14c) is a grammatical sentence.

Zhangsan tall-guo2 Lisi three centimeter

‘Zhangsan’s height exceeds Lisi’s by three centimeters.’

b. Zhangsan gao-guo1 Lisi (san gongfen)

Zhangsan tall-guo1 Lisi three centimeter

‘Zhangsan’s height exceeds Lisi’s by three centimeters.’

First of all, in the X A-*guo1* Y (D) comparative, the verbal suffix *-guo1* ‘exceed’, being a three-place predicate syntactically, denotes a four-place relation semantically: A relation between two comparative individuals (i.e. X and Y), a dimension and a measure phrase; therefore, the two individuals and the measure phrase can be considered the arguments of *-guo1* ‘exceed’. Although the verbal suffix *-guo1* ‘exceed’ is not found in the X A (Y) D comparative, this type of comparative also have the meaning which X exceeds/surpasses Y by D in the dimension denoted by A.

Second, Liu (2007) observes that the adjective in the X A-*guo1* Y (D) comparative must be a [+pole] dimensional adjective since the *exceeding* or *surpassing* meaning of *-guo1* ‘exceed’ as the contrast below illustrates (cf. Bierwisch 1989).

(16) a. Zhe-tiao shengzi chang-guo1 na-tiao liang yingchi

this-CL rope long-guo1 that-CL two inch

‘The length of this rope exceeds that of that rope by two inches.’

b. *Zhe-tiao shengzi duan-guo1 na-tiao liang yingchi

this-CL rope short-guo1 that-CL two inch

Nevertheless, the adjective in the X A (Y) D comparative must be a dimensional adjective, either [+pole] or [-pole], which can be measured by a standardized measure unit for measuring the scale, as examples in (17) illustrate

(cf. Bierwisch 1989).

(17) a. Zhe-ben shu gui/pianyi na-ben yi-bai-kui qian
this-CL book expensive/cheap that-CL one-hundred-CL dollar
'This book is one hundred dollars more expensive/cheaper than that one.'

b. *Zhe-ge nuhai piaoliang na-ge nuhai san du
this-CL girl beautiful that-CL girl three degree
'This girl is three more degrees beautiful than that one.'

Third, in the X *A-guo1* Y (D) comparative, the internal comparison item must be a definite/specific (or referential) noun phrase whereas the measure phrase must be non-referential, as the contrast in (18) illustrates. Furthermore, the referential noun phrase must precede the non-referential measure phrase.

(18) a. Zhangsan gao-guo1 Lisi shi gongfen
Zhangsan tall-guo1 Lisi ten centimeter
'Zhangsan is ten centimeters taller than Lisi.'

b. *Zhangsan gao-guo1 liang ren shi gongfen
Zhangsan tall-guo1 two people ten centimeter

c. *Zhangsan gao-guo1 shi gongfen Lisi
Zhangsan tall-guo1 ten centimeter Lisi

Fourth, in the X *A-guo1* Y (D) comparative, the internal referential noun phrase is obligatory, and the measure phrase is optional; however, in the X A (Y) D comparative, the occurrence of the internal referential noun phrase is optional while the occurrence of the measure phrase is necessary, as shown by the contrast below.

- (19) a. Zhangsan gao-guo1 Lisi (shi gongfen)
 Zhangsan tall-guo1 Lisi ten centimeter
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’
- b. Zhangsan gao-guo1 *(Lisi) shi gongfen
 Zhangsan tall-guo1 Lisi ten centimeter
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’

- (20) a. Zhangsan gao (Lisi) shi gongfen
 Zhangsan tall Lisi ten centimeter
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’
- b. Zhangsan gao Lisi *(shi gongfen)
 Zhangsan tall Lisi ten centimeter
 ‘Zhangsan’s height exceeds Lisi’s by ten centimeters.’

Fifth, in the X A-*guo1* Y (D) comparative, the adjective cannot be modified by a degree adverb, and the same obtains in the X A (Y) D comparative.

- (21) a. *Zhangsan hen/geng gao-guo1 Lisi san gongfen
 Zhangsan very/even more tall-guo1 Lisi three centimeter
- b. *Zhangsan hen/geng gao Lisi san gongfen
 Zhangsan very/even more tall Lisi three centimeter

Sixth, quantifiers (or plural NPs) are not allowed to serve as internal comparison items in the X A-*guo1* Y (D) comparative and the X A (Y) D comparative, unless in some specific context where all elements denoted by the quantifier (or the plural NP) share the same degree

value, as (22) illustrates.

- (22) a. *Zhangsan gao-guo1 qita/zhexie ren san gongfen
Zhangsan tall-guo1 other/these person three centimeter
'??Zhangsan is three centimeters taller than everyone else/these persons.'
- b. *Zhangsan gao qita/zhexie ren san gongfen
Zhangsan tall other/these person three centimeter
'??Zhangsan is three centimeters taller than everyone else/these persons.'

Liu (2007) suggests that *-guo1* 'exceed' projects as *Guo1P*, and the adjective overtly moves to the *guo* head (i.e. *-guo1*) position, as (23) shows. With a full-fledged lexical meaning, *-guo1* 'exceed' requires that the referential NP serving as the standard of comparison should be present. Besides, since *-guo1* 'exceed' functions as a predicate "strong" enough to restrict the interval argument of the adjective (cf. Schwarzchild and Wilkinson 2002), the measure phrase, which indirectly restricts the interval argument of the adjective, is optionally required.

- (23) Zhangsan [_{Guo1P} [_{Guo1} [_{Guo1} gaO_i-guo1] [_{AP} Lisi [_A [_A ti] [_{san} gongfen]]]]]
Zhangsan tall-guo1 Lisi three centimeter
'Zhangsan is three centimeters taller than Lisi.'

Based on the syntactic and semantic affinity between the X A-*guo1* Y (D) comparative and the X A (Y) D comparative, Liu (2007) suggests that the X A (Y) D comparative such as (24) has a syntactic structure like (25). The covert verbal suffix *-guo2* is derived from *-guo1* 'exceed' through grammaticalization. As (25) shows, the covert verbal suffix *-guo2* projects as *GuoP2*, and then *gao* 'tall' overtly moves to *-guo2*.

(24) Zhangsan gao Lisi san gongfen
 Zhangsan tall Lisi three centimeter
 ‘Zhangsan’s height exceeds Lisi’s by three centimeters.’

(25) Zhangsan [_{Guo2P} [_{Guo2} [_{Guo2} gaOi-guo2] [_{AP} Lisi [_A [_A ti] [san gongfen]]]]]
 Zhangsan tall-guo2 Lisi three centimeter
 ‘Zhangsan is three centimeters taller than Lisi.’

Grammaticalization bleaches the “semantic content” of *-guo2* (i.e. the *exceeding* meaning) so as to place a less strict restriction on the selection of the adjective than *-guo1* ‘exceed’ does, and *guo2* cannot function as a predicate strong enough to restrict the interval argument of the adjective. For the measure phrase is the only possible candidate to restrict the interval argument of the adjective, it is obligatorily required in the X A (Y) D comparative. Moreover, the “semantic content” of *-guo2* is bleached, and this makes the “transitivity” force of *-guo2* become weaker than that of *-guo1*. Thus, the referential NP functioning as the standard of comparison seems not necessarily realized in the X A (Y) D comparative.

Liu’s (2007) analysis of the X A (Y) D comparative not only explain the relative order between the internal referential noun phrase and the measure phrase, but also tell us why the measure phrase functioning as a differential is obligatory in the X A (Y) D comparative. Furthermore, the agglutinated form deriving from the overt movement of the adjective to *-guo1* or *-guo2* is a variant form of the dynamic verb *exceed*. A degree adverb like *hen* ‘very’ or *geng* ‘even more’ cannot modify a dynamic verb; therefore, (26a-b) are ungrammatical.

(26) a. *Zhangsan hen/geng gao-guo1 Lisi san gongfen

Zhangsan very/even more tall- guo1 Lisi three centimeter
b. *Zhangsan hen/geng gao-guo2 Lisi san gongfen
Zhangsan very/even more tall-guo2 Lisi three centimeter



Chapter 3

THE X DUO V (Y) M COMPARATIVE IN MANDARIN

Except for the X A (Y) D comparative, we have another comparative without *bi* in Mandarin, henceforth the X Duo V (Y) D comparative, as shown in (27).

- (27) Zhangsan duo du (Lisi) *(liang ben shu)
Zhangsan much read Lisi two CL book
'Zhangsan read two more books than Lisi did.'

In this chapter, we will explore the properties of the X Duo V (Y) D comparative. A unifying analysis is proposed for the X Duo V (Y) M comparative construction based on Larson's (1988) VP-shell and Huang's (2006) V-de resultative phrase in Mandarin, and we prove that *duo* "much" is a verb which selects the differential to be obligatory.

3.1 Properties

Before we see the structure of the X Duo V (Y) D comparative, we have to find out the properties of this comparative type first. Here, we divide the properties into two parts: syntactic and semantic properties.

3.1.1 The Syntactic Properties of the Duo V (Y) D Comparative

The X Duo V (Y) D comparative has the following syntactic properties. First, the predicate behind *duo* "much" must be a verb rather than an adjective.

- (28) a. *Zhangsan duo gao Lisi san gongfen

- Zhangsan much tall Lisi three centimeter
- b. Zhangsan duo kan Lisi liang bu dianying
- Zhangsan much see Lisi two CL movie
- ‘Zhangsan saw two more movies than Lisi.’

Second, the word *duo* “much” must precede the verb, and there are not other words separating the comparative morpheme *duo* “much” and the following verb.

- (29) a. Zhangsan duo chi Lisi liang wan fan
- Zhangsan much eat Lisi two CL rice
- ‘Zhangsan ate two more bowls of rice than Lisi did.’
- b. *Zhangsan chi duo Lisi liang wan fan
- Zhangsan eat much Lisi two CL rice
- c. *Zhangsan duo Lisi chi liang wan fan
- Zhangsan much Lisi eat two CL rice
- d. *Zhangsan chi Lisi duo liang wan fan
- Zhangsan eat Lisi much two CL rice

The verb following *duo* “much” in this comparative can be mono-/di-disyllabic as examples in (30) show.

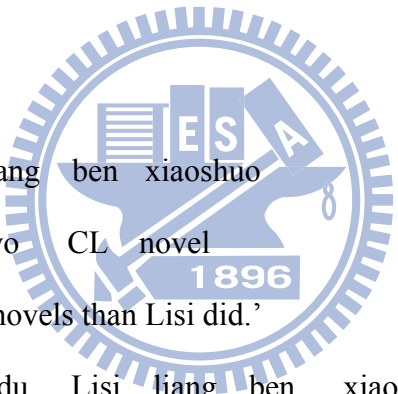
- (30) a. Zhangsan duo maidiao Lisi san liang che
- Zhangsan much sell Lisi three CL car
- ‘Zhangsan sold three more cars than Lisi did.’
- b. Zhangsan duo xiaohao Lisi san gongsheng qiyou
- Zhangsan much consume Lisi three liter gasoline

‘Zhangsan consumed three more liters of gas than Lisi did.’

Third, the verb following the morpheme *duo* “much” can be a transitive or an intransitive verb (X. Li 2009).

Duo + a transitive verb

In (31a), the verb *du* “read”, originally, only takes an argument, the direct object *liang ben shu* “two books”. As it is a comparative sentence like (31b), the additional argument *Lisi* occurs behind *du* “read”. (31b) becomes a construction contains double objects. The word *Lisi* is the indirect-object-like NP, and *liang ben xiaoshuo* “two novels” turns to be a direct object MP.³

- 
- (31) a. Zhangsan du liang ben xiaoshuo
Zhangsan read two CL novel
‘Zhangsan read two novels than Lisi did.’
- b. Zhangsan duo du Lisi liang ben xiaoshuo
Zhangsan much read Lisi two CL novel
‘Zhangsan read two more novels than Lisi did.’

Moreover, when there are two VPs occur in this comparative construction, *duo* “much” and the MP must be located in the same VP.

³ A bare NP *xiaoshuo* “novel” cannot serve as a differential unless it is a subset. For instance, there is a situation that Jack read {novels, periodicals, essays}, and Jill read {periodicals, essays}.

Then, the example in (i) might be acceptable.

- (i) ?Zhangsan duo du Lisi xiaoshuo

Zhangsan much read Lisi novel

‘Zhangsan reading kinds exceeds Lisi’s in “novel” this kind.’

(32) a. Zhangsan [qu liang jia chaoshang]_{VP1} [mai mijiu]_{VP2}

Zhangsan go two CL supermarket buy rice wine

‘Zhangsan went to two supermarkets to buy rice wine.’

b. Zhangsan [duo qu liang jia chaoshang]_{VP1} [mai mijiu]_{VP2}

Zhangsan much go two CL supermarket buy rice wine

‘Zhangsan went to two more supermarkets to buy rice wine.’

(It is true in the situation where Zhangsan was planning to go to three supermarkets to buy rice wine, but he went to five supermarkets.)

c. *Zhangsan [qu liang jia chaoshang]_{VP1} [duo mai mijiu]_{VP2}²

Zhangsan go two CL supermarket much buy rice wine

(33) a. Zhangsan [qu chaoshang]_{VP1} [mai liang ping mijiu]_{VP2}

Zhangsan go supermarket buy two bottle rice wine

‘Zhangsan went to a supermarket and bought two bottles of rice wine’

b. Zhangsan [qu chaoshang]_{VP1} [duo mai liang ping mijiu]_{VP2}

Zhangsan go supermarket much buy two bottle rice wine

‘Zhangsan went to a supermarket and bought two more bottles of rice wine’

(It is true in the situation where Zhangsan was planning to buy three bottles of rice wine, but he bought five bottles.)

c. *Zhangsan [duo qu chaoshang]_{VP1} [mai liang ping mijiu]_{VP2}

Zhangsan much go supermarket buy two bottle rice wine

In (32a) the MP *liang jia chaoshang* “two supermarkets” is the object of the verb *qu* “go” in VP₁. As *duo* “much” occurs and forms the X Duo V (Y) D comparative, we find that *duo* “much” locates in VP₁ in (32b). When the MP turns to be *liang ping mijiu* “two bottles of

rice wine” in VP₂ like (33), *duo* then occurs in VP₂ to form this comparative. It is grammatical if *duo* and the MP are not in the same VP like (32c) and (33c).

