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The Phrasal Empty Categories in Mandarin Chinese

漢語的詞組性空範疇

經由本人指導撰述，同意提付審查。

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**THE PHRASAL EMPTY CATEGORIES
IN MANDARIN CHINESE**

by
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ABSTRACT

The aim of this study is to explore the so-called ellipsis phenomena in Chinese. Under the model of generative grammar, we examine ellipsis of different syntactic categories. It is concluded that only empty DP and CP constituents are referential, denoting references in certain syntactic configurations. Other constituents like VP and NP are not so much referential and their ellipsis can be derived by the rules of PF deletion. This distinction is attributed to the reasoning that “items/individuals” and “propositions” are more likely to denote referential entities. They are, thus, more likely to appear in *pro*-form or Pro in natural languages. Other elements like properties, events, or descriptions are prone to be generated in the PF component.

The organization of this thesis is as follows. Chapter 1 is a review of the literature. We discuss three families of analyses, as well as ellipsis of different categories – NP (Wasow 1972; Saito & Murasugi 2004), VP (Zagona 1998), IP (Merchant 2001; CLM 1995), and others. This discussion is followed by a review of Chinese empty nominals (Huang 1984; Xu 1986; Li 2007), empty *pro*-forms (Lobeck 1995; Li 2008), and deletion (Merchant 2001; Aelbrecht 2009). Chapter 2 discusses the empty phrasal category of NP. The discontinuous empty phrasal categories suggest an account of PF deletion inside the Chinese DP. Chapter 3 analyzes the ellipsis of light verb complements. It is argued that VP is the deletion domain and PF deletion is the way to derive it. Light-verb-stranding VPE is attested in Chinese. Chapter 4 discusses the non-existence of IP-sized empty categories. The apparent sluicing constructions are accounted for by either *wh*-predication to an empty subject *pro*, or deletion within the pseudo-cleft construction. Chapter 5 analyzes tag questions. Two types of tag questions indicate the existence of empty categories of CPs, and their properties are examined. Chapter 6 concludes the thesis.

摘要

本篇論文主旨在討論漢語的數種刪略現象，根據不同的句法範域，檢視不同大小的「詞組性空範疇」，將以往廣泛討論的刪略現象(ellipsis)納入到生成語法的其中一個部門內討論。在生成語法的基模之下，我們認為各種範域的空範疇當中，只有指示詞組(DP)以及補語詞組(CP)為指代詞性質元素，而其他如動詞組(VP)或名詞組(NP)的空範疇，則可由音韻部門刪略來衍生。這樣的分布原因在於，「個體」和「命題」一般分別體現為指示詞組及補語詞組，而「個體」和「命題」最有可能有指射性(referential)的特性，在自然語言當中自然體現為空代詞或空代號(pro-form)。其他的成份如「性質」、「描述」、「事件」等，則能夠為刪略(ellipsis)現象，體現在自然語言當中。這樣的分別，讓我們可以知道不同的語言結構元素如何對應到不同性質的空範疇，而自然衍生不同的性質。

本論文章節分布大致如下：第一章為文獻回顧，首先討論以往分析刪略現象的三種派別：空結構、語意拷貝、音韻刪略。再區分名詞組、動詞組、時制詞組、曲屈詞組等分別在西方文獻的討論。接下來討論漢語當中空代號以及刪略現象討論的文獻。第二章討論名詞組(NP)大小的成份，討論其由音韻刪略衍生的可能性。主要的論證在於不連續性空代號的詮釋，以及音韻前行語的必要。第三章討論輕動詞補語的音韻刪略現象，證實輕動詞許可的刪略範域為動詞組(VP)。我們運用移位測試和語境前行語測試肯定音韻刪略的性質。第四章討論中文沒有曲折詞組大小的刪略，類似疑問詞刪略的句式有兩種生成方式：其一為疑問詞謂語修飾空主語(Wei2004)，其二為準分裂句當中的主語發生刪略，兩者皆認為遺留在表面的移位詞組是謂語。第五章討論中文的後附語(Tag question)，認為其中涉及補語詞組的空範疇，並詳細檢視後附語句式的性質。第六章總結並討論理論的意涵。

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Abbreviations and formats used in examples and glosses

Adv.	adverbial
Asp	aspectual marker
Aux	auxiliary
CL	classifier
INT	interrogative element
Int.	intended meaning
Res	resultative marker

bold boldface highlights a stressed element

CAPITALIZED theta roles of arguments are capitalized in the text
word pronunciation (without meaning) is capitalized in the gloss

~~strikethrough~~ strikethrough indicates deletion or nonpronunciation

italic italic indicates the content of examples

> a greater-than sign indicates the linear ordering of “[x] precedes [y]”



THE PHRASAL EMPTY CATEGORIES IN CHINESE

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CHAPTER 0. INTRODUCTION

- 0.1 Setting the Stage
- 0.2 Thesis Statement
- 0.3 Organization
- 0.4 Methodology and Perspective

0.1 Setting the Stage

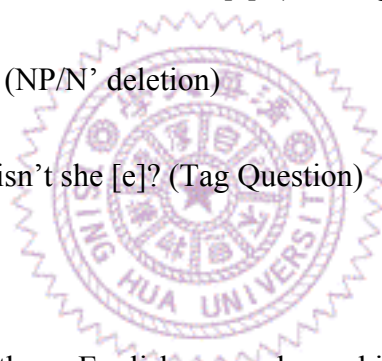
Empty nominals in different syntactic positions display different characteristics with respect to their referential identity (Xu 1986; Li 2007; Liu 2004). The internal structures and properties of “phrasal” empty elements, however, are not much discussed in the literature. Examples of these phrasal empty categories, adapted from (Gengel 2006), are given in (1)-(6). Among these examples, VP Ellipsis (VPE) in (1), pseudo-gapping in (2), and gapping in (3) are constructions that display empty categories of VP¹ size. Sluicing is an example of IP ellipsis (Merchant 2001). NP/N' deletion (Lobeck 2006) is shown in (5). As for the tag questions in example (6), we suggest that this construction also contains an empty category. I will argue that

¹ VP Ellipsis in (1) and pseudo-gapping in (2) are discussed in Merchant (2008); gapping in (3) is

English tag questions involve VP deletion, while Chinese tag questions possess an empty CP constituent.

English Ellipsis Types

- (1) John read a book, and Mary did [e], too. (VP ellipsis)
- (2) John read more books than Mary did [e] magazines. (Pseudo-gapping)
- (3) John read a book and Mary [e] a magazine. (Gapping)
- (4) John read a book but I don't know which [e]. (Sluicing)
- (5) The book is Mary's [e]. (NP/N' deletion)
- (6) Mary is good at tennis, isn't she [e]? (Tag Question)



The Chinese cognates of these English examples, which likewise involve phrasal empty elements, are shown in (7)-(12), below. Just like some discussions on gapping in English (cf. also Lobeck 1995), gapping in Chinese is either non-existent (Tsai 1994) or is not derived by what we called “ellipsis” or “phrasal empty categories”. We will not deal with the gapping phenomena in this dissertation. In the following chapters, I will explore in detail the structure and properties of NP ellipsis (Chapter 2), VP ellipsis (in Chapter 3), IP-related ellipsis (Chapter 4), and finally CP-elliptical form (in Chapter 5).

Chinese Phrasal Empty Categories:

(7) Zhe shi [Zhangsan de [shu]], na shi [Lisi de [e]] [NP/N'deletion]

this be Zhangsan DE book that be Lisi DE

‘This is Zhangsan’s book, and that one is Lisi’s’

這是張三的書，那是[李四的[e]]

(8) Zhangsan qu-le taibei, Lisi ye shi [e] [VP Ellipsis -- *shi*-support]

Zhangsan go-Asp Taipei Lisi also be

‘Zhangsan went to Taipei, and so did Lisi’

張三去了台北，李四也是[e]



(9) Zhangsan ken qu taibei, Lisi ye ken [e] [VP Ellipsis --Modal]

Zhangsan willing.to go Taipei Lisi also willing.to

‘Zhangsan is willing to go to Taipei, and so is Lisi’

張三肯去台北，李四也肯[e]

(10) Zhangsan kanjian-le ziji de mama, Lisi meiyou [e] [VP Ellipsis --NEG]

Zhangsan look-Asp self DE mother Lisi not

‘Zhangsan saw his mother, and so does Lisi’

張三看見了自己的媽媽，李四沒有[e]

(11) Zhangsan chi-le san-wan fan, Lisi [e] liang-wan. [Quasi-Gapping]

Zhangsan eat-Asp three-bowl rice Lisi two-bowl

‘Zhangsan ate three bowl of rice, and Lisi ate two bowl of rice’

張三吃了三碗飯，李四[e]兩碗

(12) Ni Shang-ci na-le wode shu, dui-ma? / dui-bu-dui? [CP – Tag Question]

you last.time take-Asp my book right-Prt / right-not-right

‘Last time, you took my book, right?’

你上次拿了我的書，對嗎？ / 對不對？

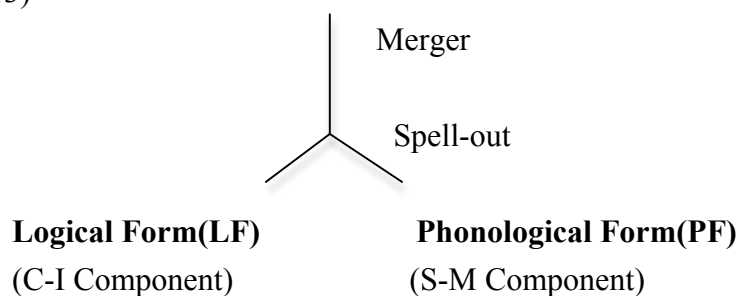
Theoretically, two approaches -- LF Copy² (Lobeck 1995; Sandra Chung, William Ladusaw, and James McCloskey 1995³) and PF deletion (Merchant 2001) deal with empty phrasal categories like those in (1)-(6). These two approaches treat such constructions very differently. The LF copy analyses claim that the semantic component of the grammar is responsible for computing these empty parts, while the

² It is also called “the interpretation approach”.

³ Henceforth cited as CLM (1995).

PF analyses attributes the presence of empty categories to the action of phonological rules. Early arguments that ellipsis is derived by deletion under identity hinged on the evidence that an ellipsis site must, at some level of the derivation, have internal syntactic structure. (Jackendoff 1971, 1977; Wasow 1972; Merchant 2001). On the other hand, even-earlier interpretation approaches, such as Akmajian's (1968) 'non-expansion hypothesis', suggested that null anaphors are base-generated as empty, unexpanded non-terminals. Lobeck (1995) follows this insight. She assumes that the empty phrasal constituent is a *pro*-form which replaces some part of the construction in the first conjunct, and she further assumes that such *pro*-forms associate with their antecedents through rules of interpretation. Recently, several scholars have put forth the possibility that empty *pro*-forms are merged into the derivation before the Spell-Out point (Li 2007; Aelbrecht 2009; Craenenbroeck 2007).

(13)



In this section, I have presented some background information which I hope will elucidate the examination of the properties of Chinese empty categories in the main

body of this thesis. The next section of this introductory chapter provides my thesis statement and discusses the scope of the current research.