Duo + an intransitive verb

The verb behind *duo* in the X Duo V (Y) D comparative can be a transitive verb. The verb in (34a), syntactically, only takes one argument, the subject *Zhangsan*. In fact, the verb can take an additional pseudo-object *liang gongli* “two kilometers” in (34b). However, as it becomes this comparative type like (34c), there are two arguments behind the verb.

(34) a. Zhangsan manmande zou

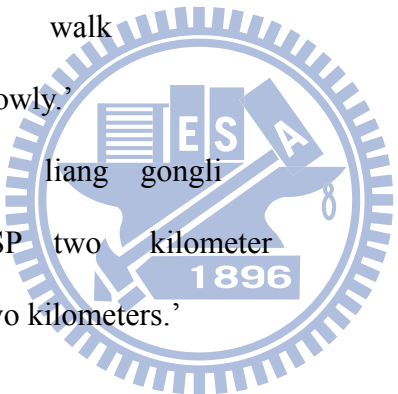
Zhangsan slowly walk

‘Zhangsan walked slowly.’

b. Zhangsan zou-le liang gongli

Zhangsan walk-ASP two kilometer

‘Zhangsan walked two kilometers.’



When *duo* “much” combines with the intransitive verb *zou* “walk”, *liang gongli* “two kilometers” in (34b) becomes the MP, like a direct object, in (34c), and the referential NP *Lisi* is like an indirect object. The sentence becomes a double-object like construction.

Fourth, similar to the predicative adjective (or stative quality verb) of the X A (Y) D comparative (Y. R. Chao 1968, C. P. Chao 2005, Liu 2007), the verb behind *duo* “much” in the X Duo V (Y) D comparative, no matter a transitive or an intransitive verb, has two complements: an indirect-object-like referential NP (e.g. *Lisi* in (35)) and a measure phrase (e.g. *liang ben shu* “two books” in (35)).

(35) a. Zhangsan duo du Lisi liang ben shu
 Zhangsan much read Lisi two CL book
 ‘Zhangsan read two more books than Lisi did.’

b. Zhangsan duo mai Lisi liang ben shu
 Zhangsan much buy Lisi two CL book
 ‘Zhangsan bought two more books than Lisi did.’

Fifth, according to the X A (Y) D comparative of Liu (2007), the referential NP complement following the predicative adjective must precede the non-referential measure phrase, otherwise the sentence is ungrammatical, as the contrast in (36). In the X Duo V (Y) D comparative, the referential complement is also found to precede the non-referential measure phrase in most cases, as examples in (36) indicate. Instances in (36) shows that the measure phrases in most cases are the numeral-measure-unit or numeral-classifier patterns.

(36) a. Zhangsan gao Lisi san gongfen.
 Zhangsan tall Lisi three centimeter
 ‘Zhangsan is three centimeters taller than Lisi.’

b. *Zhangsan gao san gongfen Lisi.
 Zhangsan tall three centimeter Lisi

(37) a. Zhangsan duo chi Lisi liang ke pingguo
 Zhangsan much eat Lisi two CL apple
 ‘Zhangsan ate two more apples than Lisi did.’

b. Zhangsan duo zou Lisi liang gongli
 Zhangsan much walk Lisi two kilometer
 ‘Zhangsan walked two more kilometers than Lisi did.’

c. Zhangsan duo du Lisi liang ben shu
 Zhangsan much read Lisi two CL book
 ‘Zhangsan read two more books than Lisi did.’

Nevertheless, there are some examples showing that a referential DP can occur in the position of the measure phrase. For instance, it is acceptable for the referential DP *zhe liang ben shu* “these two books” in (38).

(38) a. Zhangsan duo du-le Lisi zhe liang ben shu
 Zhangsan much read-ASP Lisi these two CL book
 ‘Zhangsan’s reading quantity exceeds Lisi’s reading quantity by these two books.’

No matter the non-referential numeral-measure unit or the referential DP, both of them function as the differential which means the quantitative difference between two comparative items.

Sixth, the indirect-object-like referential NP in this comparative is optional, as examples in (39) illustrate.

(39) a. Zhangsan duo du Lisi liang ben shu
 Zhangsan much read Lisi two CL book
 ‘Zhangsan read two more books than Lisi did.’
 b. Zhangsan duo du liang ben shu
 Zhangsan much read two CL book
 ‘Zhangsan read two more books (than someone did).’

In (39a), the referential NP *Lisi* clearly tells us the person who involves in the comparison

with Zhangsan, but the deletion of the referential NP in (39b) doesn't.

Nevertheless, the measure phrase MP is obligatory in the X Duo V (Y) D comparative, as the sentence in (40) shows.

- (40) a. Zhangsan duo du Lisi *(liang ben shu)
Zhangsan much read Lisi two CL book
'Zhangsan read two more books than Lisi did.'

3.1.2 The Semantic Properties of the X Duo V (Y) D Comparative

Different from the bare adjective in the X A (Y) D comparative, the verbal predicate needs the morpheme *duo* "much" to form the comparative construction.

- (41) a. Zhangsan du liang ben shu
Zhangsan read two CL book
'Zhangsan read two books.'
- b. Zhangsan duo du liang ben shu
Zhangsan much read two CL book
'Zhangsan read two more books (than someone).'

The sentence in (41a) is a statement. When the morpheme *duo* "much" is inserted into (41a), it turns to be a comparative construction like (41b). Therefore, the morpheme *duo* "much" can be interpreted as a comparative morpheme which helps (41a) to be a comparative construction.

In section 3.1.1, we have discussed the syntactic characteristics of the X Duo V (Y) D comparative. One of the syntactic property concerns with different types of verbs behind *duo* "much". Semantically, there are two types of verbs: one is gradable, and the other is

non-gradable. A distinction between gradable and non-gradable verbs is from the distribution of degree modifiers (e.g. *hen* “very”) in Chinese. *Hen* “very” directly modifies gradable verbs (e.g. *xihuan* “like” in (42a)), but it cannot modify non-gradable predicates (e.g. *du* “read” in (42b)).

(42) a. Zhangsan *hen* *xihuan* *chi* *miantiao* ***Gradable verb***

Zhangsan very like eat noodle

‘Zhangsan likes eating noodles a lot.’

b. *Zhangsan *hen* *du* *xiaoshuo* ***Non-gradable verb***

Zhangsan very read novels

From the contrast of examples in (43), the type of the verb in this comparative can be either a non-gradable or gradable verb.

(43) a. Zhangsan *duo* *zou* (Lisi) *liang* *gongli*
 Zhangsan much walk Lisi two kilometer

‘Zhangsan walked two more kilometers than Lisi did.’

b. Zhangsan *duo* *dong* (Lisi) *liang* *zhong* *yuyan*

Zhangsan much understand Lisi two CL language

‘Zhangsan understands two more languages than Lisi does.’

Moreover, we have mentioned that the predicate of X Duo V (Y) D comparative has two complements: an indirect-object-like referential NP. The indirect-object-like referential NP, semantically, functions as the comparative standard, and the direct object MP/DP shows the differential between two compared quantitative relation denoted by the verb behind *duo* “much”. In section 3.1.1, examples in (39) told us that the indirect-object-like referential NP, functioning as the comparative standard, is optional; however, in (40), the measure phrase (or

DP) which functions as the differential is obligatory in this comparative. Here, (39b) is reformed to be (44a), and (40) is repeated as (44b).

- (44) a. Zhangsan duo du (Lisi) liang ben shu
Zhangsan much read (Lisi) two CL book
'Zhangsan read two more books than Lisi did.'
- b. Zhangsan duo du Lisi *(liang ben shu)
Zhangsan much read Lisi two CL book
'Zhangsan read two more books than Lisi did.'

The affective reading might be allowed in the X Duo V (Y) D comparative construction. For instance, the comparative standard doesn't show in (45a), and it only has the comparative meaning that Zhangsan spent two more hundred dollars than a standard in the context. When the standard of comparison appears in the sentence like (45b), there are two readings: the comparative and the affective readings. *Lisi* may be the affectee because the money Zhangsan spent was from Lisi.

- (45) a. Zhangsan duo hua liang-bai-kuai qian
Zhangsan much spend two-hundred-CL money
'Zhangsan spent two more hundred dollars.'
- b. Zhangsan duo hua Lisi liang-bai-kuai qian.
Zhangsan much spend Lisi two-hundred-CL money
Two readings: 'Zhangsan spent two more hundred dollars than Lisi did.'
'Lisi's money which Zhangsan spent exceeds the money Lisi presupposed that Zhangsan would spend by two hundred dollars.'
- c. Zhangsan duo du Lisi liang ben shu

Zhangsan much read Lisi two CL book

‘Zhangsan read two more books than Lisi did.’

However, (45c) also has the indirect-object-like referential NP, *Lisi*, but it only has the comparative reading.

So far, we discuss several syntactic and semantic properties of the X Duo V (Y) D comparatives. Syntactically, the morpheme *duo* “much” should precede and attach to the verb. The verb can be a transitive or an intransitive syntactically, and it can be gradable or non-gradable semantically. Furthermore, the verb behind *duo* “much” takes two complements: the indirect-object-like referential NP, functioning as the standard of comparison; and the measure phrase, functioning as the differential. The comparative standard is optional, but the differential is obligatory. Here, the X Duo V (Y) D comparative is similar to the X A (Y) D comparative owing to the optional comparative standard and the obligatory measure phrase. Finally, the affective reading might be allowed in the X Duo V (Y) D comparative.

Those properties also bring us following questions: (A) What is the morpheme *duo* “much”? Is it similar to the comparative morpheme *guo* “exceed” (cf. Liu, 2007)? (B) Why is the differential obligatorily required, and the standard of comparison optional in the X Duo V (Y) D comparative? (C) Why might the affective reading be allowed in this comparative?

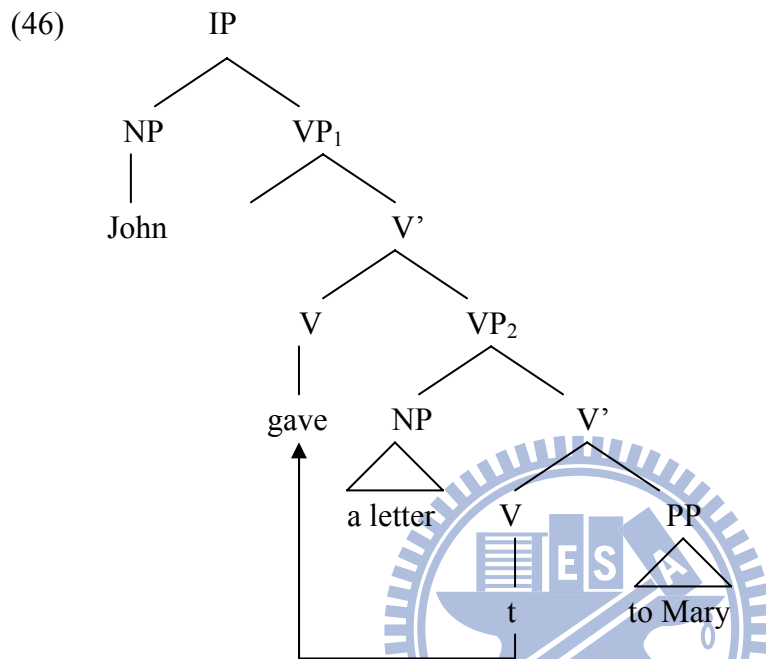
3.2 The Syntactic Analyses of the Duo V (Y) D Comparative

Before proceeding to our proposal, we shall briefly introduce as preliminaries Larson’s (1988) VP-shell analysis and Huang’s (2006) V-de phrasal resultative.

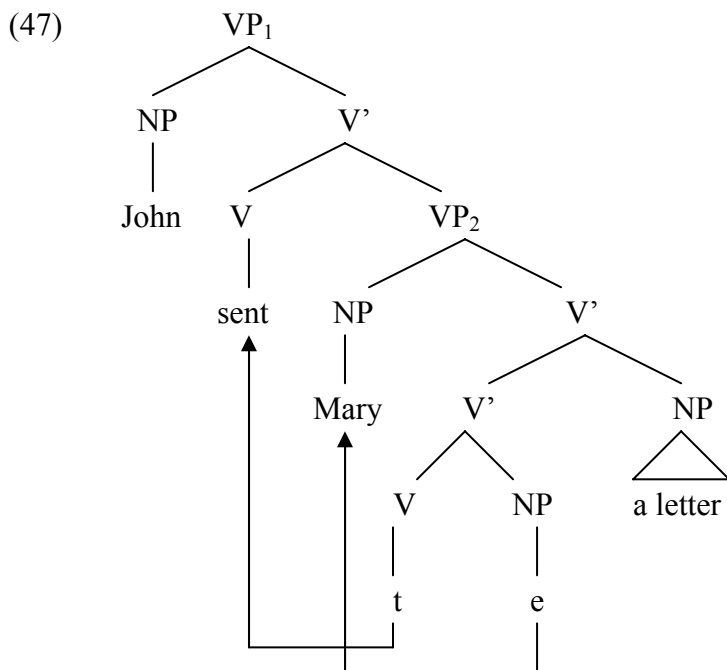
3.2.1 Preliminary

3.2.1.1 Larson (1988)

In this section, we review the VP-shell analysis. According to Larson (1988), the D-structure of the dative construction in English is the template of (46) which accounts for the asymmetric c-commanding relation between two objects.



As for corresponding double object construction, Larson proposes that the dative construction must go through a process similar to passivization, and the movement is like the structure in (47).



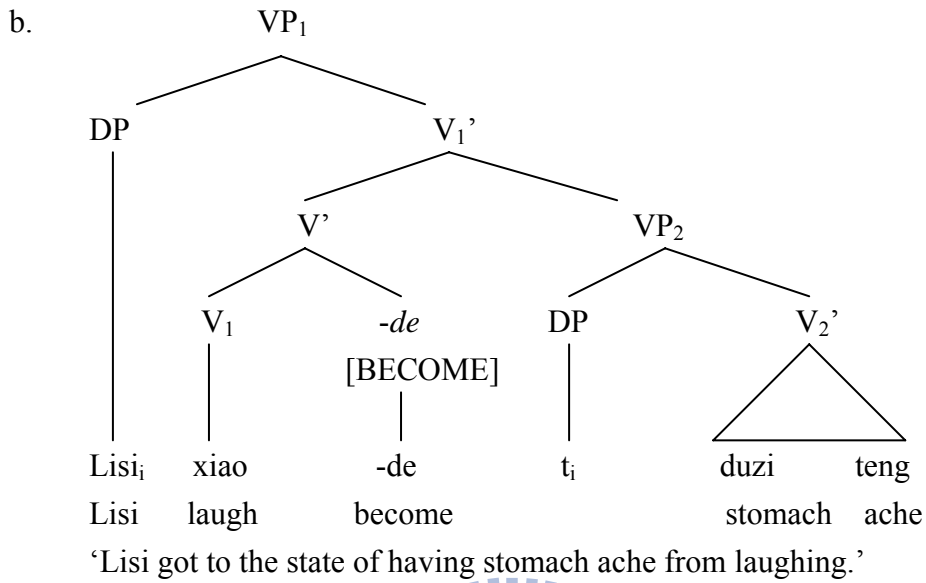
The direct object *a book* is demoted and situated in the position of adjunct. Furthermore, in analogy with the case absorption in passivization, the case assigned by *to* is absorbed in the dative construction. The caseless indirect object, then, moves to the specifier of VP₂, and the verb *give* undergoes head-to-head movement to assign a case to *Mary*.