0.2 Thesis Statement

In this dissertation, we intend to explore the characteristics of two types of phrasal empty categories in Mandarin Chinese. We propose in this thesis that DP and CP have *pro*-forms, while other empty categories are the result of PF-deletion in Chinese. The basic reasoning is that propositions and individuals are more likely to have the referential properties that are realized in natural languages as *pro*-forms. An action (verbal) or a property (adjectival), on the other hand, is not so much referential, and thus must be derived by deletion.

In this study, I seek answers to the following questions with a view to developing a deeper understanding of the empty categories in natural languages.

1. How many constructions involve phrasal empty categories in Chinese?

I propose that, in addition to the empty phrasal categories proposed in Wu (2002), Wang (2002) and Wei (2004)'s analyses of VPE, gapping, and sluicing, respectively, the constructions involving empty phrasal categories in Chinese also include: the tag

question construction, ellipsis of the light verb complement, and NP deletion.

2. What is the constituency (or size) of the deletion domain? Is “a complement of a phase” the deletion domain in Chinese? Is the operation contained in the domain licensed by the phase head?

One goal of this study is to discuss the domain of deletion phenomena in Chinese. Following the phase theory of Chomsky (2001a; 2001b; 2005), I argue that the syntactic operation targets the domains (complements) of phase heads, which are proposed to consist of IP, VP and NP.

3. What is the nature of the phrasal empty categories? Deletion (Merchant 2001)? *pro*-Forms (Lobeck 1995)? LF copy onto syntactically null constituents (CLM 1995)? Or other possibilities?

I will try to examine a hypothesis that only DP and CP constituents are possible candidates for the derivation of *pro*-forms (in that they are the only phrasal categories that may contain [+anaphoric] and [-referential] features), while other constructions involve PF ellipsis or LF copy. We hope to find some objective tests to analyze empty phrasal linguistic elements. For example, if the empty “*pro-form*” analysis is suggested for a certain phrasal construction, we may expect the following

characteristics:

[a] The elliptical phrasal element must have NO internal syntactic structure.

Extraction is NOT allowed to operate on any constituent inside of this phrasal empty category.

[b] It must be governed by the same syntactic constraints which confine other *pro*-forms, such as pronouns. The empty part must be licensed under agreement (Aelbrecht 2009), head government (Lobeck 1995), or complementation (Li 2007).

[c] If the empty phrasal part is a *pro*-Form, this language is more likely to have an overt counterpart.



On the other hand, if this construction is derived by PF deletion:

[a] The empty part must possess enough syntactic complexity to host the trace of a moving entity. Extraction is possible for an element inside of this type of phrasal empty category.

[b] The empty phrasal category needs a linguistic, but not discourse, antecedent.

[c] The mechanism for interpretation must be explained.

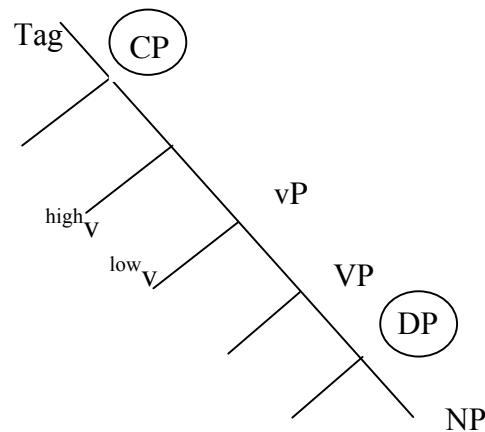
0.3 Organization

This thesis contains six chapters illustrating the nature of Empty Phrasal Categories. Chapter 0 addresses the question, proposes the thesis statement, and introduces the three questions that are asked in the study. Chapter 1 is a brief survey of related literature. Chapter 2 discusses empty phrasal categories within the DP domain. Chapter 3 explores the domain of VP, and the empty phrasal elements of approximately the size of VP size. Chapter 4 provides two structural analyses for sluicing-like constructions in Chinese. Chapter 5 is mainly about the Chinese tag question. It is proposed that the tag questions involve an empty CP element. Chapter 6 discusses the any relevant constructions not addressed in the previous chapters, and explores some theoretical implications of our thesis statement.

0.4 Methodology and Perspective

This dissertation follows the Principle -and -Parameter Approach to generative grammar, which aims to capture the underlying mechanisms of natural language. Hopefully this dissertation will contribute to our understanding of the typological parameters of languages and to the development of the linguistic theory.

(14)



With the existence of empty phrasal categories, an accurate big picture of the grammar requires:

1. Projection principle: the concept of projection of a head, which distinguishes CP and DP from other phrasal categories, must be in the big picture. Projection principle has been recently re-defined as “labeling” (Cecchetto & Donati 2010; Chomsky 2010 class lecture). The constituency type is labeled by the head of a chunk, which is determined by searching inside the constituent for a head.
2. Hierarchical height: we need hierarchical structure in order to be able to realize the ordering of constituents (Richard 2010). Hierarchical height might also loosely related to size of the constructions.
3. Grammatical function: we need to introduce grammatical functions, such as predication (Huang 2010 class lecture), at least on the IP level (Wei 2004). We

also need predication for distinction of control/raising mechanism as well.

4. Linearization: Linearization with respect to the c-commanding relation, as defined by (Kayne 1994 or Moro 2000), is essential, too.
5. Rizzi's notion of periphery layers (Rizzi 2004) is important to my analysis, since it is used in the analysis of tag questions.



CHAPTER 1. LITERATURE REVIEW

1.1 The Phrasal Empty Categories: *pro*-Form or Deletion?

1.2 Various Nominal *pro*-Forms

1.2.1 A-bar Bound Variable

1.2.2 Free Empty Category

1.2.3 True Empty Category (TEC)

1.3 non-NP *pro*-Forms

1.3.1 Lobeck (1995)

1.4 Deletion

1.4.1 Merchant (2001)

1.4.2 Aelbrecht (2009)

1.4.3 Saito, Lin, and Murasugi (2008)

1.1 The Phrasal Empty Categories: *pro*-Form or Deletion?

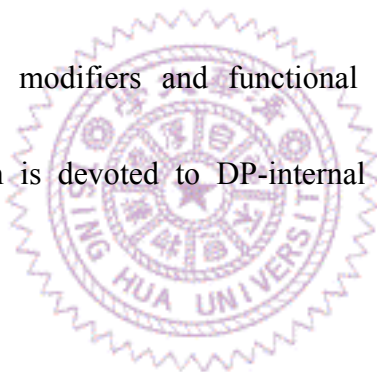
For each different type of syntactic constituent, there are debates on the nature and the formation of its respective empty category. With the development of the syntactic mechanism, we are gaining an increasingly concrete understanding about the real insight of different hypotheses.

An example of a typical NP deletion is shown in (15). Recall that for Jackendoff (1972), ellipsis within noun phrases involves an empty PRO, which is arguably an early precursor of *pro*. Wasow (1972) also suggests that elliptic constituents are base-generated empty *pro*-forms. On the other hand, Saito & Murasugi (2004) and

Saito, Lin & Murasugi (2008) analyze such elliptic constituents as PF phenomena in Asian languages.

(15) This book is Mary's [e].

In Chinese, there is no overt nominal-size *pro*-form which serves as the equivalent of “one” in English. The absence of such a form may lead us to postulate a deletion account for the empty category inside DP construction. Fortunately, Chinese possesses rich prenominal modifiers and functional projections. Therefore, one chapter of this dissertation is devoted to DP-internal empty categories following modifiers.



As for VP category, Zagana (1988) is first to analyze the empty VP in ellipsis constructions as typologically *pro*, constrained by the principles of proper government and the Empty Category Principle (or ECP). She argues that empty VP satisfies the ECP when properly governed by INFL, and that INFL is only a proper governor when specified for rich agreement features (in this case, Tense features). Lobeck (1995)'s analysis captures the earlier generalization that ellipses, like pronouns, seem exempt from Ross's Island Constraints, but are still subject to Principle B of the Binding

Theory in the Principle and Parameters framework. Chao (1987) also argues that *pro* in VP ellipsis and sluicing constructions is constrained by the ECP. However, Chinese has four types of VP-level ellipsis (Wu 2002), for which a unified analysis is still needed. In chapter three of this study, I will expand on this issue and focus on an analysis involving light-verb-related VPE.

The traditional type of IP ellipsis discussed in the literature is so-called sluicing in English (16). For proponents of the PF deletion analysis (Ross 1969; Merchant 1999; 2001), sluicing involves movement of a *wh*-phrase out of a sentential constituent (S, IP, or TP), followed by deletion of that node. The most important supporting evidence for such a movement approach comes from connectivity effects: (i) case-matching; (ii) preposition-stranding parallelisms; (iii) binding phenomena. An alternative analysis of sluicing, which posits no internal structure to the ellipsis site, is represented by Lobeck (1995) and CLM (1995). For these linguists, ellipses consist of a null category drawn from the lexicon which is replaced after S-structure/ Spell-Out by a phrase marker copied from the antecedent Logical Form.

(16) Somebody called Mary, but I don't know [_{CP} who [_{IP} ~~called Mary~~].

It is still a matter of debate whether Chinese has ‘real’ sluicing (see Wang 2002; Wei 2004, and Chiu 2007). Some scholars argue that Chinese lacks IP empty categories, and the constructions which seem on the surface to be related to sluicing can be accounted for by the syntactic function of predication. We will address this issue in chapter 4 of this thesis.

In the latter part of this thesis, we will focus attention on ellipsis within the category of CP, which has not been much mentioned in the literature. On the basis of certain theory-internal considerations, we propose the existence of an empty CP. And Empirical data from Chinese support such a proposal. In chapter five, we argue that tag questions in Chinese, but not in English, serve to provide a confirmation or inquiry about a proposition; such items are realized in natural language as empty CP *pro*-Forms.

1.2 Various Nominal *pro*-Forms

It is well known that Chinese is a language rich in *pro*-Forms. In this section, we will review three types of empty categories proposed in this field, within a particular focus on Chinese.

1.2.1 A-bar Bound Variable

Huang (1984) adopts a hot-cool division of language to capture the distribution of zero pronouns. According to this theory, “*pro*-drop” or “cool” language like Italian and Spanish allow pronoun to drop from the subject position of a tensed clause because there is a rich system of verb-subject agreement in these languages. The agreement system of “hot” languages like English and French is degenerate, so a zero subject is only allowed in infinitival clauses. Neither of these language types exhibits verb-object agreements, so no object drop is allowed in them.

(17) Zhangsan_i shuo [*e_i* bu renshi Lisi].

Zhangsan say not know Lisi

‘Zhangsan said that he did not know Lisi’

張三_i說[*e_i*不認識李四]

(18) a. [_{Top} *e_j*] Zhangsan_i shuo [Lisi bu renshi *e_{*i/j}*].

Zhangsan say Lisi not know

‘Zhangsan said that Lisi didn’t know [him]’

[_{Top} *e_j*] 張三說李四不認識 *e_{*i/j}*

b. neige ren_j , Zhangsan_i xiwang [Lisi keyi kanjian $e_{*i/j}$]

that man Zhangsan hope Lisi can see

‘That man, Zhangsan hopes that Lisi will be able to see’

那個人_j , 張三希望李四可以看見 $e_{*i/j}$

However, in languages like Japanese, Chinese, and Korean, such agreement criteria run into problems. For example, Huang (1984) finds that an embedded object in Chinese cannot be bound by a matrix subject. Its referent must be a discourse topic, i.e., someone or something that a given discourse is about, as the contrast in (17) and (18) shows. The Empty Nominal in (18) is better analyzed as an A-bar bound variable, while the nominal in (17) is an A-bound *Pro*.