3.2.1.2 C. T. Huang (2006)

Huang (2006) has proposed a structure of resultatives by the V-de phrase. He claims that the resultatives are composed of two events. The main event contains causative and inchoative meaning, and the sub-event is a manner which specifies how the main event takes place. According to Huang's analysis, the main event is expressed by *-de* in phrasal resultative, and the sub-event is expressed by V₁. In fact, *-de* is the main verb, which can be paraphrased as *bian-de* "become" or *shi-de* "cause", and V₁ is only an adjunct specifying the manner of the main event (Huang, 2006). There are three templates for the inchoative and causative construction, seeing as follows.

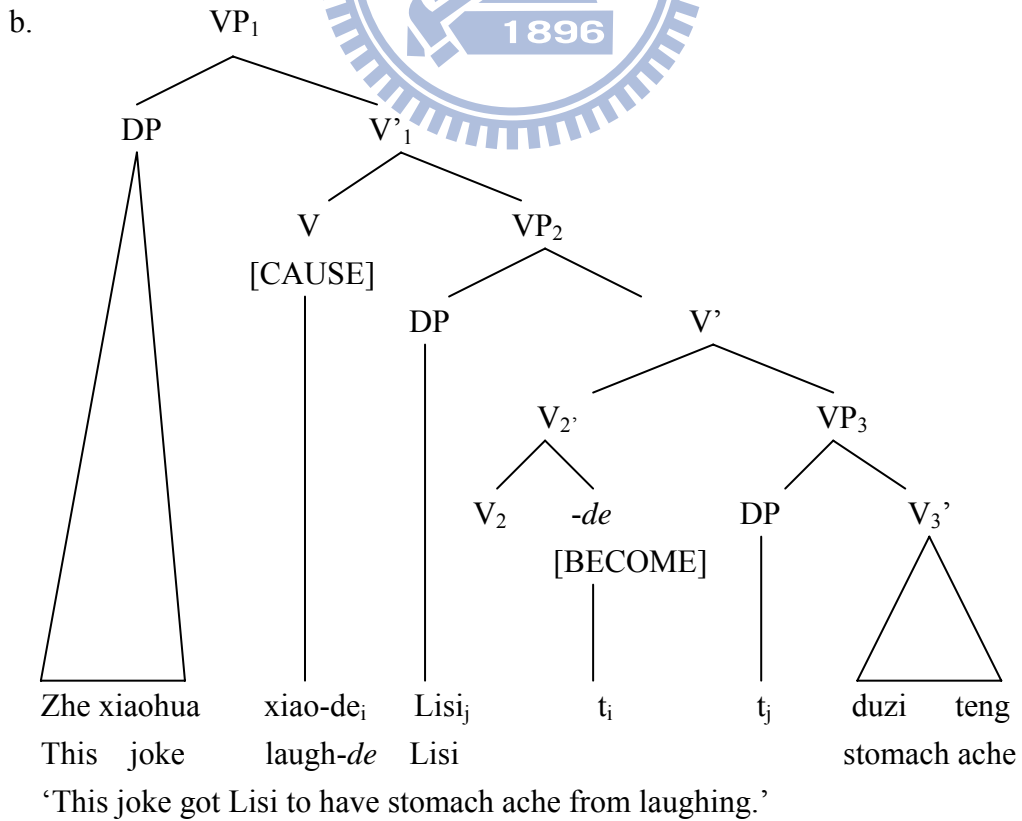
(48) a. The inchoative template:

[BECOME _{<manner>} [x <STATE>]]



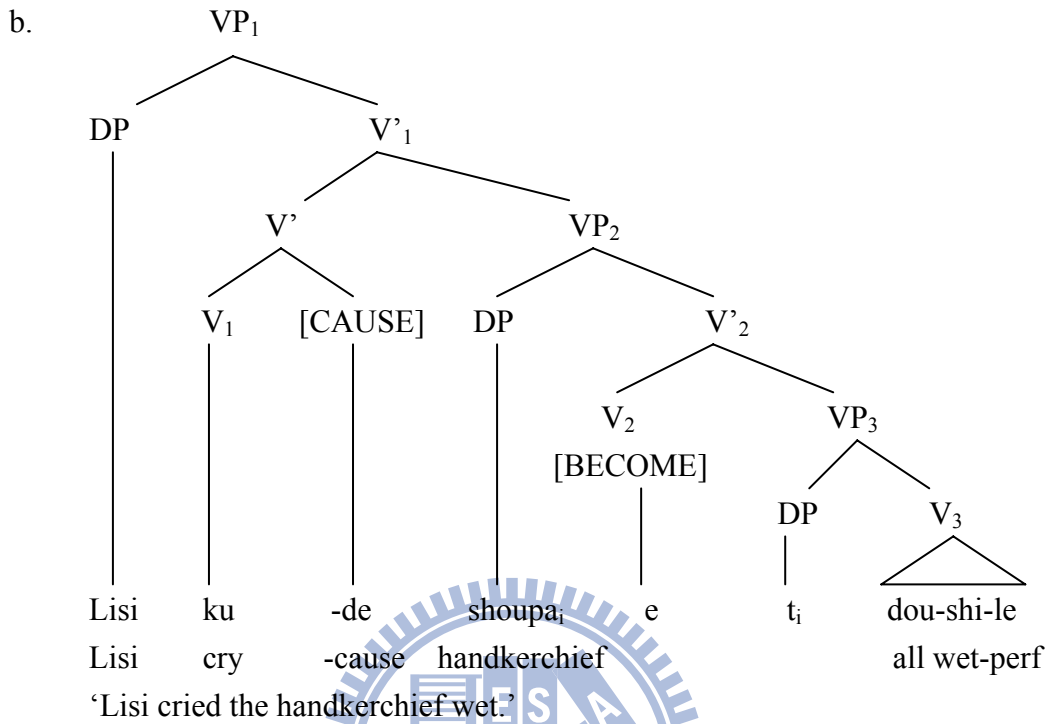
(49) a. The "pure" causative template:

[x CAUSE [BECOME _{<manner>} [y <STATE>]]]



(50) a. The “causing-with-a-manner” causative template:

[x CAUSE_{<manner>} [BECOME [y <STATE>]]]



Therefore, phrasal resultatives in Mandarin have three meanings, inchoative, ‘pure’ causative, and ‘causing-with-a-manner’ causative. Furthermore, phrasal resultative also have three corresponding structures. *-de* is the main verb and V_1 is only an adjunct.

3.2.2 Proposal

In this thesis, the morpheme *duo* “much” is regarded as a main verb, and the verb following *duo* “much” is a manner. *Duo* “much” selects the differential to be necessary. The possible affective reading derives from the lexical meaning of the verb following *duo* “much” rather than the syntactic structure of the comparative.

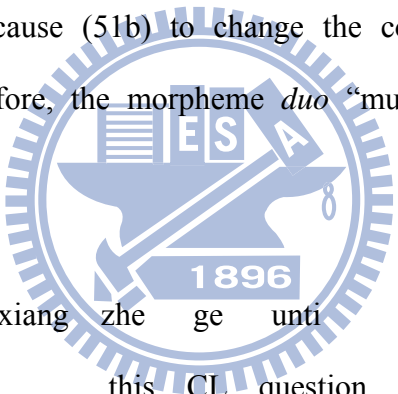
3.2.2.1 The Category of *Duo*

According to Zhu (1982), the word *duo* “much” can be an adjective (e.g., *ren duo* “there

is many people”), a transitive verb (e.g., *duo-le yi ge ren* “have one more person”), an adverb (e.g., *duo xiang xiang* “think more”), or an adverbial complement (e.g., *shuo de duo* “say much”). However, it can not be an attribute (e.g., **duo ren*).

Following Zhu’s (1982) definition, the morpheme *duo* “much” may be analyzed as a verb or an adverb. We have mentioned that there are two complements contained in the X Duo V (Y) D comparative. Therefore, the morpheme *duo* “much” may be a verb because it can take complements (e.g., *duo-le yi ge ren* “have one more person”). Since a verb following *duo* “much” in this comparative, the morpheme *duo* “much” may be also considered as an adverb modifying the verb behind it.

In (51), the verb *xiang-xiang* “think” is the semantic nucleus because the insertion of *duo* “much” in (51a) doesn’t cause (51b) to change the complement options of the head, *xiang-xiang* “think”. Therefore, the morpheme *duo* “much” in (51a) is considered as a modifier.



(51) a. Ni duo xiang-xiang zhe ge unti ba
 You much think this CL question SPF
 ‘Think this question more.’

b. Ni xiang-xiang zhe ge unti ba
 You think this CL question SPF
 ‘Think this question.’

(52) a. Ni duo du-le (Lisi) liang ben shu
 You much read-ASP Lisi two CL book
 ‘You read two more books (than Lisi).’

b. Ni du-le liang ben shu
 You read-ASP two CL book

‘You read two books.’

Different from (51), the insertion of *duo* “much” in (52a) changes the complement options and the meaning of (52b). The morpheme *duo* “much” makes (52a) contain two complements (i.e., *Lisi* and *liang ben shu* “two books”) and have the comparative meaning. Therefore, the semantic nucleus in (52a) is the morpheme *duo* “much” rather than the verb *du* “read”. *Duo* “much” should be considered as the main verb, not an adverb like (52a).

In Mandarin, a gradable predicate can be modified by a degree adverb like *geng* “more” or *hen* “very”, as (53a) and (53b) shows. When a gradable verb occurs behind *duo* “much” in the X Duo V (Y) D comparative, the morpheme *duo* “much” seems similar to a degree adverb, like the example in (53c).

(53) a. Zhangsan geng gao
Zhangsan more tall
‘Zhangsan is taller’

b. Zhangsan geng dong zhe zhong yuyan
Zhangsan more know this CL language
‘Zhangsan know this language better.’

c. Zhangsan duo dong Lisi san zhong yuyan
Zhangsan much know Lisi three CL language
‘The languages Zhangsan knows exceeds those Lisi knows in three languages.’

However, different from the degree adverb *geng* which needs to be bound with a predicate, the comparative morpheme *duo* “much” can be independent to be the main verb.

(54) a. Zhangsan duo Lisi liang gongli

Zhangsan much Lisi two kilometer

‘Zhangsan exceeds Lisi for two kilometers.’

b. *Zhangsan geng Lisi liang gongli

Zhangsan more Lisi two kilometer

According to Liu (2007), after merging with the covert suffix *guo2*, the adjectival predicate in the X A (Y) D comparative turns to be a verb, and it is incompatible with the degree adverb *geng* “more”, as (55a) illustrates. In (55b), *duo* “much” is also incompatible with the verb *gao-guo2*. It seems that *duo* “much” is a degree adverb like *geng*.

(55) a. *Zhangsan geng gao-guo2 Lisi san gongfen

Zhangsan more tall-guo2 Lisi three centimeter

b. *Zhangsan duo gao-guo2 Lisi san gongfen

Zhangsan much tall-guo2 Lisi three centimeter

c. Zhangsan duo chi Lisi liang ke li

Zhangsan much eat Lisi two CL pear

‘Zhangsan ate two more pears than Lisi did.’

Nevertheless, when *chi* “eat” in (55c) is also a verb, it should not be modified by a degree adverb. If the morpheme *duo* “much” is really parallel to the degree adverb *geng*, the contrast between (55a) and (55c) can not be explained.

We have mentioned that the morpheme *duo* “much” itself can be a verb taking complements. *Lisi* in (56) is a referential NP functioning as the standard of comparison, and the non-referential measure phrase *liang bai kuai* “two hundred dollars” functions as the differential.

(56) Zhangsan duo Lisi liang bai kuai

Zhangsan much Lisi two hundred dollar

‘Zhangsan’s money exceeds Lisi’s money by two hundred dollars.’

As *duo* “much” occurs in the X Duo V (Y) D comparative, there are also two complements. One is the referential NP which functions as the standard of comparison, and the other is the measure phrase functioning as the differential, as (57) denotes. Therefore, the morpheme *duo* “much” in the X Duo V (Y) D comparative is a verb.

(57) a. Zhangsan zou-le liang gongli

Zhangsan walk-ASP two kilometer

‘Zhangsan walked two kilometers.’

b. Zhangsan duo zou Lisi liang gongli

Zhangsan much walk Lisi two kilometer

‘Zhangsan walked two more kilometers than Lisi did.’

In this section, we have claimed that the comparative meaning derives from the occurrence of *duo* “much”, not the verb following it. *Duo* “much” is the nucleus in this comparative. Moreover, the morpheme *duo* “much” itself can be a main verb taking two complements, like (56). Thus, we can assume that the morpheme *duo* “much” is also a verb in the X Duo V (Y) D comparative. In next part, we will see the structure of the X Duo V (Y) D comparative.

3.2.2.2 The Structure of the X Duo V (Y) D Comparative

From above discussion, we have considered the morpheme *duo* “much” as a verb. Because the morpheme *duo* “much” must precede and cannot be separate from the verb

following it, there are two possible analyses for the structure of this type of comparison. First, the verb following *duo* “much” may undergo movement and merge with *duo* “much”. The other possibility is that *duo*+V is regarded as a compound word which forms the double object construction.

Liu (2007) claims that the adjective in the X A (Y) D comparative raises to combine with the covert verbal suffix *-guo2*, as the example in (58) illustrates. He also agrees with Chao (2005) that the adjective takes two complements: an indirect-object-like referential NP and a measure phrase.