1.2.2 Free Empty Category

Another type of A-bound empty nominal (19)(20) is proposed by Xu (1986) to argue against the claim that object nominal are variables (Huang 1984). In the following examples, the empty nominal in the embedded object has the same referent as the matrix subject.

(19)Haizi_i zhidao mama yao zeguai [e]_i le

kid know mother want blame Prt

‘The kid_i knows that mother is going to blame him_i’

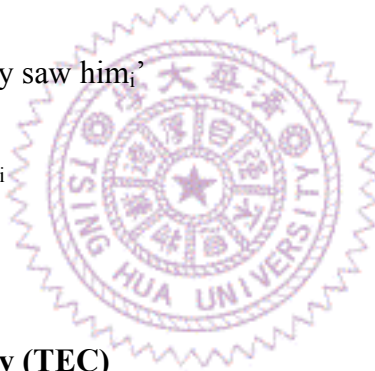
孩子_i 知道媽媽要處罰[e]_i 了

(20)Xiaotou_i yiwei meiren kanjian [e]_i

thief think nobody see

‘The thief_i thinks nobody saw him_i’

小偷_i 以為沒人看見[e]_i



1.2.3 True Empty Category (TEC)

Li (2007; 2008) rules out all possible identities for an empty nominal (as a variable, or a PRO/Pro), and further proposes the existence of TEC (True Empty Category). The so-called true empty category (TEP) is just an empty position devoid of any material, which comes into existence only to fulfill a subcategorization requirement. It is, therefore, a last resort. Internally, it acquires no specific morpho-syntactic properties and is not a copy of a lexical item in the numeration. The interpretation of TEC seems to follow some kind of discourse prominence principle.

1.3 non-NP *pro*-Forms

1.3.1 Lobeck (1995)

Lobeck (1995) distinguishes two principles concerning phrasal empty categories: [1]

licensing condition: this condition identifies the existence of a phrasal *pro*-form to be governed by a functional head. And only being governed by a functional head that would make the empty element legible.

(21) Licensing and Identification of *pro*:

An empty, non-arbitrary pronominal must be properly head-governed, and governed by an X⁰ specified for strong agreement.

[2] *Identification condition*: it is through reconstruction that the referential content of a phrasal empty category is recovered. According to Lobeck (1995), all empty phrasal categories are *pro*-forms of some sort, and are subject to ECP principle.⁴

1.4 Deletion

1.4.1 Merchant (2001)

Merchant (2001) provides a thorough, cross-linguistic examination of sluicing in his

⁴ The Empty Category Principle: α [e] must be properly governed

dissertation. Example (16) is well-accounted for by his idea that there are two components to the derivation. One component is a movement rule that extracts a *wh*-phrase from an IP in interrogative structures, and the other is an operation fed by this movement which causes deletion of the remaining IP.

Merchant (2001) also defines a novel focus condition on the ellipsis site building in a two-way implicational relation, which allows us to abandon the additional structural isomorphism condition.

1.4.2 Aelbrecht (2009)

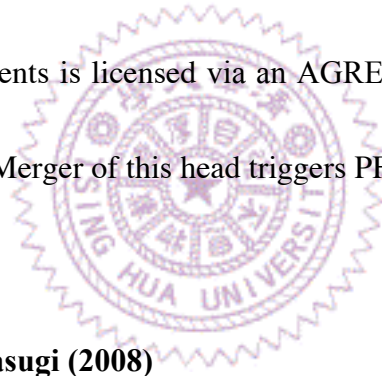
Building on the PF deletion analysis (cf also Merchant 2001), Aelbrecht (2009) introduces five modal verbs and their ellipsis patterns in Dutch. He argues first that, except for the dynamic modal *willen* ‘want’, both epistemic and deontic modals behave in line with raising verbs in Dutch. Deontic modals are not control verbs in this respect. They are neither heads of INFL nor auxiliaries; rather, according to Aelbrecht, they are Mod/V heads. The author further argues that, the complement of a modal contains a vP layer and tense, but is not a CP constituent.

The thesis also demonstrates the following five properties of MCE (Modal

Complement Ellipsis): [i] MCE only occurs with root modals, not with epistemic ones; [ii] MCE deletes more than the infinitival head, and is argued to be a TP constituent; [iii] it is selective in what can be extracted out of the ellipsis site: subject can undergo extraction, while objects and adjuncts cannot; [iv] MCE does not impose restrictions on the position of the antecedent; [v] MCE allows a certain degree of form mismatch between the antecedent and the ellipsis site.

The author also provides an account of ellipsis licensing which involves PF-deletion.

Ellipsis of modal complements is licensed via an AGREE relation with the licensing head (here, a modal verb). Merger of this head triggers PF-deletion of its complement.



1.4.3 Saito, Lin, and Murasugi (2008)

In this paper, the authors compare Japanese and Chinese N' ellipsis and argue on the basis of the evidence that the two language have very distinct nominal structures.

They follow Simpson (2003) in suggesting that *de* in Chinese is a D head, and that classifiers head separate functional projection within DP. Japanese, on the other hand, has *no* as a contextual Case marker, and its classifier phrases are adjuncts modifying nominal projections.

What is important about this paper is the authors' proposed licensing condition on NP ellipsis. It is argued that the licensing condition to ellipsis is defined under a condition that Spec of a functional projection must be filled with an XP.



CHAPTER 2. DP-INTERNAL EMPTY CATEGORY

- 2.1 Introduction
- 2.2 Setting the Stage
 - 2.2.1 The R-Expression Properties (of Reference Denoting)
 - 2.2.2 Deletion or Pronominals
 - 2.2.3 Complexity of the Chinese DP
- 2.3 The Deleted Constituent
 - 2.3.1 Chinese DNC Order & the Licensing Condition
 - 2.3.1.1 Restrictions on the Position of Antecedents
 - 2.3.2 Three Kinds of *de* in Nominals and Deletion Domain
 - 2.3.2.1 One *de* Modification
 - 2.3.2.2 Stacking: Two *de* Modifications
 - 2.3.3 To Solve the Problem
- 2.4 Antecedent
- 2.5 Concluding Remarks

The aim of this chapter is to examine NP ellipsis – which is to say, the presence of the empty categories inside the Chinese DP domain. We will make two major claims in the context of NP ellipsis. First, equational sentence⁵ containing a “Modifier + Empty-Modified-NP” object can only result from PF ellipsis, and can never be derived from a base-generated empty category in Mandarin Chinese. Second, given the rich functional elements and modifications in the structure of the Chinese DP, we show that it is possible to ascertain the domain over which NP-sized deletion happens.

⁵ This is a term for a particular type of copular sentences.

2.1 Introduction

It has been strongly argued in the literature that empty subject and object nominals are analyzed as *pro*-form and A-bar-bound variable in Chinese respectively (Huang 1984). The biggest insight of this argument is that, unlike anaphors, empty nominals in object position display many properties of R-expressions. Following this observation, we further propose that PF deletion may apply in the domain of DP, especially to derive DP-internal object empty elements. Similar to Japanese *no*- (Kami 1983; Saito et al. 2008), the Chinese pre-nominal morpheme *de* introduces modifiers of at least three kinds – possessor, relative clause, and adjectival modifier. Multiple modifications are possible among these three kinds. As reported in much literature (Larson & Takahashi 2002, Larson 2007; Hsieh 2005; Lin 2008), *i*-level and *s*-level modifier asymmetry must be observed. Stage-level modifiers must precede individual-level modifiers and are placed further from the nominal in Chinese. This study will explore how functional projections license ellipsis and identify the constituent that is deleted within DP.

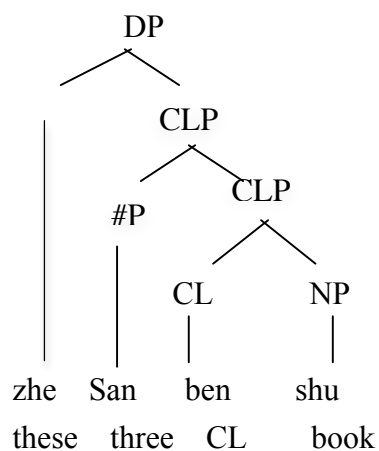
In section 2.2, we will provide a brief background about the nature of Chinese nominals, and discuss why Chinese nominal make a good target for analyzing

DP-internal deletion. Section 2.3 presents my main analysis of the deletion mechanism. 2.3.1 discusses the DNC⁶-ordered functional elements preceding the stem noun, and explores ways in which it might be related to the licensing condition on deletion phenomena. 2.3.2 discusses three kinds of single *de* modifiers, multiple *de* modification, and the means of observing the deletion domain. Section 2.4 discusses the antecedent requirement of NP deletion. Section 2.5 concludes this article with some insights into Chinese DP structure and theories of deletion phenomena.

2.2 Setting the Stage

According to Huang (2010), NP ellipsis can only occur when CL is the head of a certain projection inside the Chinese nominal phrase. The internal structure of the Chinese DP, therefore, is analyzed as follows:

(22)



⁶ The DNC order is an abbreviation for the pre-nominal elements in Chinese including: Demonstrative, Numeral, and Classifier respectively.

2.2.1 The R-Expression Properties (of Reference Denoting)

The issue of empty nominals has long been of interest to theoretical linguists. Huang (1984; 1987) convincingly shows that Chinese empty NPs in matrix clauses are *pro*-forms, while empty embedded objects are variables bound by discourse topics. This means that the interpretation of an object is deictically decided rather than A(argument)-bound. Huang's examples were given as follows. An empty nominal in the embedded subject position is A-bound, as in (23), and its referent is co-indexed with the subject of the matrix clause. The empty object position in (24)a, on the other hand, is A-bar-bound. Its referent can only be someone in the discourse. The denotation of this empty object is obviously distinct from the object containing an overtly realized pronoun in (24)b.

(23) a. Zhangsan_i shuo [[e_i] bu-renshi Lisi]

Zhangsan say not-know Lisi

‘Zhangsan said that he does not know Lisi’

張三_i 說 [e_i 不認識李四]

b. Zhangsan_i shuo [[e_i] yao qu taibei]

Zhangsan say want go Taipei

‘Zhangsan said that he wants to go to Taipei’

張三_i說 [e_i 要去台北]

(24) a. [Zhangsan_i shuo [Lisi_j bu renshi [e_{i/*j/k}]]]

Zhangsan say Lisi not know

‘Zhangsan said that Lisi doesn’t know him’

張三_i說[李四不認識 e_{i/*j/k}]

b. [Zhangsan_i shuo [Lisi_j bu renshi ta_{i/*j/k}]]

Zhangsan say Lisi not know him/he

‘Zhangsan said that Lisi doesn’t know him’

張三_i說李四_j不認識他_{i/*j/k}

However, determining the nature of an empty nominal is not always so simple. It has often been naturally assumed that covert nominal-elements can be categorized just like their overt counterparts, and defined by the two features mentioned in the literature of Binding (Chomsky 1982:79-89)⁷. But in addition to variables, traces, and

⁷ NP types could be described by two nominal-related features: [Anaphor] and [Pronominal].
[+Anaphor, - Pronominal] refer to Reciprocals and reflexives, which must be bound within its GC.
[- Anaphor, + Pronominal] refer to Pronouns, which must be free within the GC.
[- Anaphor, - Pronominal] refer to R-expression.
[+ Anaphor, + Pronominal] refer to PRO which is not governed and has no GC at all.

pro-forms, we now know that PF-deleted constituents are also a separate kind of empty category. With the advent an increasing number of studies focusing on deletion / ellipsis (Merchant 1999; Lasnik 2006; among others) and the internal structure of DP (Abney 1987 among others), it is now possible to explore this proposal. In the following section, we will demonstrate that a deletion theory of NP ellipsis works, but a theory relying on base-generated empty pronominal elements does not.