(58) Zhangsan [_{Guo2P} [_{Guo2'} [_{Guo2} gaoi-guo2] [_{AP} Lisi [_{A'} [_A ti] [_{san} gongfen]]]]]

Zhangsan tall-guo2 Lisi three centimeter

‘Zhangsan is three centimeters taller than Lisi.’

Like the adjective in X A (Y) D comparative, *duo* + V is also a three place predicate which containing a subject, an indirect-object-like referential NP and a measure phrase, as examples in (59) denote. The indirect-object-like referential NP functions as the standard of comparison, and the measure phrase functions as the differential. Is the morpheme *duo* “much” possible to be a light verb like *guo* “exceed”?

(59) a. Zhangsan duo du Lisi liang ben shu

Zhangsan much read Lisi two CL book

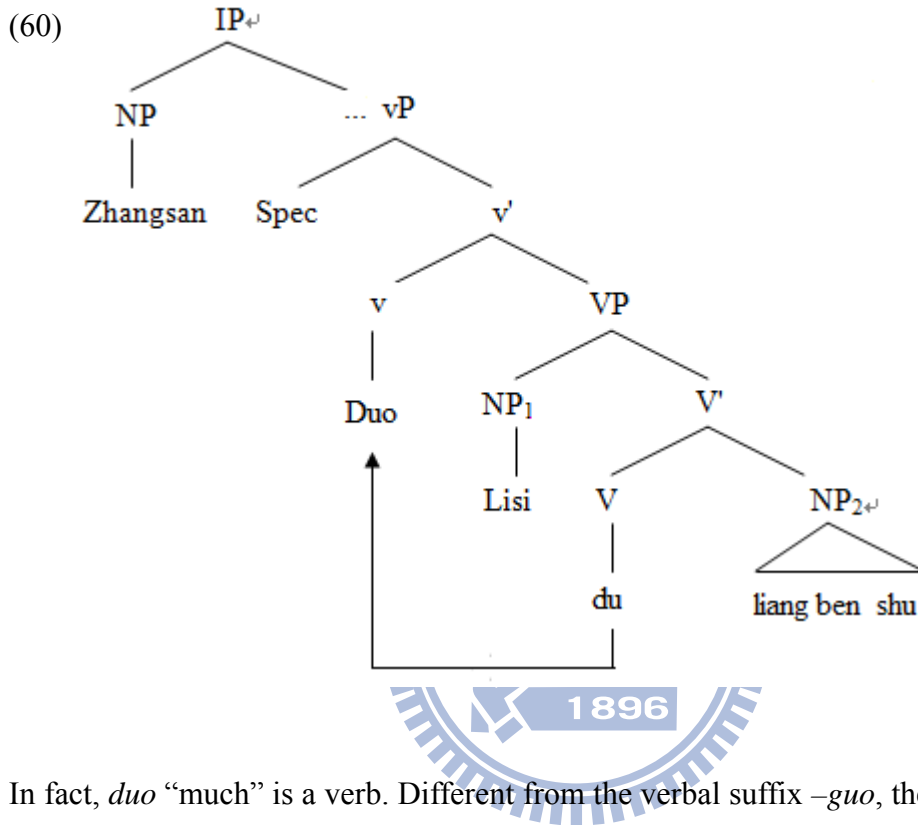
‘Zhangsan read two more books than Lisi did.’

b. Zhangsan duo zou Lisi liang gongli

Zhangsan much walk Lisi two kilometer

‘Zhangsan walked two more kilometers than Lisi did.’

Even though the *duo*+ V takes similar arguments like the adjectival predicate in (58), it may be inappropriate to assume that the X Duo V (Y) D comparative has an identical syntactic template with the X A (Y) D comparative.



In fact, *duo* “much” is a verb. Different from the verbal suffix *-guo*, the verb *du* “read” has no motivation to raise to the position which *duo* “much” has occupied. When *du* “read” cannot move to the position of the light verb, *Lisi* occurs between *duo* “much” and *du* “read”. It is unacceptable that the comparative morpheme *duo* “exceed” is separated from *du* “read”. If *du* “read” can be merged with *duo* “exceed” syntactically, a question might be : why the word order is *duo du* not *du duo*.

A light verb can decide its argument(s). For instance, the verb passive *bei* selects an NP as its subject and an IP clause as its complement, like (61) shows. Here, the meaning of the verb *da* “hit” doesn’t change, and the subject of *da* “hit” is *Lisi* rather than *Zhangsan*.

(61) [_{IP} Zhangsan bei [_{IP} OP_i [_{IP} Lisi da-le t_i]]]

Zhangsan BEI Lisi hit-ASP

‘Zhangsan is hit by Lisi.’

When the morpheme *duo* “much” is a light verb and separate from the verb *du* “read”, the subject which the light verb *duo* “much” selects is *Zhangsan*, and the subject of *du liang ben shu* “read two books” wrongly turns to be *Lisi*. However, in the X Duo V (Y) D comparative, X is the subject of both *duo* “much” and *du* “read”. Thus, the template in (60) is incorrect.

. We have mentioned that *duo* “much”, lexically, can be independent and be a verb containing two objects like (62).

(62) Zhangsan duo Lisi liang ben shu
Zhangsan much Lisi two CL book
‘Zhangsan’s books exceed Lisi’s books by two books.’

Thus, as *duo* “much” occurs in the higher V, it doesn’t allow any other verb to occur in the lower V head. If we build a structure like (60) for the X Duo V (Y) D comparative, *du* ‘read’ cannot move to the position which *duo* “much” has occupied and need to be located in the lower V. The sentence in (63) is ungrammatical. Moreover, the separation of *duo* “much” and *du* “read” is not allowed in the X Duo V (Y) D comparative.

(63) *Zhangsan duo Lisi du liang ben shu
Zhangsan much Lisi read two CL book

From above discussion, we know that the verb following *duo* “much” doesn’t undergo movement to merge with *duo* “much” in the light verb position. Thus, we turn to see the other analysis: *duo*+V is a compound word taking two complements. It means that *duo* and the verb

following it have combined together to be a compound verb in the lexicon.

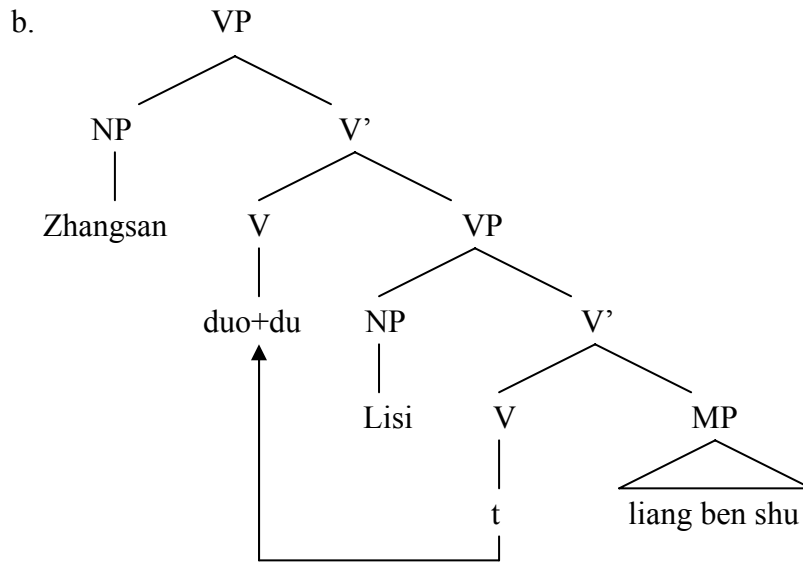
Examples in (64) show that *duo* must precede and combine with the verb. Besides, *Zhangsan* is the subject of *duo* “much” and *chi* “eat” at the same time.

- (64) a. Zhangsan duo chi Lisi liang ke li
 Zhangsan much eat Lisi two CL pear
 ‘Zhangsan ate two more pears than Lisi did.
- b. *Zhangsan chi duo Lisi liang ke li
 Zhangsan eat much Lisi two CL pear
- c. *Zhangsan duo Lisi chi liang ke li
 Zhangsan much Lisi eat two CL pear
- d. *Zhangsan chi Lisi duo liang ke li
 Zhangsan eat Lisi much two CL pear

Different from the verbal suffix *guo1* and *guo2* in the X A (Y) D comparative (Liu 2007), the morpheme *duo* “much” can be an independent verb. Thus, *duo* + V is considered as a compound containing two verbs, instead of considering *duo* “much” as a clitic on the verb.

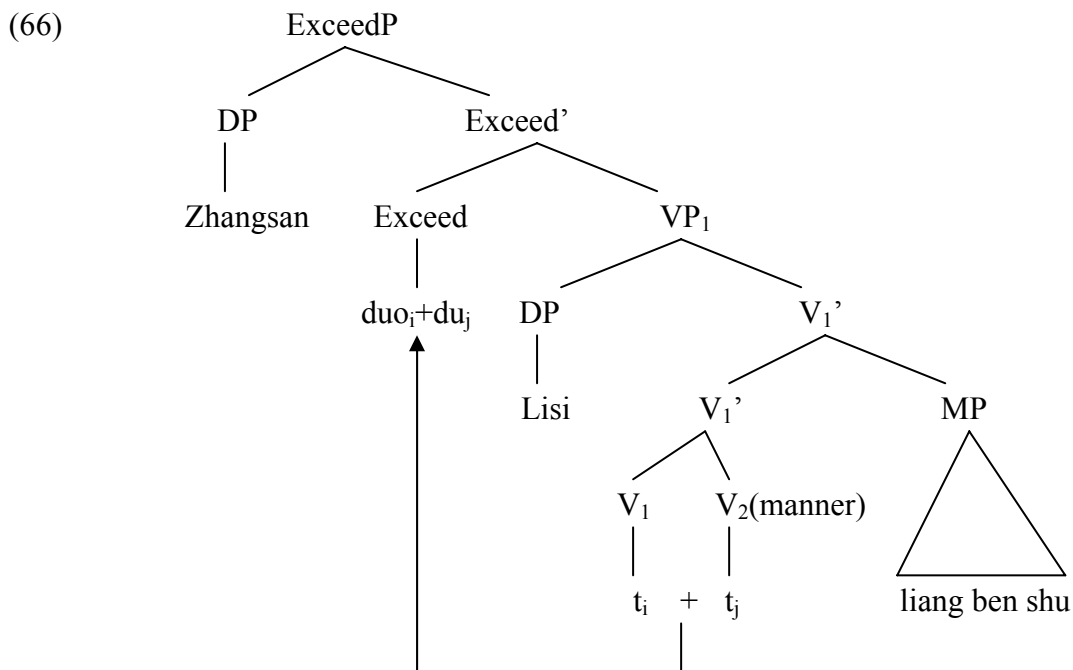
Since *duo* “much” and the verb have to combine together, the structure of the X Duo V (Y) D comparative is possible to be analyzed as (65), based on the VP-shell structure (Larson, 1988).

- (65) a. Zhangsan duo du Lisi liang ben shu
 Zhangsan much read Lisi two CL Book
 ‘Zhangsan read two more books than Lisi did.’



From this structure, the verb *duo du* “read much” takes two complements: the indirect-object-like NP *Lisi* and the measure phrase *liang ben shu* “two books”. The NP *Lisi* functions as the standard of comparison, and the MP *liang ben shu* “two books” functions as the differential.

Based on the *V-de* VP resultative phrase, we can assume that *duo* is the main verb, and the verb combining with *duo* “much” is a manner. The structure of the X Duo V (Y) D comparative in (65) should be revised as below structure.



The reason why we consider *duo* “much” as the main verb is that *duo* “much” is the semantic nucleus of this comparative (cf. the discussion in section 3.2.2.1). *Duo* “much” combines with a verb *du* “read” in the lexicon first, and then *duo+V* are moved to a light verb EXCEED for feature checking to form the comparative structure. The light verb EXCEED selects *Zhangsan* as the subject, *Lisi* as the comparison item, and *liang ben shu* “two books” as the differential. According to this structure, (66) can be explained as: *Zhangsan* exceeded *Lisi* in *liang ben shu* “two books”, and *Zhangsan* exceeded *Lisi* by the manner of *du* “reading”.

3.2.2.3 The Optional Standard of Comparison and the Obligatory Differential

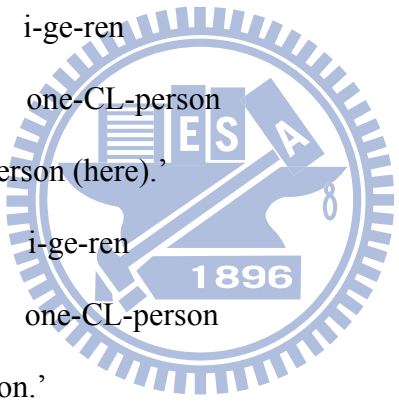
In 3.2.2.2, we have discussed about the structure of the X Duo V (Y) D comparative. However, the obligatoriness of the differential and the option of the comparative standard have not been proved yet.

We already know that the standard of comparison is optional and the measure phrase is obligatory to saturate the degree argument of the morpheme *duo* “much” when *duo* “much” alone is the predicate, as (67) shows.

(67) Zhangsan duo (Lisi) *(liang ben shu)
 Zhangsan much Lisi two CL Book
 ‘Zhangsan read two more books than Lisi did.’

According to Zhu, *duo* “much” can be a transitive verb, e.g., *duo-le yi ge ren* “There is one more person”. In fact, there is an optional locative subject of the verb *duo* “much” in *duo-le yi ge ren* “There is one more person”, as (68a) denotes. Furthermore, *duo* “much” in (68a) is an unaccusative verb like *lai* “come” in (68b).

(68) a. (Zheli) duo-le i-ge-ren
 Here much-ASP one-CL-person
 ‘There is one more person (here).’
 b. (Zheli) lai-le i-ge-ren
 Here come-ASP one-CL-person
 ‘(Here) comes a person.’



Semantically, the indefinite internal argument *i-ge-ren* “one person” is the agent of the predicate *lai* “come” and *duo* “much”, and it is obligatory syntactically. Therefore, in the example of (67), we can assume that the measure phrase functioning as the differential (i.e. *liang ben shu* “two books”) is the internal argument of the unaccusative verb *duo* “much”. The referential NP which functions as the standard of comparison (i.e. *Lisi*) becomes an extended location. In other words, we are standing on the position or point of the standard of comparison to measure the differential. Thus, the standard of comparison is considered as an extended location. Since the internal argument of an unaccusative verb is obligatory and the location is optional in (68a), the differential is obligatory and the standard of comparison is

thus optional in (67).