2.2.2 Deletion or Pronominals?

The examples in the previous section showed that empty nominals display distinct properties in referential identification. What the following examples in (26)-(28) will show, however, is that syntactic forms should not be treated as been equivalent to semantic reference. Let us start with the simplest sentence. The Chinese possessive nominal is realized as in the example in (25). A morpheme “*de*” introduces the possessor, which modifies the nominal in a possessive DP.

(25) Zhangsan de shu

Zhangsan DE book

‘Zhangsan’s book’

According to Huang (1984; 1987), the empty nominal in subject position is somewhat similar to PRO, or in his terms as Pro. The empty categories in the object position, and the ones described in this article should obtain the qualities of an R-expression.

張三的書

In an equational sentence⁸ (Ross 1983), when the possessor modifies an empty nominal in the object position, the reference of the whole DP may refer back to the subject. In other words, the references of SUB and OBJ are the same; *there is only one book* in (26). And the phonological form of [e_i] is *shu* ‘book’.

(26) [Zhe-ben shu] shi [Zhangsan de [e_i]].

This-CL book be Zhangsan DE

‘This book is Zhangsan’s’

這本書是張三的[e]



In (27), the three empty nominals in two conjuncts all have the same unpronounced PF form (The form deleted in [e_i], [e_j], and [e_k] are all *shu* ‘book’), but the referents are different; altogether there are two books in this proposition. [e_k] is coreferenced with [e_j], but not with [e_i].

Compare this pattern to (28), where the form deleted in both [e₁] and [e₃] is *shu* ‘book’. In [e₂], on the other hand, the deleted form is *na-ben shu* ‘that book’ (NOT

⁸ Here we adopt Ross (1983)’s analysis on *shi...de* construction as equational sentence.

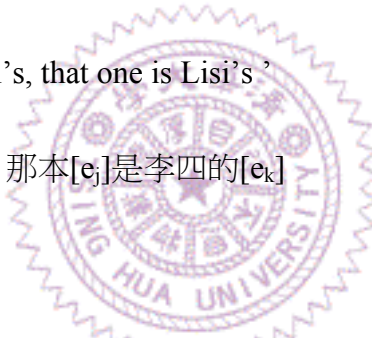
shu ‘book’). However, all three elided forms refer to the same entity, so there is only one book in the interpretation of this proposition. That is to say, $[e_3]$ is coreferenced with $[e_2]$, $[e_1]$, and even the first subject. Suppose reference denoting of one of the cases in (27) and (28) is a result of pronominal binding, there must be something else that governs the surface realization of the other one.

(27) [zhe-ben shu] shi [Zhangsan de $[e_i]$], [na-ben $[e_j]$] shi [Lisi de $[e_k]$].

This-CLbook be Zhangsan DE that-CL be Lisi DE

‘This book is Zhangsan’s, that one is Lisi’s’

這本書是張三的 $[e_i]$, 那本 $[e_j]$ 是李四的 $[e_k]$



(28) [zhe-ben shu] shi [Zhangsan de $[e_1]$], $[e_2]$ bu shi [Lisi de $[e_3]$].

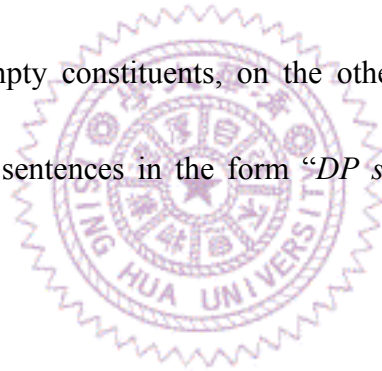
This-CL book be Zhangsan DE not be Lisi DE

‘This book is Zhangsan’s, not Lisi’s’

這本書是張三的 $[e_1]$, $[e_2]$ 不是李四的 $[e_3]$

At this point, it is fair to state two things: First, SEMANTIC REFERENCIALITY of an empty element must be related to the reference of another linguistic entity by some principles. But it is different from the mechanism governing SYNTACTIC FORM

such as the PF forms in (26)-(28). The lack of direct correspondence between semantic reference and syntactic form means that not all the covert nominal forms are anaphorically A-bound, nor are all empty categories analyzable as pronoun-like elements or anaphors (anaphoric, reflexives). Second, empty categories such as those that follow the morpheme *de* in (27)(28) are constituents smaller than DP. Once again, this constituent cannot be an empty pronoun, since a pronoun must be a DP. A possible hypothesis is to assume that phonologically covert forms may be realized by the deletion of certain smaller syntactic categories following the principles of deletion. The referents for these empty constituents, on the other hand, are decided by the construction of equational sentences in the form “*DP shi DP*” or its negation “*DP bushi DP*”.



Furthermore, just as in Japanese, it is possible for the genitive marker and the *pro*-form to be homophonous. It is also possible to find a genuine *pro*-form ‘*no*’ in utterances without any phonological antecedent.⁹ We will come back to a discussion of these matters in section 3.3. Before reviewing the NP/N’ deletion literature in the next section, let us first see why Chinese is a good target for observing deletion

⁹ In some dialects, they are realized in distinct morphological forms (Li 2009). For instance, the pronominal ‘*no*’ is realized as ‘*ga*’ in the Kochi dialect.

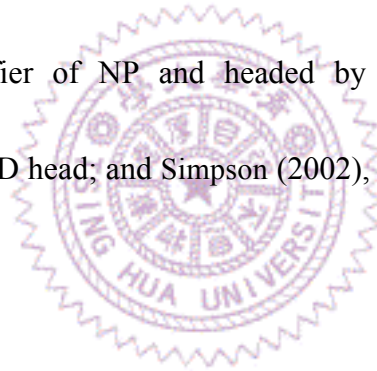
(1) LA-kara-no ga (Kochi dialect)
 LA-from-Gen thing
 ‘the one from Los Angeles’

phenomena within the DP.

2.2.3 Complexity of the Chinese DP

If it is true that deletion occurs within DP, do we have enough material for further examination? Fortunately, the Chinese DP is quite rich in this respect. The rich functional apparatus for the Chinese DP, which adheres to the so-called the DNC¹⁰ order, has been amply discussed in the literature (Huang 1984; Lin 1997; Tang 2005).

This order is demonstrated below in (29). Hsieh (2005) believes that DNC elements are located in the Specifier of NP and headed by CIP; Lin (2008) takes the Demonstrative to be in the D head; and Simpson (2002), Saito, Lin & Murasugi (2008) treat *de* as a D head.



(29) DNC order

Zhe -san- ben shu

Demonstrative Numeral Classifier book

‘these three books’

這三本書

On the other hand, it is well known that Chinese *de* has many complex usages¹¹. If we only consider cases of *de* introducing pre-nominal modifications, there are at least three types – genitive (possessive) *de* (30), relativizing *de* (31), and adjective modifying *de* (32). The different levels of modifications in DP (Lin 2008; Hsieh 2005; Larson 2007) are very much in parallel with the generally-accepted TP structure.

(30) [Zhangsan de] shu

Zhangsan DE book

‘Zhangsan’s book’

張三的書



(31) [zhangsan zuotian mai de] shu

Zhangsan yesterday buy DE book

‘the book Zhangsan bought yesterday’

¹¹ In correspondence to Chinese *de*-, Japanese has two kinds of *no*- as well. *No*- is ambiguous between a genitive marker and pronominal. Kamio (1983) once proposed an observation, which helped to distinguish two kinds of elements. Kamio’s generalization stated that: “The pronoun *no* can occur as a pro-form of concrete nouns, but not as a pro-form of abstract nouns.” And it accounted for the contrast in the following examples taken from Arimoto and Murasugi (2005, p. 174):

- (2) a. [_{NP} [_{RC} Mari -ga motteki -ta] ringo]-wa amari oisiku-nai no dat-ta
 -Nom bring -Past apple -Top too delicious-not NO be-Past
 ‘The apple which Mari brought with her was not too delicious.’
 b. * [_{NP} Taroo -no sinnen] -wa totemo katai no dat-ta
 -Gen conviction -Top very firm NO be-Past
 ‘Taroo’s conviction was very firm.’

張三昨天買的書

(32) [hou hou de] shu

thick thick DE book

‘thick book’

厚厚的書

English attributive modifiers (Larson 1998, Del Gobbo 2005) and Japanese and Korean relatives (Takahashi 1997; Larson 2007) all display an ordering preference as in (33). Chinese shows the same *s*-level and *i*-level asymmetry that is well captured in Hsieh (2005) and Lin (2008)¹². These authors point out that individual-level modifiers must be placed closer to the stem noun than are stage-level modifiers.

The multiple possessive *de* also displays the *i*-level and *s*-level asymmetry. As shown in example (34), the first possessive phrase *Zhangsan de* ‘Zhangsan’s’ is interpreted as *the owner of the book*, while the second possessive phrase *Lisi de* ‘Lisi’s’ is realized as *the author of this book*. The property of being written by a certain person is comparatively more stable a characteristic than the property of being owned by a

¹² Hsieh (2005) and Lin (2008) are different in that the previous account simply treats two modifications as spec of DP and NP respectively; while Lin (2008) suggested that *s*-level and *i*-level relatives can both occur within the domain of NP and DP. The ordering restriction is the result of superiority effect.

person. The different meanings of the two modifiers reflect the phenomenon reported in the papers mentioned above.

(33) Japanese Individual-level & Stage-level RC (from Larson & Takahashi 2002)

a. [Watashi-ga kinoo atta] [tabako-o suu] hito-wa Tanaka-san desu.

[1SG-NOM yesterday met][tobacco-ACC inhale] person-TOP T.-COP

‘The person who smokes who I met yesterday is Miss Tanaka.’

b. ?*[Tabako-o suu][watashi-ga kinoo atta] hito-wa Tanaka-san desu.

(34) Zhe-ben shu shi [[Zhangsan de] [Lisi de] shu]

This-CL book is Zhangsan DE Lisi DE book

Lit: ‘This book is Zhangsan’s and is written by Lisi’

這本書是[張三的][李四的]書

Given the rich internal content of the Chinese DP, in the next section we will see how these nominal phrases are able to tolerate an empty category in a deletion environment. We will also consider the extent to which the current understanding of PF deletion is able to deal with DP-internal deletion with multiple modifications in Mandarin

Chinese.