In the example of (67), *duo* “much” takes an optional standard of comparison and an obligatory differential as its complements. From the analysis of the structure of the X Duo V (Y) D comparative, we have argued that the main verb *duo* “much” combines with the verb functioning as a manner in the lexicon. When *duo* “much” is the main verb in the X Duo V (Y) M comparative, the standard of comparison is undoubtedly optional, and the differential is obligatorily required, as (69) denotes.

(69) Zhangsan duo du (Lisi) *(liang ben shu)
Zhangsan much read Lisi two CL Book
'Zhangsan read two more books than Lisi did.'

The other reason why the standard of comparison can be omitted is for its repetition in the context.

(70) Zhangsan han Lisi_i bisai kan shei du bijiao duo shu ,
Zhangsan and Lisi compete see who read more much book
jieguo Zhangsan duo du pro_i liang ben shu
finally Zhangsan exceed read pro two CL book
'Zhangsan has a competition with Lisi to see who can read more books than the other, and finally Zhangsan read two more books.'

The comparison of the standard, syntactically, is not necessary to show up when the context can offer the information, like (70) shows. In the structure, we will replace the standard of

comparison which is repeated by *pro*.⁴

3.2.2.4 The Affective Reading

It is interesting that the X Duo V (Y) D comparative might allow additional affective reading, as (71a) illustrates. Nevertheless, the sentence in (71b) only has the comparative reading.

(71) a. Zhangsan duo hua Lisi liang-bai-kuai qian

Zhangsan much spend Lisi two -hundred-CL money

Two readings: a. ‘Zhangsan spent two more hundred dollars than Lisi did.’

b. ‘Lisi’s money which Zhangsan spent exceeds the money Lisi presupposed that Zhangsan would spend by two hundred dollars.’

b. Zhangsan duo du Lisi liang ben shu

Zhangsan much read Lisi two CL book

‘Zhangsan read two more books than Lisi did.’

⁴ The standard of comparison is not allowed in the following sentences:

(i) Zhangsan duo qu (*Lisi/someone) meiguo liang ci
Zhangsan exceed go Lisi/someone American two time

‘The quantity that Zhangsan went to American exceeds that Lisi went to American in two times.’

(ii) a. Zhangsan duo gei (*Lisi/someone) liang ge nuhai tangguo
Zhangsan exceed give Lisi/someone two CL girl candy

‘Zhangsan gave two more girls candies.’

b. Zhangsan duo gei (*Lisi/someone) nuhai liang ge tangguo
Zhangsan exceed give Lisi/someone girl two CL candy

‘Zhangsan gave this girl two more candies.’

We have already known that the X Duo V (Y) D comparative contains two complements: the standard and the differential. In examples of (i) and (ii), the verb behind *duo* ‘exceed’ originally can take two objects. A predicate can take two complements at most. Since we have to consider the complement options of *duo* and of the verb at the same time, the standard of comparison is not allowed. From our argument, we know that the standard can be optional in the X Duo V (Y) D comparative. When we have to delete one complement, the optional standard is thus deleted. Moreover, one of the object would be the differential if it is a non-referential MP.

The only difference between (71a) and (71b) is about the verb behind *duo* “much”. Therefore, it is possible to say the affective reading in this comparative is not decided by *duo* “much” but the verb following it. The assumption is supported by the affective sentences without comparative meaning in (72).

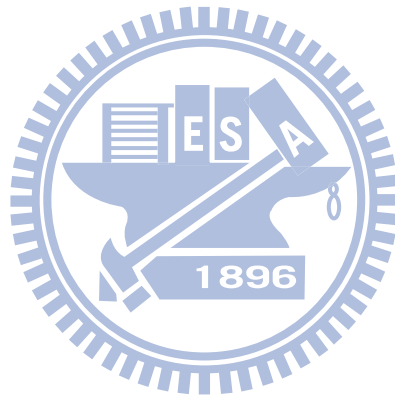
- (72) a. Zhangsan hua Lisi liang-bai-kuai qian
 Zhangsan spend Lisi two -hundred-CL money
 ‘Zhangsan spent two hundred dollars of Lisi.’
- b. Zhangsan du Lisi liang ben shu.
 Zhangsan read Lisi two CL book
 ‘Zhangsan read two books of Lisi.’

The construction of (72a) is a double-objects construction, and it is incorrect to think that the possessive maker *de* occurs behind *Lisi* (cf. Lu, 2000). In fact, the word *Lisi* may have three interpretations: the SOURCE of money (Zhu 1979, 1982), the ADVERSARY of *hua* “spend”, and the AFFECTEE of the event *hua liang-bai-kuai qian* “spend two hundred dollars” (Tsai, 2009). However, the example in (72b) doesn’t have the affective reading. We can find that the verb of (72a) belongs to the type having consuming meaning, but the verb of (72b) doesn’t. Therefore, the lexical meaning of the verbs in (72) decides if *Lisi* can be the affectee of the event.

The example in (71a) has the comparative and affective reading, but (71b) only has the affective reading. Therefore, the verb behind *duo* “exceed”, rather than the structural reason, decides if the X Duo V (Y) D has the affective meaning.

In fact, the sentence like (71b) might have the affective reading only in a specific context. For example, *Zhangsan* and *Lisi* swore that they only read three books, but finally *Lisi* found that *Zhangsan* broke the promise and read two more books. In this context, *Lisi* can be the

affectee of Zhangsan's breaking of the promise. Thus, if the verb combining with *duo* "much" is not a consuming verb, the affective reading is gotten from the context, and the sentence itself has no affective reading.



Chapter 4

The X KE V/A (Y) D COMPARATIVE IN TAIWANESE

Not only Mandarin but also Taiwanese has the comparatives without *bi*, as examples in (73) shown.

(73) a. Ong-e ke thak Li-e sann pun tshéh

Ong-e much read Li-e three CL book

‘Ong-e read three more books than Li-e.’

b. Ong-e ke kuan Li-e sann tshun

Ong-e much tall Li-e one-third decimeter

‘Ong-e is one-third decimeter taller than Li-e.’

Unlike the morpheme *duo* “much” in Mandarin, both a verb and an adjective can occur behind the morpheme *ke* “much” in Taiwanese.

In this section, we will explore the properties of the X Ke A/V (Y) D comparative. Based on Huang (2006), we consider the morpheme *ke* “much” as the main verb taking two complements: an optional standard of comparison and an obligatory differential. Like the X Duo V (Y) D comparative, the affective reading might be allowed in this comparative.

4.1 Properties

Before we see the structure of the X Ke A/V (Y) D comparative, we have to find out the properties of this comparative type. Here, we divide this comparative structure into two little constructions: one has a verb following *ke* “much”, and the other has an adjective behind *ke* “much”. Moreover, we will discuss syntactic and semantic properties of each.

4.1.1 Properties of the X Ke V (Y) D Comparative

4.1.1.1 The Syntactic Properties of the X Ke V (Y) D Comparative

The X Ke V (Y) D comparative in Taiwanese is similar to the X Duo V (Y) D comparative in Mandarin, and they almost have the same properties. The X Ke V (Y) D comparative has following properties.

First, the morpheme *ke* “much” must precede a verb, and it can not be separated from the verb, as the contrasts in (74) denote.

(74) a. Ong-e ke tsia Li-e sann liap phongko

Ong-e much eat Li-e three CL apple

‘Ong-e ate three more apples than Li-e.’

b. *Ong-e tsia ke Li-e sann liap phongko

Ong-e eat much Li-e three CL apple

c. *Ong-e ke Li-e tsia sann liap phongko

Ong-e much Li-e eat three CL apple

d.*Ong-e tsia Li-e ke sann liap phongko

Ong-e eat Li-e much three CL apple

Moreover, the verb behind the morpheme *ke* “much” needs not necessarily to be monosyllabic. The disyllabic verb also exists in the X Kei V (Y) D comparative, like the example in (75) shows.

(75) a. Ong-e ke tsau Li-e nng kongli

Ong-e much run Li-e two kilometer

‘One-e ran two more kilometers than Li-e did.’

- b. Ong-e ke kah-i Li-e nng-e tsa-bo-gin-a
 Ong-e much like Li-e two girl
 ‘Ong-e likes two more girls than Li-e.’

Second, the verb behind *ke* “much” in the X Ke V (Y) D comparative in Taiwanese, similar to one following *duo* “much” in the X Duo V (Y) D in Mandarin, can be a transitive or an intransitive.

Ke + a transitive verb

In (76a), the verb *thak* “read” originally takes only a complement *sann pun tsheh* “three books”. Owing to the addition of the morpheme *ke* “much”, there are two complements included in the X Kei V (Y) M comparative: an indirect-object-like NP *Li-e* and an object MP *sann pun tsheh* “three books”, like (76b).

- (76) a. Ong-e thak sann pun tsheh
 Ong-e read three CL book
 ‘Ong-e read three books.’
- b. Ong-e ke thak Li-e sann pun tsheh
 Ong-e much read Li-e three CL book
 ‘Ong-e read three more books than Li-e.’

In Mandarin, the X Duo V (Y) D comparative needs the measure phrase to occur in the same VP with the morpheme *duo* “much”. In Taiwanese, the X Ke V (Y) D comparative also need the morpheme *ke* “much” and the measure phrase to be in the same VP.

- (77) a. Ong-e [khi nng kin tsheh-kiok]_{VP1} [be tsheh]_{VP2}.

Ong-e go two CL bookstore buy book

‘Ong-e went to two bookstores to buy books.’

b. Ong-e [ke khi nng kin tsheh-kiok]_{VP1} [be tsheh]_{VP2}.

Ong-e much go two CL bookstore buy book

‘Ong-e went to two more bookstores to buy books.’

(It is true in the situation where Ong-e was planning to go to three bookstores to buy books, but he went to five bookstores at the end.)

c. *Ong-e [khi nng kin tsheh-kiok]_{VP1} [ke be tsheh]_{VP2}.

Ong-e go two CL bookstore much buy book

(78) a. Ong-e [khi tsheh-kiok]_{VP1} [be nng pun tsheh]_{VP2}.

Ong-e go bookstore buy two CL book

‘Ong-e went to a bookstore to buy two books.’

b. Ong-e [khi tsheh-kiok]_{VP1} [ke be nng pun tsheh]_{VP2}.

Ong-e go bookstore much buy two CL book

‘Ong-e went to a bookstore to buy two more books.’

(It is true in the situation where Ong-e was planning to buy three books at a bookstore, but he bought five books at the end.)

c. *Ong-e [ke khi tsheh-kiok]_{VP1} [be nng pun tsheh]_{VP2}.

Ong-e much go bookstore buy two CL book

In (77a) the MP *nng kin tsheh-kiok* “two bookstores” is the object of the verb *khi* “go” in VP₁. As *ke* “much” occurs and forms the X Duo V (Y) D comparative, *ke* “much” locates in VP₁ in (77b), and the sentence is true if *Ong-e* went to two more bookstore than he had planned. When the MP turns to be *nng pun tsheh* “two books” in VP₂ like (78), *ke* “much” then occurs in VP₂ to form this comparative, and the sentence means that *Ong-e* bought two more books

than he had planned. It is ungrammatical if *ke* “much” and the MP are not in the same VP like (77c) and (78c).

Ke + intransitive verb

The verb behind *ke* “much” in the X Kei V (Y) D comparative may be a transitive verb. The verb of (78a) is an intransitive verb typically. However, it might take a pseudo-object, *nng kongli* “two kilometers” in (79b). As it is contained in the X Kei V (Y) D comparative, like (79c), there are two complements.

(79) a. Ong-e ban-ban-a tsau

Ong-e slowly run

‘Ong-e ran slowly.’

b. Ong-e tsau nng kongli

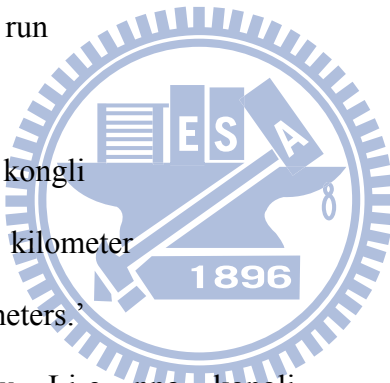
Ong-e run two kilometer

‘Ong-e ran two kilometers.’

c. Ong-e ke tsau Li-e nng kongli

Ong-e exceed run Li-e two kilometer

‘Ong-e ran two more kilometers than Li-e.’



In (79c), the adverbial complement *nng kongli* “two kilometers” turns to be the measure phrase, and the referential NP *Li-e* is inserted to be one of the complement in the X Kei V (Y) D comparative. The referential NP, then, is like an indirect object, and the measure phrase is like an object in the X Kei V (Y) D comparative.

Third, the referential NP needs to precede the non-referential measure phrase in the X Kei V (Y) D comparative; otherwise, it is ungrammatical, as the contrast between (80a) and

(80b) indicates.

(80) a. Ong-e ke thak Li-e sann pun tsheh

Ong-e much read Li-e three CL book

‘Ong-e read three more books than Li-e.’

b. *Ong-e ke thak sann pun tsheh Li-e

Ong-e much read three CL book Li-e

Fourth, as we just mentioned, the indirect object NP should be referential; however, the object measure phrase don’t have to be non-referential.

(81) a. Ong-e ke thak Li-e sann pun tsheh

Ong-e much read Li-e three CL book

‘Ong-e read three more books than Li-e.’

b. *Ong-e ke thak mng-e lang sann pun tsheh

Ong-e much read two-CL person three CL book

c. Ong-e ke thak Li-e tsi sann pun tsheh

Ong-e much read Li-e this three CL book

‘Ong-e read these three more books than Li-e.’

In (81c), the DP *tsi sann pun tsheh* “these three books” functions as a differential which measures the exceeding quantity about reading books. No matter the non-referential numeral-measure unit (e.g., *sann pun tsheh* “three books” in (81a)) or the referential DP (e.g., *tsi san pun tsheh* “these three books” in (81c)), both of them function as the differential which stands for the quantitative difference between two comparative items.

4.1.1.2 The Semantic Properties of the X Ke V (Y) D Comparative

The semantic properties of the X Ke V (Y) D comparative are as follows. First, the morpheme *ke* “much” in Taiwanese, like the morpheme *duo* “much” in Mandarin, is the semantic nucleus which brings the comparative meaning.

(82) a. Ong-e tsia nng uann png

Ong-e eat two CL rice

‘Ong-e ate two bowls of rice.’

b. Ong-e ke tsia nng uann png

Ong-e much eat two CL rice

‘Ong-e ate two more bowls of rice (than someone).’