2.3 The Deleted Constituent

At this point, it is necessary to examine real data of deletion inside DP. A typical example of NP or N' deletion is shown in (35), and two possible accounts of it are given in (35)a and (35)b. Traditionally, the empty element is analyzed as N'-deletion (35)a; Lobeck (1990) and Saito & Murasugi (1990) reanalyzed it as NP deletion (35)b.¹³

(35) This book is Mary's [e].

a. [NP Mary's [_{N'} ~~book~~]]

b. [DP Mary [_D's] [_{NP} ~~book~~]]



2.3.1 Chinese DNC Order & the Licensing Condition

It is naturally assumed in the literature (Lobeck 1990, 1995; Saito & Murasugi 1990; and Saito et al 2008) that deletion must be licensed under certain configurations, which are mostly related to functional heads. Providing a licensing condition for deletion helps us to explain why NP/N', VP, and IP are legitimate targets for PF

¹³ Igloss over the possibility of “one deletion” (Ross 1986) because a nominal is never replaced by any overt pronominal counterpart of English *one* -- in Chinese grammar.

deletion, while other constituents are not. Lobeck (1990) and Saito & Murasugi (1990) propose a licensing condition on the deletion of NP or DP elements. The condition shown in (36) is met if and only if the Spec of the functional projection containing the elided element is filled with an XP.

(36) An XP which is a complement of a functional category can be deleted iff the functional head has a specifier which it agree with. (Saito & Murasugi 1990)

Lobeck (1995) gives a different definition of the licensing condition in her book (37). For her, a possible elision configuration is only defined under head-government. In Lobeck's framework, DET and NUM are two of the functional heads inside DP. I adopt this position¹⁴ for the meantime; until we see what Chinese deletion data can tell us.

(37) An empty, non-arbitrary pronominal must be properly head-governed, and identified by an X-0 specified for strong agreement. (Lobeck 1995:35)

It is known that English numerals and demonstratives are qualified licensors for deletion within DP.

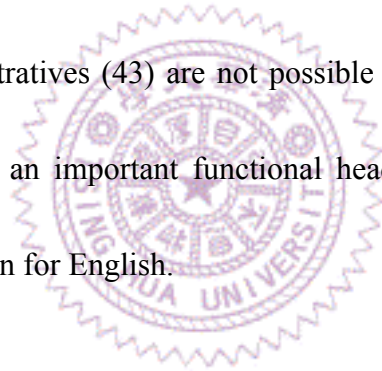
¹⁴ Although the licensing condition in (36) provides a more satisfying treatment of sluicing data, the null hypothesis in analyzing DP is to avoid movement of any modifier phrase if simple licensing is sufficient to account for the surface data.

(38) John bought [_{DP} these [books]], and Mary bought [_{DP} those [_{NP}]].

(39) John bought [_{QP} three [_{NP} books]], and Mary bought [_{QP} five [_{NP} ~~books~~]]

As mentioned above, pre-nominal elements in the Chinese DP display DNC order.

This means that the linear order Demonstrative, Numeral, Classifier is observed unexceptionally in Chinese nominal phrases. Among the elements D, N, C, empty categories are only licensed by classifiers (40) and *xie* (41)—a bound plural marker that obligatorily occurs with the Demonstrative. Chinese differs from English in that numerals (42) and demonstratives (43) are not possible licensors for deletion within DP.¹⁵ It seems that CL is an important functional head in Chinese, in contrast to Lobeck (1995)’s observation for English.



(40) Zhangsan kan-le zhe-san-ben shu, Lisi kan-le na-san-ben [~~shu~~]

Zhangsan read-Prf this-three-CL book, Lisi read-Prf that-three-CL

‘Zhangsan read these three books, Lisi read those three ’

張三看了這三本書，李四看了那三本 [_{NP} 書]

¹⁵ Some might suggest another possible case of DP-internal deletion, as shown in the following example. However, Xu (2003) and Huang (1991) have argued that such examples involve either NOC-like VPE or V-stranding VPE, respectively. Therefore, I will not take this example as involving any kind of DP deletion at this stage.

(3) Zhangsan kan-le zhe-san-ben shu, Lisi ye kan-le [_{DP} ~~na-san-ben shu~~]
Zhangsan read-Asp this-three-CL book, Lisi also read-Asp that-three-CL book
張三看了這三本書，李四也看了 [_{DP} 那三本書]

(41) Zhangsan mai-le zhe-xie shu, Lisi mai-le na-xie [~~shu~~].

Zhangsan buy-Prf this-PL books, Lisi buy-Prf that-PL

‘Zhangsan bought these books, and Lisi bought those’

張三買了這些書，李四買了那些[書]

(42) a. *Zhangsan kan-le zhe-san-ben shu, Lisi kan-le na-wu [~~ben-shu~~]

Zhangsan read-Prf this-three-CL book, Lisi read-Prf that-five

‘Zhangsan read these three books, Lisi read those five.’

*張三看了這三本書，李四看了那五 [~~NP~~ 本書]



b. * Zhangsan kan-le san-ben shu, Lisi kan-le wu [~~ben-shu~~]

Zhangsan read-Prf three-CL book, Lisi read-Prf five

‘Zhangsan read three books, Lisi read five’

*張三看了三本書，李四看了五 [~~NP~~ 本書]

(43) * Zhangsan kan-le zhe-san-ben shu, Lisi ye kan-le na [~~NP-san-ben-shu~~]

Zhangsan read-Asp this-three-CL book, Lisi also read-Asp that

‘Zhansan read these three books, and Lisi read those ones’

*張三看了這三本書，李四也看了那 ~~[NP 三本書]~~

If the licensing condition analysis is on the right track, this provides strong evidence that classifiers must head their own functional projection CIP in Chinese nominals, whether or not we endorse the DP hypothesis (Abney 1987). This could shed light on future analyses of Chinese nominal structure.

2.3.1.1 Restrictions on the Position of the Antecedent

In addition to the obligatory licensor of nominal ellipsis, there are some further properties of the elided nominal and its antecedent which need to be noted here. In this subsection, we give some facts about the distribution of NP antecedents.

First, the licensor of the empty nominal need not to be identical to its antecedent, as shown in (44).

(44) zhangsan mai-le zhe-liang-ben cankaoshu,

Zhangsan buy-Asp this-two-CL reference.book

Lisi mai-le zhe-san-xiang ~~[cankaoshu]~~

Lisi buy-Asp this-three-box reference.book

張三買了這兩本參考書，李四買了這三箱~~[參考書]~~

Second, either the antecedent or the ellipsis site may be embedded (45)(46); when both of them are embedded, the sentence is still grammatical (47).

(45) wo zhidao Zhangsan mai-le zhe-liang-ben shu, Lisi mai-le na-san-ben [e]

I know Zhangsan buy-Asp this-two-CL book Lisi buy-Asp that-three-CL

‘I know that Zhangsan bought these two books, and Lisi bought those three’

我知道[張三買了這兩本書]，李四買了那三本[e]

(46) Zhangsan mai-le zhe-liang-ben shu, wo zhidao [Lisi mai-le na-san-ben [e]]

Zhangsan buy-Asp this-two-CL book I know Lisi buy-Asp that-three-CL

‘Zhangsan bought these two books, and I know that Lisi bought those three [e]

張三買了這兩本書，我知道[李四買了那三本[e]]

(47) wo zhidao Zhangsan mai-le zhe-liang-ben shu,

I know Zhangsan buy-Asp this-two-CL book

dan wo bu-zhidao Lisi mai-le na-san-ben [e].

but I not.know Lisi buy-Asp that-three-CL

‘I know that Zhangsan bought these two books, but I don’t know that Lisi
bought those three books’

我知道張三買了這兩本書，但我不知道李四買了那三本[e]

Third, backward anaphor is not allowed in the domain of NP ellipsis. An antecedent is
not allowed to appear after the empty NP.

(48) *Zhangsan mai-le zhe-liang-ben [e], Lisi mai-le na-san-ben shu

Zhangsan buy-Asp this-two-CL Lisi buy-Asp that-three book

‘Zhangsan bought these two books, and Lisi bought those three’

*張三買了這兩本[e]，李四買了那三本書

Finally, the relationship between the antecedent and the elided nominal can endure
across utterances (49).

(49) A: Zhangsan mai-le zhe-liang ben cankaoshu.

Zhangsan buy-Asp this-two-CL reference

‘Zhangsan bought these two reference book’

張三買了這兩本參考書

B : Lisi ye mai-le na-liang ben [e]

Lisi also buy-Asp that-two-CL

‘Lisi also bought those two’

李四也買了那兩本[e]

2.3.2 Three Kinds of *de* in Nominals and Deletion Domain

As mentioned in the previous section, multiple *de* modification is possible. This section illustrates the way in which an empty category (or PF deletion) is licensed under the complex *de*-modification of Chinese DP. Unfolding the different layers of modification between N and DP domain can tell us much about the deletion domain of this operation. One dilemma concerning the size of deletion domain within DP will be discussed in 2.3.2.2. It is suggested that focus fronting must apply on the modifier phrase in order for the deletion to operate on a single constituent.

2.3.2.1 One *de* Modification

Chinese *de* introduces possessive modifiers (30), relative clauses (31), and adjectival modifiers (32). Among the three kinds of *de*- modification, all of them (50)-(53) can license an empty nominal in object position (a sentences), subject position (b

sentences), and in the comparative construction (c sentences) as illustrated in the following examples. From now on, I will refer to such empty positions as deleted nominals.¹⁶

(50) Genitive *de*

- a Zhe-ben shu shi [Zhangsan de [shu]], na-ben shu shi [Lisi de [e]]

This-CL book be Zhangsan DE book that-CL book be Lisi DE

‘This book is Zhangsan’s book, and that book is Lisi’s’

這本書是張三的[書]，那本書是李四的[e]

- b [Zhangsan de [shu]] shi yi-ben jiaokeshu, [Lisi de [e]] shi yi-ben cankaoshu

Zhangsan DE book be one-CL textbook, Lisi DE be one-CL reference.book

‘Zhangsan’s book is a textbook; Lisi’s book is a reference book’

張三的[書]是一本教科書，李四的[e]是一本參考書

¹⁶ Note that I am not ruling out the possibility that *pro*-forms for other NP positions may exist as well, as exemplified in (4-5) below. In these examples the contextual topic is necessary to provide a referent for LF realization. But what is important for our theoretical consideration is the existence of PF empty NPs.

- (4) Zhangsan de [e] henhou, *(dan) zhe shi Wangwu de [e]
Zhangsan DE very.good but this SHI Wangwu DE
Lit. ‘Zhangsan’s is good, but this is Wangwu’s’
張三的[e]很好，*(但)這是王五的[e]。

- (5) Zhangsan de [e] henhou, Lisi de [e] buxing
Zhangsan DE very.good Lisi DE not.able
Lit. ‘Zhangsan’s is good, but Lisi’s is not’
張三的[e]很好，李四的[e]不行

c [Zhangsan de [shu]] bi [Lisi de [e]] gui

Zhangsan DE book than Lisi DE expensive

‘Zhangsan’s book is more expensive than Lisi’s’

張三的書比李四的[e]貴

The Chinese relative clause, a head final constituent, also licenses a deleted nominal both in *s*-level (51) and *i*-level (52) relativizations.

(51) *S*-level Relative Clause *de*

a Zhe-ben shu shi [wo zuotian mai de shu¹⁷], na-ben shu shi [ta zuotian mai de [e]]

this-CL book be I yesterday buy DE book, that-CL book be he yesterday buy DE

‘This book is the one I bought yesterday, that book is the one he bought yesterday’

這本書是我昨天買的書，那本是他昨天買的[e]

b [Wo zuotian mai de shu] shi yi-ben jiaokeshu,...

I yesterday buy DE book be one-CL textbook,

‘The book I bought yesterday is a textbook,...

我昨天買的書是一本教科書，

¹⁷ The object nominal *shu* here tends to be empty, though the sentence is just as grammatical when the nominal is overt.

[ta jintian mai de [e]] shi yi-ben cankaoshu

he today buy DE be one-CL reference.book

the one he bought today is a reference book.'

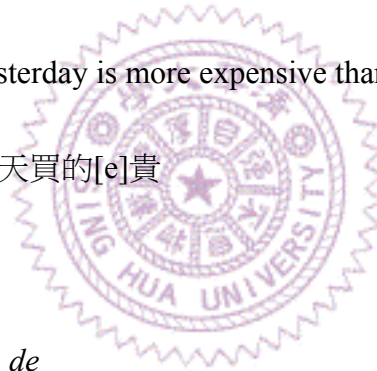
他今天買的[e]是一本參考書

c [[Wo zuotian mai de] shu] bi [ta jintian mai de [e]] guei

I yesterday buy DE book than he today buy DE expensive

'The book I bought yesterday is more expensive than the one he bought today'

我昨天買的書比他今天買的[e]貴



(52) *i*-level Relative Clause *de*

zhe-ben shu shi [[Zhangsan xie de] shu], na-ben shu shi [[Lisi xie de [e]]

this-CL book be Zhangsan write DE book, that-CL book be Lisi write DE

'This book is the one Zhangsan wrote, that book is the one Lisi wrote'

這本書是張三寫的書，那本書是李四寫的[e]

d [[Zhangsan xie de] shu] shi yi-ben jiaokeshu,

Zhangsan write DE book be one-CL textbook

‘The book Zhangsan wrote is a textbook,

張三寫的書是一本教科書，

[Lisi xie de [e]] shi yi-ben cankaoshu

Lisi write DE be one-CL reference.book

The one Lisi wrote is a reference book’

李四寫的[e]是一本參考書

e [[Zhangsan xie de] shu] bi [Lisi xie de [e]] gui

Zhangsan write DE book than Lisi write DE expensive

‘The book Zhangsan wrote is more expensive than the one Lisi wrote.’

張三寫的書比李四寫的[e]貴

Adjective modifiers display the same pattern; the empty categories are allowed in object position (53)a, subject position (53)b and comparative phrases (53)c.

(53) Adjective Modifier *de*

a. Zhe-duo hua shi hong de [hua], na-duo hua shi huang de [e]

This-CL flower be red DE flower, that-CL flower be yellow DE

Lit. ‘This flower is red, and that one is yellow’

這朵花是紅的[花]，那朵花是黃的[e]

b. hong de hua shi meigui-hua, huang de [e] shi juhua

red DE flower be rose yellow DE be chrysanthemum

‘The red flower is a rose, and the yellow one is a chrysanthemum’

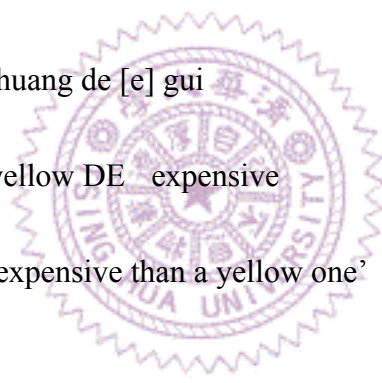
紅的花是玫瑰花，黃的[e]是菊花

c. hong de hua bi huang de [e] gui

red DE flower than yellow DE expensive

‘A red flower is more expensive than a yellow one’

紅的花比黃的[e]貴



2.3.2.2 Stacking: Two *de* Modifications

Things become more complicated when we get into multiple modifications. In Mandarin Chinese, two identical modifiers can precede an empty nominal. For example, the double genitive modifier in (34), repeated in (54), can modify the deleted nominal in (55). As mentioned in section 2.2.3, multiple genitives display the *i*-level / *s*-level asymmetry as well. The first possessor (Zhansan in (54)) is interpreted

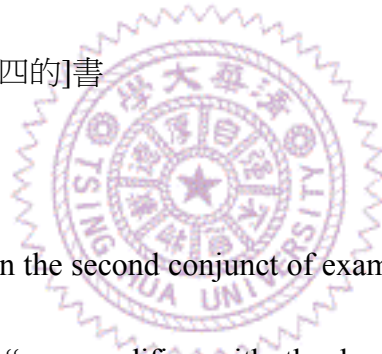
as *the owner of the book* while the second possessor (Lisi in (54)) is semantically realized as *the author of this book*. Being the author of a book is obviously a more *i*-level property than owning a book. Thus the authorship possessive must stand closer to the stem noun.

(54) Zhe-ben shu shi [[Zhangsan de] [Lisi de] shu]

This-CL book be Zhangsan DE Lisi DE book

Lit: ‘This book is Zhangsan’s and is written by Lisi’

這本書是[張三的][李四的]書



What is interesting is that, in the second conjunct of examples (55) and (56), we allow an empty category to be “one modifier with the head noun”. According to the principle of parallelism, the non-pronounced $[e_x]$ in (55) is *[chaomusiji de] shu* ‘Chomsky’s book’, and the native judgment indicates so, too. The $[e_y]$ in (56), on the other hand, could be a little bit problematic. The parallel requirement and semantic interpretation indicate that the deleted constituent in (56) is *[Zhangsan de] shu* ‘Zhangsan’s book’. It is, again, a constituent of “one modifier with the head noun”. But the ordering requirement constraints the deleted modifier *[Zhangsan de]* ‘Zhangsan’s’ to precede the *i*-level modifier *[Lushun de]* ‘Lushun’s’.

(55) Zhe-ben shu shi [Zhangsan de][chaomusiji de] shu, na-ben shu shi[Lisi de]{e*}

This-CL book be Zhangsan DE Chomsky DE book, that-CL book be Lisi DE

Lit. ‘This book is the book owned by Zhangsan and written by Chomsky;

however, that book is the one owned by Lisi and written by Chomsky’

這本書是[張三的][喬姆斯基的]書；那本書是[李四的] [e_x]

(56) Zhe-ben shu shi [[zhangsan de] [yukuangchung¹⁸ de]] shu, ...

This-CL book be ZS DE Yukuangchung DE book

這本書是[張三的][余光中的]書

na-ben shu shi [[Lushun de] [e_y]]

that-CL book be Lushun DE

，那本書是[[魯迅的][e]]

Lit. ‘This book is the book written by Yukuangchung and owned by Zhangsan;

however, that book is the book written by Lushun and owned by Zhangsan’

Here is the problem for our deletion analysis of empty nominal: Analyzing the case in

(56) as ellipsis will lead to the configuration in (57), where the deleted element is not

¹⁸ *Yukuangchung* and *Lushun* are writers of famous Chinese modern literature.

a complete constituent. Unfortunately this cannot be correct, since deletion can ONLY operate on a single, complete syntactic constituent.

(57) Zhe-ben shu shi [[Zhangsan de] [yukuangchung de]] shu, ...

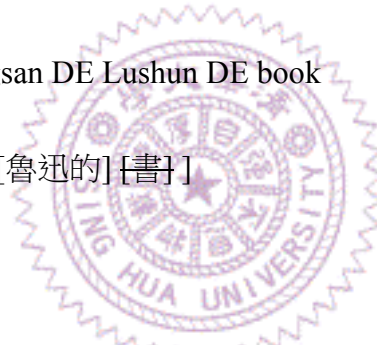
This-CL book be Zhangsan DE Yukuangchung DE book

這本書是[張三的][余光中的]書

na-ben shu shi [~~zhangsan de~~] [Lushun de] ~~shu~~

that-CLbook be Zhangsan DE Lushun DE book

，那本書是[張三的][魯迅的][書]



The stacking of two *i*-level modifiers (58)(59) or two *s*-level (60) modifiers results in the same problem. A modifier could be deleted with the noun (58), but it would lead to a constituency conflict when ellipsis was undertaken in (59) (60)¹⁹.

¹⁹ Actually one *s*-level and one *i*-level modification shows the same pattern. The following is an example:

- (6) Zhangsan shi [zuotian lai Taipei de] [hui shuo jinpianzi de] jiaoshou
 Zhangsan be [yesterday come Taipei DE] [can speak Peking.dialect DE] professor
 ‘Zhangsan is the professor who speaks Peking dialect, and came to Taipei yesterday’
 張三是[昨天來台北的][會說京片子的]教授
- Lisi ze shi [~~zuotian lai Taipei de~~] [buhui shuo jinpianzi de] jiaoshou
 Lisi however be [yesterday come Taipei DE] [cannot speak Peking.dialect DE] professor
 ‘Lisi; however, is the professor who cannot speak Peking dialect, and came to Taipei yesterday’
 李四則是[昨天來台北的][不會說京片子的]教授

(58) Zhangsan shi [hui shuo jingpianzi de] [xihuan guoju de] ren

Zhangsan be [can speak Peiking.dialect DE] [like Chinese-opera DE] person

‘Zhangsan is the person, who can speak Peking dialect and loves Chinese opera’

張三是 [會說京片子的] [喜歡國劇的]人；

Lisi ze shi [buhui shuo jingpianzi de] ~~[xihuan guoju de] ren~~

LS however be [cannot speak Peiking.dialect DE] [like Chinese-opera DE] person

‘Lisi,in contrast, is the one who cannot speak Peking dialect, but loves Chinese opera’

李四則是[不會說京片子的] [喜歡國劇的]人

(59) Zhangsan shi [hui shuo jingpianzi de] [xihuan guoju de] ren

Zhangsan be [can speak Peiking.dialect DE] [like Chinese-opera DE] person

‘Zhangsan is the person who speak Peking dialect and loves Chinese opera’

張三是 [會說京片子的] [喜歡國劇的]人；

Lisi ze shi ~~[hui shuo jingpianzi de]~~ [bu xihuan guoju de] ren

Lisi however be can speak Peiking.dialect DE not like Chinese.opera DE person

Lit: ‘Lisi; on the other hand, is the one who can speak Peking dialect, but does

not love Chinese opera’

李四則是 [~~會說京片子的~~] [~~不喜歡國劇的~~]大

(60) Zhe-shu hua shi [zuotian mai de] [jintian cai kai de] meiguihua,

This-CL flower be [yesterday buy DE] [today then bloom DE] rose

‘This bundle of flowers is the one bought yesterday, and bloomed today’

這束花是[昨天買的][今天才開的]玫瑰花；

Na-shu hua shi [~~zuotian mai de~~] [jintian haimei kai de] ~~meiguihua~~

That-CL flower be [yesterday buy DE] [today not.yet bloom DE] rose

‘that bundle of flower is the one bought yesterday, but not yet bloomed today’