As the contrast in (82) illustrates, the comparative meaning occurs due to the insertion of the morpheme *ke* “much”.

Second, the verb following *ke* “much” in this comparative construction can be either a gradable or a non-gradable verb. To add a degree adverb *tsin* “very” upon the verb is one way to see if the verb is gradable.

(83) a. Ong-e tsin kah-i A-hue-a

Ong-e very like A-hue-a

gradable

‘Ong-e likes A-hue-a very much.’

b. *Ong-e tsin thak sann pun tsheh

Ong-e very read three CL book

non-gradable

The gradable verb *kah-i* “like” can be modified by a degree adverb *tsin* “very”, but the non-gradable verb *thak* “read” cannot. Nevertheless, not only a gradable but also a

non-gradable verb, like examples in (84), occurs in the X Kei V (Y) M comparative in Taiwanese.

(84) a. Ong-e ke kah-i Li-e nng-e tsa-bo-gin-a

Ong-e much like Li-e two-CL girl

‘Ong-e likes two more girls than Li-e does.’

b. Ong-e ke thak Li-e sann pun tsheh

Ong-e much read Li-e three CL book

‘Ong-e read three more books than Li-e.’

We have mentioned that two complements are contained in this comparative style: an indirect-object-like referential NP and an object MP. In fact, the indirect-object-like NP functions as the standard of comparison, and the object MP is considered to be the differential in the X Ke V (Y) D comparative in Taiwanese. Taking (84a) as an example, the subject *Ong-e* compares with the other individual *Li-e*, the differential is correlated with how many girls *Ong-e* likes exceeds the quantity of girls that *Li-e* likes.

Moreover, the differential in this comparative type is obligatory, and the standard of comparison is optional.

(85) Ong-e ke thak (Li-e) *(sann pun tsheh)

Ong-e much read Li-e three CL book

‘Ong-e read three more books than Li-e.’

In (85), the standard of comparison *Li-e* is allowed to be omitted, but the sentence is ungrammatical if the differential *sann pun tsheh* ‘three books’ is deleted.

Similar to the X Duo V (Y) D comparative in Mandarin, the X Kei V (Y) D comparative

in Taiwanese might also have an additional affective reading. For instance, (86a) doesn't show the comparative standard, and it only has the comparative meaning that *Ong-e* spent two more hundred dollars than someone. When the comparative standard appears in the sentence like (86b), there are two readings: the comparative and the affective readings, and *Li-e* can be either the standard of comparison or the affectee during the event of money-spending.

(86) a. Ong-e ke khai nng pah kho

Ong-e much spend two hundred dollar

'Ong-e spent two more hundred dollars (than someone).'

b. Ong-e ke khai Li-e nng pah kho

Ong-e much spend Li-e two hundred dollar

Two readings: 'Ong-e spent two more hundred dollars than Lisi did.'

'Li-e's money which Ong-e spent exceeds the money Li-e presupposed that Ong-e would spend by two hundred dollars.'

However, this affective reading is not found in (86a). The example in (86a) only has the comparative meaning.

4.1.2 Properties of the X Ke A (Y) D Comparative

4.1.2.1 The Syntactic Properties of the X Ke A (Y) D Comparative

Similar to other comparative constructions without *bi* in this paper, the morpheme *ke* "much" must precede the adjective, and they cannot be separated, as the contrasts in (87).

(87) a. Ong-e ke kuan Li-e sann tshun

Ong-e much tall Li-e three one-third decimeter

'Ong-e is one decimeter taller than Li-e.'

- b. *Ong-e kuan ke Li-e sann tshun
 Ong-e tall much Li-e three one-third decimeter
- c. *Ong-e ke Li-e kuan sann tshun
 Ong-e much Li-e tall three one-third decimeter
- d. *Ong-e kuan Li-e ke sann tshun
 Ong-e tall Li-e much three one-third decimeter

By the way, the adjective following the morpheme *ke* “much” can be mono-/di-syllabic.

- (88) Ong-e ke pui/ tua-kho Li-e go kongkin
 Ong-e much fat Li-e five kilometer

‘Ong-e is five kilometers fatter than Li-e.’

There are also two complements contained in the X Ke A (Y) D comparative. The first is a referential NP, and the other is a non-referential measure phrase. In (89a), the indirect-object-like NP is *Li-e*, and the quantity-/extent-denoting cognate object is *sann tshun* “three centimeter”.

- (89) a. *Ong-e ke tua go-e lang sann hue
 Ong-e much old five people three year
- b. *Ong-e ke tua Li-e tsi sann hue
 Ong-e much old Li-e these three year

The sentence in (89a) is ungrammatical because we wrongly replace the referential NP by a non-referential *go-e lang* “five people”, and the example in (89b) is unacceptable because we put a referential MP *tsi sann hue* “these three years” into a non-referential position.

Third, we have mentioned that the referential NP must precede the non-referential measure phrase in the X Ke V (Y) D comparative. As the contrast in (90), this situation can also be found in the X Ke A (Y) D comparative. The non-referential NP *Li-e* must precede the measure phrase *sann hue* “three years”; otherwise, it is ungrammatical.

(90) a. Ong-e ke tua Li-e san hue

Ong-e much old Li-e three year

‘Ong-e is three years older than

b. *Ong-e ke tua sann hue Li-e

Ong-e much old three year Li-e

Forth, the measure phrase in most case is a numeral-measure-unit pattern, as examples in (91) indicate.

(91) a. Ong-e ke tang Li-e sann kongkin

Ong-e exceed heavy Li-e three kilogram

‘Ong-e is three kilogram heavier than Li-e.’

b. *Ong-e ke ian-tau Li-e san to

Ong-e exceed handsome Li-e three degree

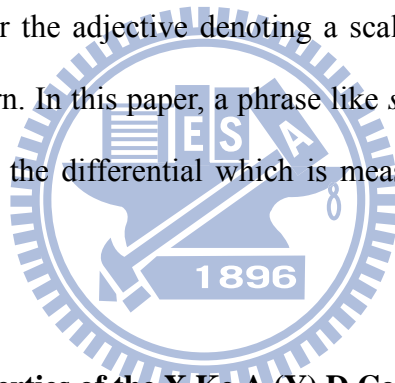
The adjectives mentioned above (like *tua* “old (age)”, *tang* “heavy”, *kuan* “tall, and etc.) denote a scale which can be measured by a numeral-unit, for example *hue* “year”, *kongkin* “kilogram”, and *tshun* “one-third decimeter”. The scale denoted by the adjective *ian-tau* “handsome” in (91b) cannot be measured by a fixed numeral-unit, and then the sentence is ungrammatical.

In fact, similar to the X A (Y) D comparative in Mandarin, the X Ke A (Y) M

comparative in Taiwanese can also contain a phrase like *tsin tse* “very much” or *siokhua* “a little”.⁵

- (92) a. A-hue-a ke sui A-kiau-a tsin tse
 A-hue-a much beautiful A-kiau-a very much
 ‘A-hue-a is more beautiful than A-kiau-a.’
- b. Ong-e ke kuan Li-e siokhua
 Ong-e much tall Li-e a little
 ‘Ong-e is a little taller than Li-e.’

Thus, it is not necessary for the adjective denoting a scale which should be measured by a numeral-measure-unit pattern. In this paper, a phrase like *siokhua* “a little” is also considered as an MP which stands for the differential which is measured between the subject and the standard of comparison.



4.1.2.2 The Semantic Properties of the X Ke A (Y) D Comparative

In the X Ke A (Y) D comparative, the adjective behind *ke* “much” has to be gradable, as

⁵ Adjectives can be divided into two types: the measurable and the non-measurable adjective. According to Liu (2007), the notion “measurable” means the scale denoted by the adjective can be measured by a conventionalized measure unit. If the scale denoted by an adjective conforms to the requirement: the measure unit must be conventionalized and fixed as a rule for measuring the scale denoted by the adjective, then the measure phrase of the X A (Y) D comparative might be replaced by one like *hen duo* ‘very much’ or *bu shao* ‘not little’, as shown by examples below.

- (i) Zhangsan gao Lisi hen duo.
 Zhangsan tall Lisi very much
 ‘Zhangsan is much taller than Lisi.’
- (ii) Zhe-ben shu pianyi na-ben bu shao.
 this-CL book cheap that-CL not little
 ‘This book is much cheaper than that one.’

the contrast in (93) denotes.

(93) a. Ong-e ke tua Li-e siokhua *gradable*

Ong-e much old Li-e a little

‘Ong-e is a little older than Li-e.’

b. *Ong-e ke tsin Li-e siokhua *non-gradable*

Ong-e much true Li-e a little

Furthermore, because the predicate in the X Ke A (Y) D comparative can take two complements, this type of comparison has a double-object-like syntactic property. It contains two complements: an indirect-object-like referential NP and a direct-object-like non-referential MP. The referential NP is considered to be the standard of comparison, and the non-referential MP functions as the differential between the two compared degree values along the scale denoted by the adjectival predicate. The standard of comparison may be omitted, but the differential is obligatory.

(94) a. Ong-e ke tua Li-e sann hue

Ong-e much old Li-e three year

‘Ong-e is three years older than Li-e.’

b. Ong-e ke tua sann hue

Ong-e much old three year

‘Ong-e is three years older (than Li-e).’

c. *Ong-e ke tua Li-e

Ong-e much old Li-e

d. *Ong-e ke tua

Ong-e much old

So far, we discuss several syntactic and semantic properties of the X Ke V/A (Y) D comparatives. Syntactically, the morpheme *ke* “much” should precede and attach to the verb/adjective. The syntactic type of the verb can be a transitive or an intransitive, and the verb can be either gradable or non-gradable in semantic analysis. If an adjective located behind the morpheme *ke* “much”, it can only be a gradable one. Furthermore, there are two complements in the X Ke V/A (Y) D comparative: the indirect-object-like referential NP, functioning as the standard of comparison; and the measure phrase, functioning as the differential. The comparative standard is optional, but the differential is obligatory. Finally, the affective reading might be allowed in the X Ke V (Y) M comparative.

The X Ke V (Y) D comparative in Taiwanese has the same properties as the X Duo V (Y) D comparative. Moreover, the X A (Y) D comparative in Mandarin and the X Ke A (Y) D comparative have almost the same syntactic and semantic properties; nevertheless, the morpheme *duo* “much” is not allowed to be in front of the adjective in Mandarin, like (95) shows.

- (95) a. Zhangsan ta Lisi san sui
 Zhangsan old Lisi three year
 ‘Zhangsan is three years older than Lisi.’
- b.*Zhangsan duo ta Lisi san sui
 Zhangsan much old Lisi three year

Those properties also bring us following questions: (A) What is the morpheme *ke* “much”? Is it similar to the morpheme *guo* “exceed”(cf. Liu, 2007) or the morpheme *duo* “much”? (B) Why is the standard of comparison optional in the X Ke V/A (Y) D comparative? (C) Why is the differential obligatorily required in this type of comparative? (D) Why might

the affective reading be allowed as a verb following *ke* “much”?

4.2 Proposal

Based on Huang’s (2007) V-de phrasal structure, a unifying analysis is proposed for the X Ke V/A (Y) D comparative construction. We argue that the morpheme *ke* “much” is a verb. Similar to *duo* “much” in Mandarin, we need the differential to restrict the interval argument of *ke* “much” in Mandarin. The affective reading might be allowed in this comparative because of the lexical meaning of the verb following *ke* “much”.

4.2.1 The Category of *Ke*

Since the X Ke V (Y) D comparative in Taiwanese has almost the same properties as the X Duo V (Y) D comparative in Mandarin, we can assume that the morpheme *ke* “much” is a verb like the morpheme *duo* “much”. Like the morpheme *duo* “much” in Mandarin, Taiwanese *ke* “much” is the semantic nucleus forming the comparative sentence like (96b).

(96) a. Ong-e thak nng pun ang-a-tsheh

Ong-e read two CL comic book

‘Ong-e read two comic books.’

b. Ong-e ke thak Li-e nng pun ang-a-tsheh

Ong-e much read Li-e two CL comic book

‘Ong-e read two more comic books than Li-e did.’

After inserting the morpheme *ke* “much”, the comparative meaning occurs. Moreover, there is an additional complement *Li-e* being the standard of comparison. Therefore, it is quite reasonable to consider the morpheme *ke* “much” as a verb.

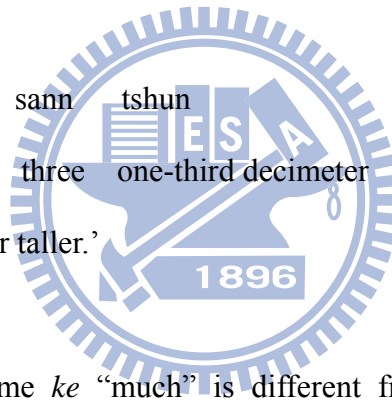
In fact, the morpheme *duo* “much” itself can be a predicate, as (97) shows.

(97) a. Tsi kun ke hi kun nng e lang
 This group much that group two CL person
 ‘This group exceeds that group in two persons.’

b. Ong-e ke Li-e sann pah kho
 Ong-e much Li-e three hundred dollar
 ‘Ong-e’s money exceeds Li-e’s money by three hundred dollars.’

The other hypothesis is that the morpheme *ke* “much” is a degree modifier because a gradable adjective can occur behind it in the X Ke V/A (Y) D comparative.

(98) Ong-e ke kuan sann tshun
 Ong-e much tall three one-third decimeter
 ‘Ong-e is one decimeter taller.’



However, the morpheme *ke* “much” is different from a degree modifier. After the insertion of the morpheme *ke* “much”, the adjective *kuan* “tall” in (98) is still an adjective, and it is impossible to take a complement *sann tshun* “one decimeter”. Moreover, the contrast in (99) cannot be explained if the morpheme *ke* “much” is a degree modifier.

(99) a. Ong-e tsiok kuan
 Ong-e very tall
 ‘Ong-e is very tall.’

b.*Ong-e ke kuan
 Ong-e much tall

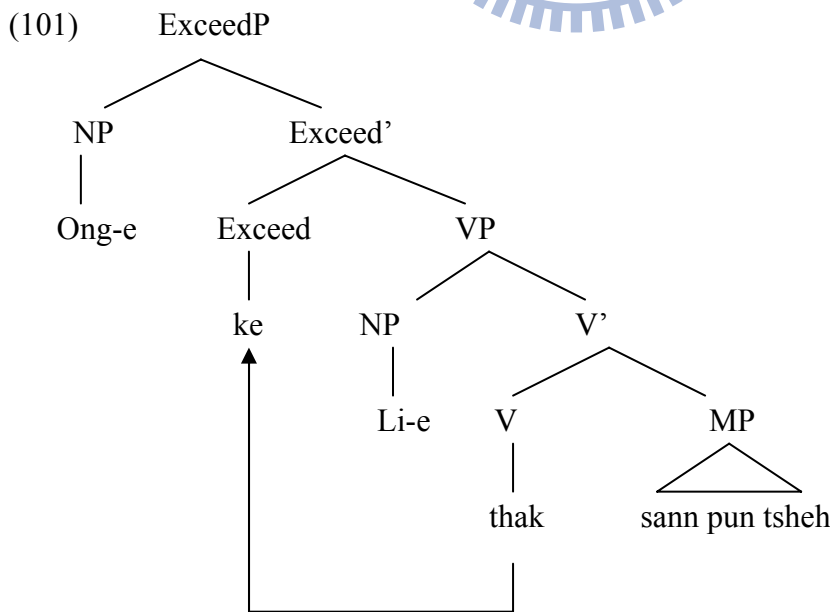
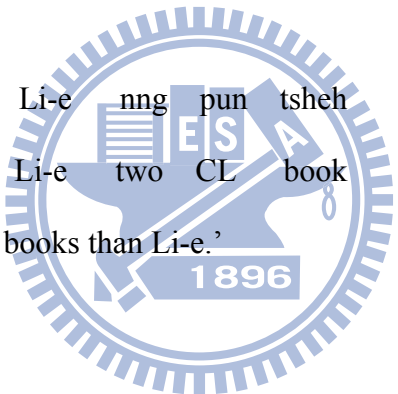
The morpheme *ke* “much” can also be followed by a non-gradable verb in the X Duo V/A (Y) D comparative, as the example in (99b) denotes. Therefore, from above discussion, we can claim that the category of the morpheme *ke* “much” is a verb rather than a degree modifier.

4.2.2 The Structure of the X Ke V/A (Y) D Comparative

4.2.2.1 The Structure of the X Ke V (Y) D Comparative

After knowing that the morpheme *ke* “much” is a verb, it seems reasonable for us to put *ke* “much” in the position of a light verb EXCEED. The verb following *ke* “much” may undergo movement to merge with the light verb. Here, we use the sentence in (100) as an instance.

(100) Ong-e ke thak Li-e nng pun tsheh
 Ong-e much read Li-e two CL book
 ‘Ong-e read two more books than Li-e.’



However, the structure in (101) is incorrect. Different from the verbal suffix *guo*

“exceed” in Mandarin, Taiwanese *ke* “much” can be a verb by itself, and it needn’t to bind with other words to be a verb. Thus, there is no motivation about the raising of *thak* “read”.

Furthermore, we have mentioned that a light verb can decide its argument(s). For instance, in Mandarin, the passive *bei* selects an NP as its subject and an IP clause as its complement, like (102) shows.

(102) [_{IP} Zhangsan bei [_{IP} OP_i [_{IP} Lisi da-le t_i]]]

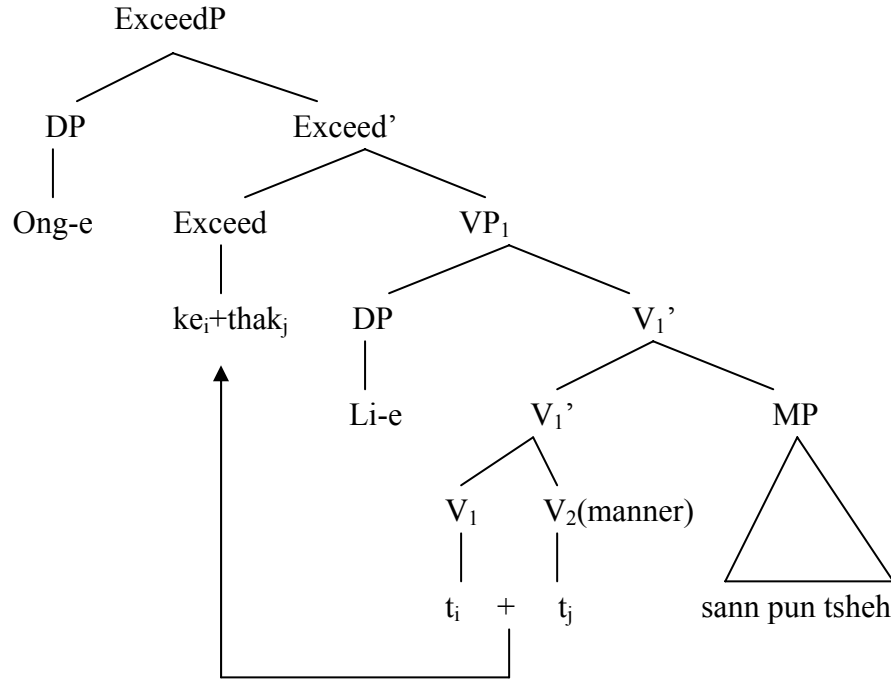
Zhangsan BEI Lisi hit-ASP

‘Zhangsan is hit by Lisi.’

The verb *da* “hit” selects *Lisi* rather than *Zhangsan* to be its subject. When *ke* “much” is located in the position of the light verb, the verb *thak* “read” is in the lower V. Similar to the passive sentence in Mandarin, in this comparative, the light verb *kei* “much” selects *Ong-e* as its subject, but the verb *thak* “read” selects *Li-e* as its subject. The morpheme *ke* “much” cannot be separated from the verb behind it in this comparative, but they are split up in the structure (101). Therefore, the template (101) is wrong.

The other possibility is that *ke* +V is a compound word which takes two objects. Based on Larson’s (1988) VP shell and Huang’s (2006) V-*de* phrase, we can assume the template of the sentence in (101) should be as follows.

(103)



The main verb is the morpheme *ke* “much”, and it takes two complements: the indirect-object-like NP *Li-e*, functioning as the standard of comparison; the object MP *sann pun tsheh* “three books” which functions as the differential. The verb behind *ke* “much”, the transitive verb *thak* “read”, turns to be a manner. After the main verb *ke* “much” combines with the manner *thak* ‘read’ to be a compound word in the lexicon, they have to move to the EXCEED head for feature checking, and then the comparative construction is formed. In this structure, the NP *Ong-e* is the subject not only of the verb *ke* “much” but also of the manner *thak* “read”.

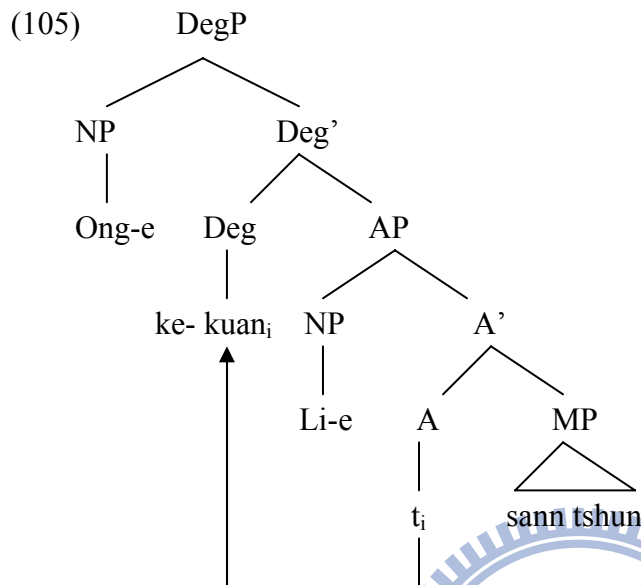
4.2.2.2 The Structure of the X Ke A (Y) D Comparative

The adjectival comparative always projects an extended functional projection DegP. If we wrongly consider that *ke* “much” is a degree adverb, we may have the following wrong template (105) for the sentence (104).

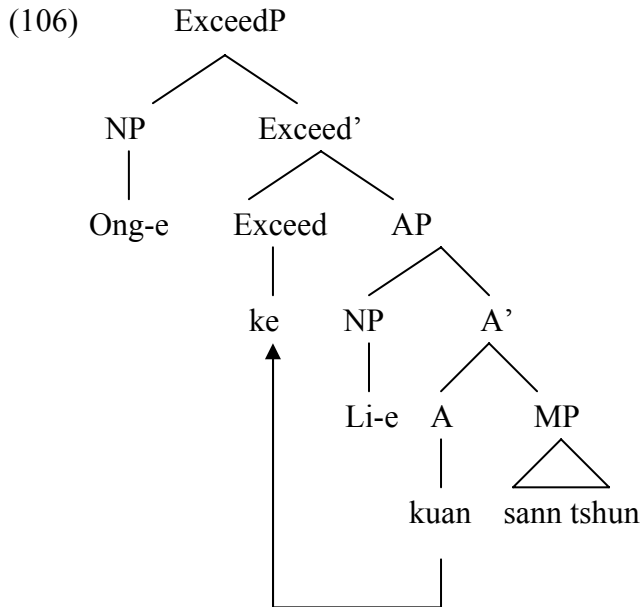
(104) Ong-e ke kuan Li-e sann tshun

Ong-e much tall Li-e three one-third decimeter

‘Ong-e is one decimeter taller than Li-e.’



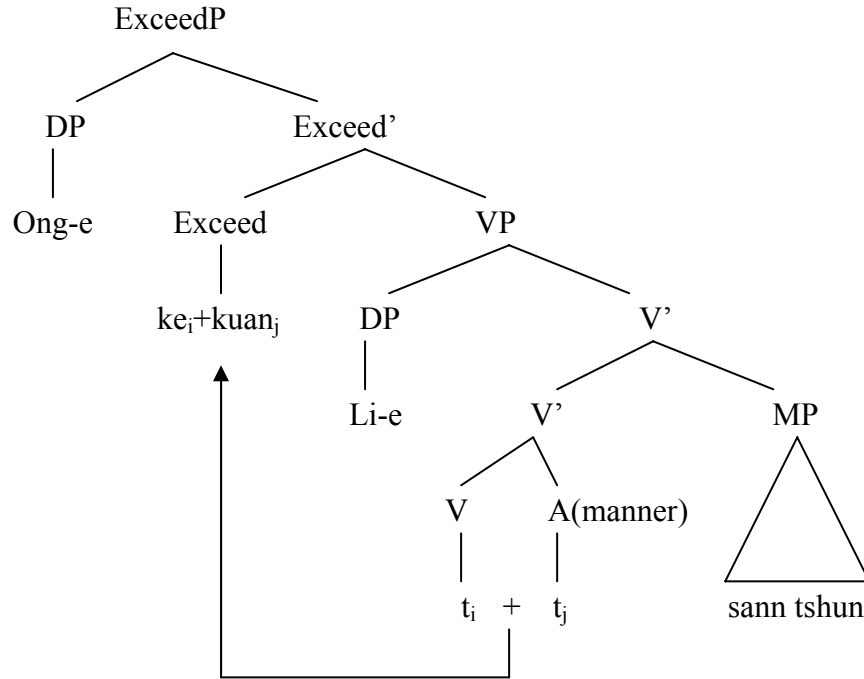
However, we have known that *ke* “much” is a verb, not a degree adverb. Moreover, the combination of *ke* “much” and *kuan* “tall” in the structure (105) is still an adjective. An adjective is impossible to take complements except that it is incorporated into a light verb (cf. Liu, 2010). How about make the morpheme *ke* “much” to be the light verb, and has the structure like (106)?



This structure is very similar to the X A (Y) D comparative in Mandarin. But, different from the verbal suffix *guo2* “exceed”, the morpheme *ke* “much” is overt, and it can be independent to be a verb. Thus, the adjective *kuan* “tall” has no motivation to move to the head EXCEED which has been occupied by *ke* “much”. At the beginning of the syntactic properties in this comparative construction, we have claimed that the comparative morpheme *ke* “much” is not allowed to apart from the adjective. The structure in (106) may also have the wrong reading that *Ong-e* is the subject of *ke* “much” and *Li-e* is the subject of *kuan* “tall”.

Here, based on Larson’s (1988) VP shell and Huang’s (2006) V-*de* phrase, the structure proposed is like the following template. We assume that the sentence has two meanings: *Ong-e* exceeds *Li-e* in *sann tshun* “one decimeter”, and *Ong-e* is taller than *Li-e*. The former is the main event, and the latter is the sub-event that specify the manner how the main event takes place.

(107)



The main verb and the manner combines together to be a compound word in the lexicon, and then they are moved to the EXCEED head in order to check the feature to be a comparative construction. In this structure, *Ong-e* exceeds *Li-e* in *sann tshun* “one decimeter” by the manner that *Ong-e* is taller. In other words, the derivation makes *Ong-e* to be the subject of two predicates, *ke* “much” and *kuan* “tall”. Moreover, there are two complements: the indirect-object-like NP *Li-e*, functioning as the standard of comparison, and the object MP *sann tshun* “one decimeter”, functioning as the differential.

4.2.3 The Optional Standard of Comparison and the Obligatory Differential

Taiwanese *ke* “much” is identical with Mandarin *duo* “much”, and both of them can be an unaccusative verb, like the examples in (108). The measure phrase behind *duo* “much” and *ke* “much” is the experiencer semantically, and it is obligatory syntactically. However, the locations, *zheli* “here” and *tsia* “here”, is optional even though they are the subjects in syntax.

(108) a. Mandarin

(Zheli) duo-le i-ge-ren
 Here much-ASP one-CL-person
 ‘There is one more person (here).’

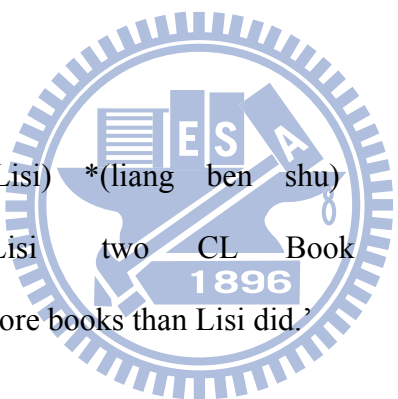
b. Taiwanese

(Tsia) ke ji-e-lang
 Here much one-CL-person
 ‘There is one more person (here).’

Moreover, Taiwanese *ke* “much”, like Mandarin *duo* “much”, can be a verb by itself and form a comparative construction like (110).