那束花是[昨天買的][今天還沒開的]玫瑰花

2.3.3 To Solve the Problem

To solve the problem discussed in the previous section, we will adopt an analysis involving focus-fronting movement. Under this analysis, a focused modifier can be fronted to a DP-internal focus position, after which the internal NP is deleted. The focus fronting of a modifier is an independent phenomenon in Chinese. As noted in Zhang (1998) and Lin (2008), Chinese attributive adjectives can undergo fronting to precede the DNC sequence; her example is given in (62). This movement is also

observed in other languages such as English (Ntelitheos 2004) and Dutch (Corver & van Koppen 2009), which it also signifies focus movement.²⁰

(61) [_{DP} Lushun de] [_{NP} [~~Zhangsan de~~] [_{t_i}] [shu]]

[_{DP} Lushun DE] [_{NP} [Zhangsan DE] [_{t_i}] [book]]

(62) a. Yi-jien [hong hong de] yifu (Zhang 1998:198)

One-CL [red red DE] clothes

‘a piece of red clothing’

b. [**hong hong de**] yi-jien *t_i* yifu.²¹

[red red DE] one-CL clothes

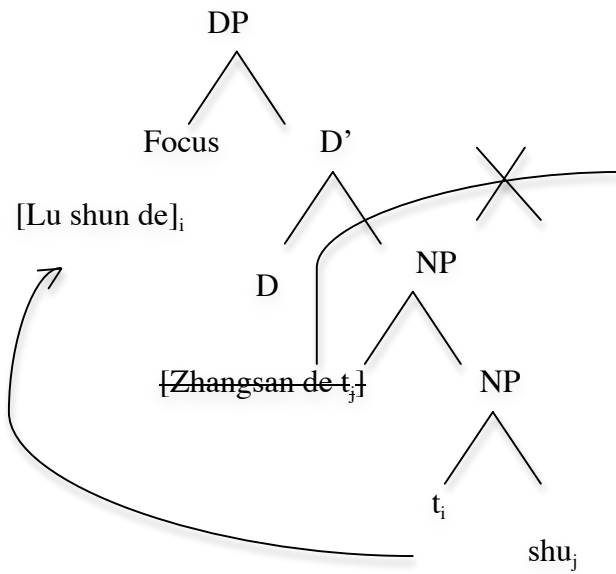
‘a piece of **red** clothing’

Our analysis is illustrated in the following tree diagram (63). Focus fronting of the modifier *Lushun-de* followed by an NP deletion results in the surface form in (61).

²⁰ There is a remaining problem. If the movement account is on the right track, how is it that the fronted element shows no superiority effect? Superiority effect is known to constraint crossing paths of multiple movements of the same type (Rudin 1988; Bruening 2001). Lin (2008) extended it to the prenominal modifiers. We could suggest that either the stacking of the same type of *de*-modifier (9) (10) is equi-distance or the ellipsis repairs superiority violation, so that one modifier could be moved across another *de*-modification.

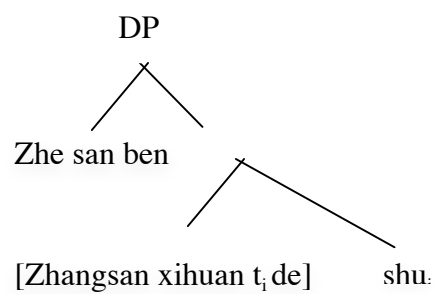
²¹ The boldface is used to indicate the placement of a focal stress.

(63)

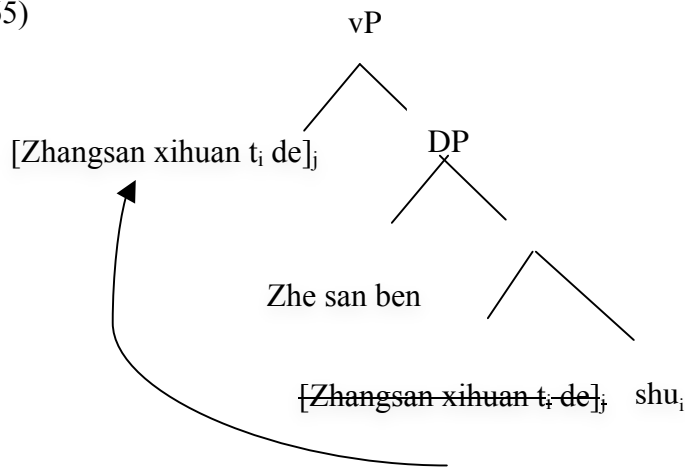


We follow (Aoun & Li 2003) in diagramming the DET-NUM-CL order and the *de* phrase in Chinese in the manner shown in (64) and (65). A modifier within the DP (DNC order) domain is fronted to the periphery of vP, which is also a focused position, to yield the *de*-Modifier + Det-Num-CL order.

(64)



(65)



At this point, it can be seen that a discontinuous empty category, as shown in the diagram (63) above, can only be licensed by a deletion operation, and not by an empty *pro*-form. We can also confirm the status of *de* as the head of its own functional category, in line with the status of the Chinese classifiers mentioned earlier (cf. also Cheng and Sybesma 2009). In the next section, we will show that a DP-internal empty category must have a linguistic antecedent. This is, again, a characteristic of PF deletion phenomena.

2.4 Antecedent

Another property of deletion which must be observed as a diagnostic in our study, is the antecedent requirement. PF operation occurs in the Phonological component of the second conjunct, and must be applied in accordance with the first conjunct (Merchant

1999). The null hypothesis is to assume the strictest syntactic parallel: the antecedent must appear in the same syntactic position in the first conjunct as the null element does in the second conjunct. This strick requirement is observed in Chinese data. The contrast in (66)(67) shows that it is only possible for a deleted nominal to appear when an antecedent is available in the same syntactic location in the first conjunct.

OBJECT CHAIN

(66) *[zhe-san-ben shu] shi [Zhangsan de **[e_i]]**, [na-san-ben shu] shi [Lisi de shu]

This-three-CL book be Zhangsan DE that-three-CL book be Lisi DE book

‘These three books are Zhangsan’s, and those three books are Lisi’s books’

*[這三本書]是[張三的**[e_i]]**, [那三本書]是[李四的書]

(67) Zhe-san-ben shu shi Zhangsan de shu, na-san-ben shu shi Lisi de **[e_i]**

This-three-CL book be Zhansan DE book, that-three-CL book be Lisi DE

‘These three books are Zhangsan’s books, and those three books are Lisi’s’

[這三本書]是[張三的書], [那三本書]是[李四的**[e_i]]**

The same asymmetry is shown for deletions in subject position, as shown in (68)(69).

SUBJECT CHAIN

(68) *zhe-san-ben [e_i] shi Zhangsan de shu, na-san-ben shu shi Lisi de shu

This-three-CL be Zhangsan DE book that-three-CL book be Lisi DE book

‘These three are Zhangsan’s books, and those three books are Lisi’s books’

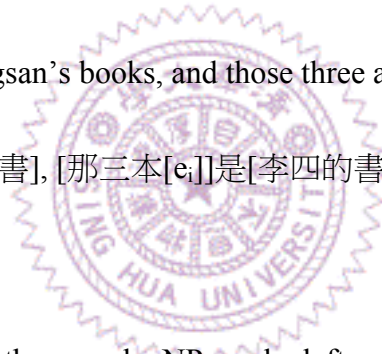
*[這三本[e_i]]是[張三的書], [那三本書]是[李四的書]

(69) zhe-san-ben shu shi Zhangsan de shu, na-san-ben [e_i] shi Lisi de shu

this-three-CL book be Zhangsan DE book, that-three-CL be Lisi DE book

‘These three are Zhangsan’s books, and those three are Lisi’s books’

[這三本書]是[張三的書], [那三本[e_i]]是[李四的書]



However, here we meet another puzzle: NP can be left empty in both subject positions

(70), both object positions (71), or even all of the nominals of the two conjuncts in the

case of (72). It seems that our account in the previous section leaves it unclear how

the object is deleted, since ellipsis in PF is subject to a parallel placement condition.

Our answer to this question is that the cases in (70)-(72) show no deletion mechanism.

The two conjuncts are independent propositions similar to the cases discussed in

Huang (1984; 1987) or shown in (23)(24). I suggest that there is a covert topic in the

matrix CP of the conjoint IP or CP constituent. All the empty nominals are then able

to reference the topic of the relevant sentence.²² However, in the big picture where CP and DP are the only possible *pro*-Forms, these cases are not counter examples. The current chapter only aims to identify cases of ellipsis by deletion, rather than to argue against the existence of *pro*-form nominals.

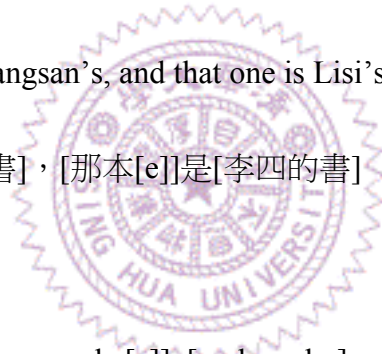
NO ANTECEDENT

(70) [Zhe-ben [e] shi [Zhangsan de shu]], [na-ben [e]] shi [Lisi de shu]

This-CL be Zhangsan DE book that-CL be Lisi DE book

Lit. 'This book is Zhangsan's, and that one is Lisi's'

[這本[e]]是[張三的書], [那本[e]]是[李四的書]



(71) [Zhe-ben shu] shi [Zhangsan de [e]], [na-ben shu] shi [Lisi de [e]]

This-CL book be Zhangsan DE that-CL book be Lisi DE

Lit. 'This book is Zhangsan's, and that one is Lisi's'

[這本書]是[張三的[e]], [那本書]是[李四的[e]]

²² Though in some contexts, the better sentences in Chinese are those with NP ellipsis in the antecedent and the second sentence. In these cases, some context is needed in order to provide a referent for the NP.

(1) Zhangsan de [e] henhao, *(dan) zhe shi Wangwu de [e]
Zhangsan DE very.good but this is Wangwu DE
'Zhangsan's stuff is good, but this is Wangwu's'
張三的[e]很好, *(但)這是王五的[e]。

(2) Zhangsan de [e] henhao, Lisi de [e] buxin
Zhangsan DE very.good Lisi DE not.able
'Zhangsan's stuff is good, but Lisi's is not.'
張三的[e]很好, 李四的[e]不行

(72) [Zhe-san-ben [e] shi [Zhangsan de [e]], [na-ben [e] shi [Lisi de [e]]

This-three-CL be Zhangsan DE that-three be Lisi DE

Lit. 'These three books are Zhangsan's, and those are Lisi's'

[這三本[e]]是[張三的[e]], [那三本[e]]是[李四的[e]]

Finally, following Li (2009), we might say that NP-ellipsis is licensed by a subcategorizing head. 'de' is such a head in Chinese, as are classifiers. The case in (73), on the other hand, is the only case of *pro*-form like elements, because it can appear without an antecedent clause. We have seen that what is called N'-ellipsis in the literature is really NP-ellipsis, because only full maximal NPs can elide.