(109) Mandarin

Zhangsan duo (Lisi) *(liang ben shu)
 Zhangsan much Lisi two CL Book
 ‘Zhangsan read two more books than Lisi did.’



(110) Taiwanese

a. Ong-e ke (Li-e) *(go hue)
 Ong-e much Li-e five year
 ‘Ong-e is five years older than Li-e.’

b. Ong-e ke (Li-e) *(sann pun tsheh)
 Ong-e much Li-e three CL book
 ‘Ong-e’s book exceeds Li-e’s book by three books.’

We have considered the standard of comparison in Mandarin, e.g., *Lisi* in (109), as an extended location which is optional (c.f. 3.2.2.3). Therefore, we can also consider the standard

of comparison in Taiwanese as an extended location, and it is optional, as *Li-e* in (110). The measure phrase is obligatory in (108) when the verb is an unaccusative one. After forming the comparative construction, the measure phrase functioning as the differential should be necessary either.

According to my analysis, the verb *ke* “much” combines with a manner to be a compound in the lexicon, and then they are moved to the head EXCEED to form the X Ke V/A (Y) D comparative. In (110), the morpheme *ke* “much” can be a verb by itself and form a comparative construction. Moreover, the standard of comparison is optional, and the differential is obligatory. When *ke* “much” becomes the main verb in the X Duo V (Y) D comparative, the standard of comparison is undoubtedly optional, and the differential is obligatorily required, as the examples in (111) shows.

- (111) a. Ong-e ke tua (Li-e) *(go hue)
 Ong-e much old Li-e five year
 ‘Ong-e is five years older than Li-e.’
- b. Ong-e ke thak (Li-e) *(sann pun tsheh)
 Ong-e much read Li-e three CL book

The pragmatic use may be the other reason why the standard of comparison can be optional is. When the standard of comparison has mentioned in the context, for economy, we would omit it because the speaker or the listener has known it.

- (112) Ong-e ka Li-e_i bi khua siang thak khah tse tsheh,
 Ong-e and Li-e compare see who read KHAH much book
 ketko Ong-e ke thah pro_i nng pun tsheh
 finally Ong-e much read pro two CL book

“Ong-e had a competition with Li-e to see who can read more books, and Ong-e finally read two more books (than Li-e).”

4.2.4 The Affective reading

The affective meaning might be allowed not only the X Duo V (Y) D comparative in Mandarin but the X Ke V (Y) D comparative in Taiwanese. Let’s see the contrast bellow.

(113) a. Ong-e ke lim Li-e sann pue tsiu

Ong-e much drink Li-e three CL wine

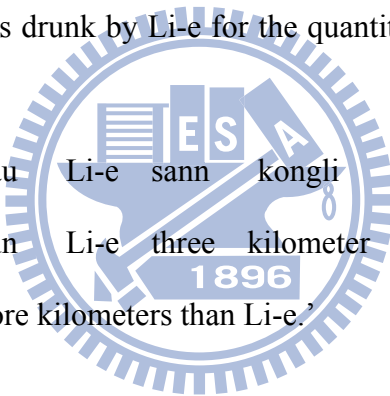
(i) ‘Ong-e drank two more glasses of wine than Li-e.’

(ii) ‘Li-e’s wine was drunk by Li-e for the quantity of two more glasses that Li-e presupposed.’

b. Ong-e ke tsau Li-e sann kongli

Ong-e much run Li-e three kilometer

‘Ong-e ran three more kilometers than Li-e.’



We can find that (113a) has a comparative and an affective reading, but the example (113b) only has the comparative reading. The only difference between (113a) and (113b) is about the verb behind the *ke* “much”. We also find that the predicate *lim* “drink” can take affective reading like (114) even if there is not a comparative morpheme in the sentence.

(114) Ong-e lim Li-e sann pue tsiu

Ong-e drink Li-e three CL wine

‘Li-e was drunken three glasses of wine by Ong-e.’

The NP *Li-e* is the affectee of the event that *Ong-e* drank three glasses of wine. Therefore, we

know that the occurrence of affective reading is related to the lexical meaning of the verbal predicate behind *ke* “much”, and it is not correlated with the structure of the comparative.

In Mandarin, we can find that the verb belonging to the type having consuming/ getting hurt meaning (e.g., spent, drink, hit and etc.) may cause the affective reading. This situation is also found in Taiwanese. That is the reason why (113a) has two readings, but (113b) only has one reading.

If the sentence (113b) has the affective reading, it may only occur due to the discourse, not the lexical meaning of the verb behind *ke* “much”. If *Ong-e* had made a promise with *Li-e* that they only ran five kilometers, *Ong-e* finally ran eight kilometers secretly. When *Li-e* found that *Ong-e* broke the promise, *Li-e* seems to be betrayed, and then he turns to be the affectee or a victim under the event that *Ong-e* ran three more kilometers than him.

4.3 Without the Morpheme *Ke*

In fact, another adjectival comparative without *bi* exists in Taiwanese. The morpheme *ke* “much” may be deleted like the example in (115a), and the structure is similar to the X A (Y) D comparative in Mandarin.

- (115) a. Ong-e tua Li-e sann hue
Ong-e old Li-e three year
'Ong-e is three years older than Li-e.'
- b. *Ong-e tua sann hue
Ong-e old three year
- c. *Ong-e tua Li-e
Ong-e old Li-e

From (115b) and (115c) neither the deletion of the standard of comparison or the omitting of

the measure phrase is unacceptable. In other words, both of the two complements are obligatory after the morpheme *ke* “much” is deleted. Thus, this type of comparative is certainly different from the X A (Y) D comparative in Mandarin.

Before proceeding to our proposal, we shall briefly introduce as preliminaries the light verb syntax of Lin (2001).

4.3.1 Preliminary: Lin (2001)

The thematic relations between a Chinese verb and its argument(s) are very complicated. For instance, the subject of the transitive verb *kai* “drive” can be an Agent, an Instrument or even a Location in Mandarin; however, it can only be an Agent in English, as (116a-c) show.

- (116) a. Zhangsan kai-guo zhe sao chuan
 Zhangsan drive-ASP this CL boat
 ‘Zhangsan drove this boat before.’
- b. Zhe sao chuan jijing kai-le san nian le
 this CL boat already drive-ASP three year SFP
 ‘This boat has already been driven for three years.’
- c. Zhe tiao he bu neng kai zhe zhong chuan
 this CL river not can drive this kind boat
 ‘This kind of boats cannot be driven in this river.’

(117) John drove this boat.

Lin (2001), following Hale and Keyser’s (1993) l-syntactic decomposition of lexical verbs, proposes a theory that has two assumptions as follows:

(118) a. A verb contains both the lexical root and the light verb(s) in English but only the lexical root and no light verb in Chinese.

b. The combination of lexical roots and light verbs are quite liberal in s-syntax.

Therefore, the verb *drive* in English has the l-syntactic lexical relational structure like (119).

The root $\sqrt{\text{drive}}$ moves to the light verb V_2 and V_1 to be a transitive verb which takes NP_1 as an Agent subject and NP_2 as a Theme object.

(119) [$VP_1 NP_1 [V_1 V_1 [VP_2 NP_2 [V_2 V_2 [VP_3 [V_3 \sqrt{\text{drive}}]]]]]]]$

Chinese *kai* “drive” has only VP_3 as the lexical entry, and it may merge with the same light verb like English *drive* does in s-syntax. However, based on (118b), the combination of *kai* “drive” and other light verbs are liberal in s-syntax. Thus, some light verbs may license the subject an Instrument relation, and some a Location.

Lin (2001) also points that there were quite productive verb movement in Archaic Chinese. The ancient-modern discrepancy in Chinese, therefore, results from weakening of the verbal morphology in the Chinese verbs. It has been noticed by many researchers of historical Chinese linguistics that, in Archaic Chinese, the uses of verbs, adjectives, and nouns are much more liberal than in Contemporary Chinese (cf. Wang 1980, Tan 1981, among many others). For example, the causative use of the adjective is like (120).

(120) Gu tian jiang jiang da-ren yu si-ren ye,
 therefore Heaven will fall great-responsibility to that-person Prt,
 bi xian **ku** qi xin-zhi, **lao** qi jin-gu
 definitely first **bitter** his heart-mind, **laborious** his muscle-bone

‘Therefore, if Heaven is going to assign great responsibility to some person, His

Majesty definitely will first set his heart in bitterness and his body in laborious situations...’

(*Gozi, Mengzi*, 300 BC.)

As (121) shows, in Archaic Chinese, X which can be either of the three categories V, A, or N, can incorporate to the higher light verb V. However, X can only be V in Modern Chinese.

(121) ...[_{VP} [_V [_V] [_{XP}...X...]]]

Therefore, different from the example (120) in Archaic Chinese, Modern Chinese doesn’t permit de-adjectives of the English type, as evidenced by the following examples:

- (122) a. *xiao zhe-ge dongxi
small this-Cl thing
‘to make this thing small’
- b. *kuan na-ge churu-kou
wide that-Cl entrance
‘to widen that entrance’

4.3.2 The Structure without *Ke*

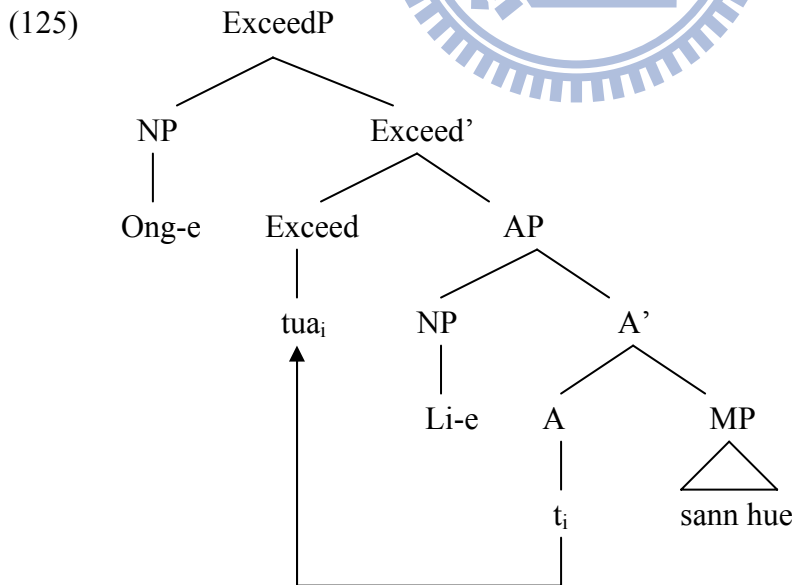
We have mentioned that, in Archaic Chinese, X which can be either of the three categories V, A, or N, can incorporate to the higher light verb V. However, X can only be V in Modern Chinese.

(123) ...[_{VP} [_V [_V] [_{XP}...X...]]]

In the sentence of (124), copied from (115a), the adjectival predicate *tua* “much” takes two nominal expressions, e.g., *Lisi* and *sann hue* “three years”.

(124) Ong-e tua Li-e sann hue
 Ong-e old Li-e three year
 ‘Ong-e is three years older than Li-e.’

Since the atypical use of the adjective in the X Kei A (Y) D comparative is considered as the residue of different stratum of Archaic Chinese, we can assume that the sentence (124) is the remain of Archaic Chinese. The adjectival predicate is incorporated to a light verb EXCEED, and it turns to be a verb which can take complements. The syntactic structure of (124) is like (125).



This structure is different from the X A (Y) D comparative. In this type of comparative, there is no explicit comparative morpheme to make the standard of comparison or the

differential to be optional. The adjective *tua* “old” is simply incorporated into a light verb EXCEED, and this comparative construction becomes a double object construction.



The adjectival comparative without *bi* has been studied for several years. However, seldom papers discuss about the verbal comparative without *bi*. Therefore, this thesis is concerned about two kinds of comparative without *bi*: the X Duo V (Y) D comparative in Mandarin and the X Ke V/A (Y) D comparative.

In section 2, I review previous analyses of the X A (Y) D comparative in Mandarin including Chao (2005), Xiang (2005), and Liu (2007). As for Chao (2005), the double-object-like construction has been built for the adjectival comparative without *bi*; however, the option of the standard of comparison and the obligatoriness of the differential cannot be explained. Xiang (2005) proposes that a covert morpheme *exceed* is moved to combine with the adjectival predicate, and then *exceed+adjective* is moved to the Deg head, which *bi* originally occupied. In Xiang's thesis, she neither explains why the differential is obligatory in the bare comparative. In terms of Liu (2007), the X A (Y) D comparative involves the covert verbal suffix *-guo2*, which is grammaticalized from the verbal suffix *-guo1* "exceed". Since the semantic content of *-guo2* is bleached, the covert comparative morpheme lost the ability to license the interval argument of the adjective. Thus, the differential is necessary to restrict the interval argument of the adjective.

In section 3, I propose a unified analysis of the X Duo V (Y) D comparative in Mandarin based on Larson's VP-shell (1988) and Huang's V-de resultative phrase structure (2006). The morpheme *duo* "much" is the semantic nucleus of this comparative type, and its insertion brings the standard of comparison. Thus, I assume the category of the morpheme *duo* "much" is a verb, and it is the main verb. After combining with a verb functioning as a manner to be a compound, *duo+V* are moved to a light verb EXCEED to form the comparative construction.

Considering the standard of comparison as an extended location and the differential as an experience of a unaccsative verb, the standard of comparison is optional, and the differential is necessary. The affective might be allowed in the X Duo V (Y) D comparative because of the verb following *duo* “much” rather than *duo* “much”.

Finally, in section 4, I go further to see the corresponding morpheme *ke* “much” in Taiwanese. Again, based on Larson (1988) and Huang (2006), the morpheme *ke* “much”, like *duo* “much” in Mandarin, is considered as the main verb of the X Ke V/A (Y) D comparative. The verb and the adjective following *kei* “much” is the manner how X exceeds Y. The standard of comparison is also considered as an optional extended location, and the differential as an obligatory experiencer. The affective reading also occurs as a verb following the morpheme *ke* “much”. Like the X Duo V (Y) D comparative in Mandarin, the affective reading in the X Ke V/A (Y) D comparative comes from the V rather than *ke* “much”. In fact, the morpheme *ke* “much” might be deleted. Base on Lin’s light verb theory (2001), the structure may be a residue of different stratum of Archaic Chinese. The adjective is incorporated to a light verb EXCEED. Different from the adjectival comparative in Mandarin, both of the standard of comparison and the differential are obligatory in this adjectival comparative in Taiwanese.

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