(73) [In the bookstore, John points at a certain book]

A: zhe-ben [e] hen haokan

This-CL very readable

'This one is very readable'

這本[e]很好看

B: zhe-ben [e] ye bucuo

This-CL also not-wrong

‘This one is also not bad’

這本[e]也不錯

2.5 Concluding Remarks

Drawing on numerous observations from Chinese language data to support our claims, we have argued for a deletion mechanism within the Chinese DP domain. We have shown that there are examples in Mandarin Chinese where an empty place can only result from ellipsis rather than from a base-generated empty category, since the empty place is “discontinuous”. This observation sheds light on three aspects of the deletion phenomenon: [i] Constituent requirement: ellipsis is applicable only to a complete constituent. This condition supports an analysis of modifier movement in DP as focus fronting (Zhang 1998; Lin 2008). [ii] Licensing condition: the empty category or elided form must be licensed by a functional head (Lobeck 1990; Saito et al. 2008). All the DP internal empty elements are licensed by de- or a classifier, both of which are functional heads in the DP domain. [iii] Antecedent requirement: every empty nominal needs an overt antecedent in a strictly parallel syntactic position.

CHAPTER 3. VP ELLIPSIS

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3.2 Literature Review of VP Ellipsis
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3.1 Introduction

The aim of this chapter is to show that [i] VP Ellipsis must be derived by a PF deletion operation in Chinese since only this operation allows extraction (head mvt) out of the deletion domain, and requires a linguistic antecedent. [ii] light-verb-stranding VP ellipsis is attested in Chinese, a well-known light-verb productive language. Empirical evidence comes from two types of light-verb-related ellipsis (Tsai 2009 & Lin 2001). And we suggest that this type of ellipsis in Chinese is similar to what has been described for Farsi (Toorsavandani 2009). [iii] Two types of light verb as well as modals and other adverbials, map onto a deletion domain

between the IP and VP topography. We will suggest that deletion domain is VP.

The analysis presented in this chapter is based on two assumptions: [i] Minimalist T-model – grammar is constructed by two interfaces (namely Sensor-Motor (SM)²³ system and Conceptual-Intellectual (CI) system) with the derivation component²⁴. Empty phrasal constituents, therefore, must be processed in one of the three components -- either in SM, CI, or Merger. [ii] Cartography-- the assumption based on the analytic nature of Chinese, that every projection is realized on the syntactic structure (Tsai 2009; Huang 2009). The basic idea is that almost every functional element in the sentence can develop a maximal projection in Chinese syntactic structure. This property may end up realizing on the different domain of ellipsis (cf. also the Σ P and VP distinction of Soh (2007)), or may help us understand the nature of functional heads on the structure height.

In this chapter, we focus on the two types of light verbs proposed by Lin (2001) and Tsai (2007). We begin by reviewing literature concerning light verbs and VP-related ellipsis in section 3.2. In section 3.3, we introduce and develop two contexts by which NOC-like construction and V-stranding VP ellipsis are differentiated.

Light-verb-stranding VPE is also defined in these contexts, light-verb-stranding VPE

²³ SM is the abbreviation of Sensor-Motor system; CI is the abbreviation of Conceptual-Intellectual system, while the derivation is mainly about the merge operation.

²⁴ The derivation components is what we called “core syntax”. Now it is mainly “merger” which constructs pieces of grammatical constituent via the operation merge.

is defined. In section 3.4, we test high/ low types of light verb ellipsis with the well-known diagnostics for the PF deletion operation. Finally in section 3.5, we examine the domain/ constituency of ellipsis in the VP domain.

3.2 Literature Review of VP Ellipsis

Within the VP domain, there are various elements to be examined: [1] the high/low dichotomy of light verbs: I follow Lin (2001) and Tsai (2007 (24)) in arguing that light verbs can be subdivided into at least two types. For Lin (2001), higher and lower light verbs introduce subject and object arguments respectively. The author postulates that this dichotomy is the reason for the unselectiveness of arguments in Chinese. For Tsai (2007), on the other hand, the two types of light verbs are projections to different structural heights.²⁵ A cartographic approach is adopted in his analysis. [2] Modals: The epistemic and deontic distinction of modals has been much discussed in the literature (Iatridou 2009; Tsai & Portner 2009). It is generally assumed that epistemic modals are higher in the structure than deontic modals. The licensing of VP Ellipsis differs depending on the nature of the relevant modal (Wu 2002). It is observed that deontic modals are licensors for VP Ellipsis while epistemic modals are not (cf. also Aelbrecht 2009). [3] Negation: The Chinese negator *meiyou* can license VPE while *bu*

²⁵ As mentioned in Tsai (2009), different light verbs at different heights in the structure display different syntactic properties as well as different semantic interpretations.

can not. [4] Future modal *hui* ‘will’: The status of the future *hui* ‘will’ is still unknown in Chinese. As a modal verb (Lin & Tang 1995), it patterns with deontic modals in VP ellipsis data, which will be discussed in this chapter. [5] Focus marker *-shi* ‘be’: This is the most typical type of VP Ellipsis noted in the literature (Wu 2002; Wei 2009).

3.2.1 Two Types of Light Verbs and VPE

Tsai (2007) distinguishes two types of light verbs (74) and (76), both of which permit raising, as in (74)(76) b and c. The lexical verbs *qie-de* ‘cut-Res’ and *qie* ‘cut’ are raised to the higher functional head if the head is vacate. The alternants for these sentences are given in (75) and (77). (75) realizes the higher light verb *ran* ‘let’ as introducing the CAUSEE²⁶; (77) realizes the lower light verb *yong* ‘use’ as introducing the theta role of TOOL.

(74) a. na-ba dao qie-de wo zhi maohan.

that-CL knife cut-Res I continuously sweat

'That knife made me cut such that I sweat continuously.'

那把刀切得我直冒汗。

²⁶ The capitalized word is used to indicate theta role.

b. na-ba dao CAUSE wo qie-de zhi maohan.

that-CL knife I cut-Res continuously sweat

'That knife made me cut such that I sweat continuously.'

c. na-ba dao [qie-de]_k+CAUSE wo t_k zhi maohan.

that-CL knife cut-Res I continuously sweat

'That knife made me cut such that I sweat continuously.'

(75) na-ba dao rang wo qie-de zhi maohan.

that-CL knifecause I cut-Res continuously sweat

'That knife made me cut such that I sweat continuously.'

那把刀讓我切得直冒汗。

(76) a. ni qie na-ba dao, wo qie zhe-ba dao.

you cut that-CL knife I cut this-CL knife

'You (will) cut with that knife, and I (will) cut with this knife.'

你切那把刀，我切這把刀。

b. ni USE na-ba dao qie, wo USE zhe-ba dao qie.

you that-CL knife cut I this-CL knife cut.

c. ni qie_i+USE na-ba dao t_i, wo qie_k+USE zhe-ba dao t_k.

you cut that-CL knife I cut this-CL knife

(77) ni yong na-ba dao qie, wo yong zhe-ba dao qie.²⁷

you use that-CL knife cut, I use this-CL knife cut

'You (will) cut with that knife, and I (will) cut with this knife.'

你用那把刀切，我用這把刀切。



Between them, we find that only the lower type of light verb licenses VP ellipsis

(78)(79), whereas the higher alternates do not (80)(81). The elliptical data suggests,

then, that the two types of light verbs are distinct.²⁸

(78) ni qie zhe-ba dao, wo ye qie ~~zhe-ba dao~~

you cut this-CL knife, I also cut this-CL knife

你切這把刀，我也切這把刀

²⁷ The two alternate light verbs are distinguished by their ability to take a thematic object or a clausal complement, and to allow verb copy as a rescue mechanism. They also vary in their behavior in some semantic contexts such as focus interpretation.

²⁸ For Tsai (2009), the inner and outer light verbs are distinguished by their syntactic behavior, such as the ability to take another object (a raised to the outer light verb is capable of licensing another THEME object),

(79) ni yong zhe-ba dao qie, wo ye yong ~~zhe-ba dao qie~~

you use this-CL knife cut, I also use this-CL knife cut

你用這把刀切，我也用這把刀切

(80) *Na-ba dao qie-de wo zhimaohan, zhe-ba dao ye qie-de ~~wo zhimaohan~~

That-CL knife cut-DE I sweat this-CL knife also cut-DE

*那把刀切得我直冒汗，這把刀也切得我直冒汗

(81) *na-ba dao ran wo qie-de zhimaohan, zhe-ba dao ye ran ~~wo qie-de zhimaohan~~.

That-CL knife let I cut-DE sweat this-CL knife also let

*那把刀讓我切得直冒汗，這把刀也讓我切得直冒汗

3.2.2 Four Types of VPE (Wu 2002)

Wu (2002) describes four types of VP ellipsis: Modal ellipsis (82)(83), negation ellipsis (84), *shi*-type ellipsis (85), and verbal type (86) ellipsis. She also notes the asymmetry between deontic/epistemic²⁹ modals in terms of licensing modal

²⁹ Here deontic modality indicates permission, obligation, ability or disposition, while epistemic modality states the possibility or necessity of a proposition. According to this classification, modals like *keyi* 'may' and *hui* 'will, be able to' belong to the former category and modals like *yinggai*

complement ellipsis (82)(83) in Chinese³⁰. I will suggest in the next sections that not all of these four are actual instances of VPE. In particular, I will argue that the *shi*-type of apparent VP ellipsis is more like an IP empty category, and does not pattern together with V/v-stranding VP ellipsis.

(82) Zhangsan hui/keyi shuo fayu, Lisi ye hui/keyi. (deontic)

Zhangsan can speak French Lisi too can

‘Zhangsan can speak French and Lisi can, too.’

張三會/可以說法語，李四也會/可以

(83) *Zhangsan keneng/yinggai qu-le faguo, Lisi ye keneng/yinggai. (epistemic)

Zhangsan likely/possible went France Lisi too likely/possible

‘Zhangsan might have gone to France, and Lisi might too.’

*張三可能/應該去了法國，李四也可能/應該

(84) Zhangsan kanjian-le tade mama, Lisi *(meiyou).

Zhangsan saw his mother Lisi not

‘Zhangsan saw his mother, but Lisi did not.’

‘possible’ *keneng* ‘likely’, and *hui* ‘possible’ belong to the latter type.

³⁰ However, the solution to the asymmetry is not conclusive in Chinese, because (non-)finiteness is not observable from the Chinese verbal element, since Chinese has no inflection (Aelbrecht 2009).

張三看見了他的媽媽，李四*(沒有)

(85) Zhangsan kanjian-le tade mama, Lisi ye shi.

Zhangsan see-Asp his mother Lisi also FOC

‘Zhangsan saw his mother, and did, too’

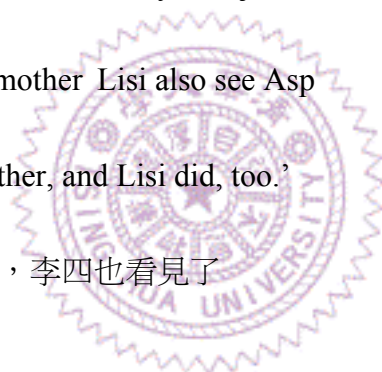
張三看見了他的媽媽，李四也是

(86) Zhangsan kanjian tade mama, Lisi ye kanjian le.

Zhangsan see his mother Lisi also see Asp

‘Zhangsan saw his mother, and Lisi did, too.’

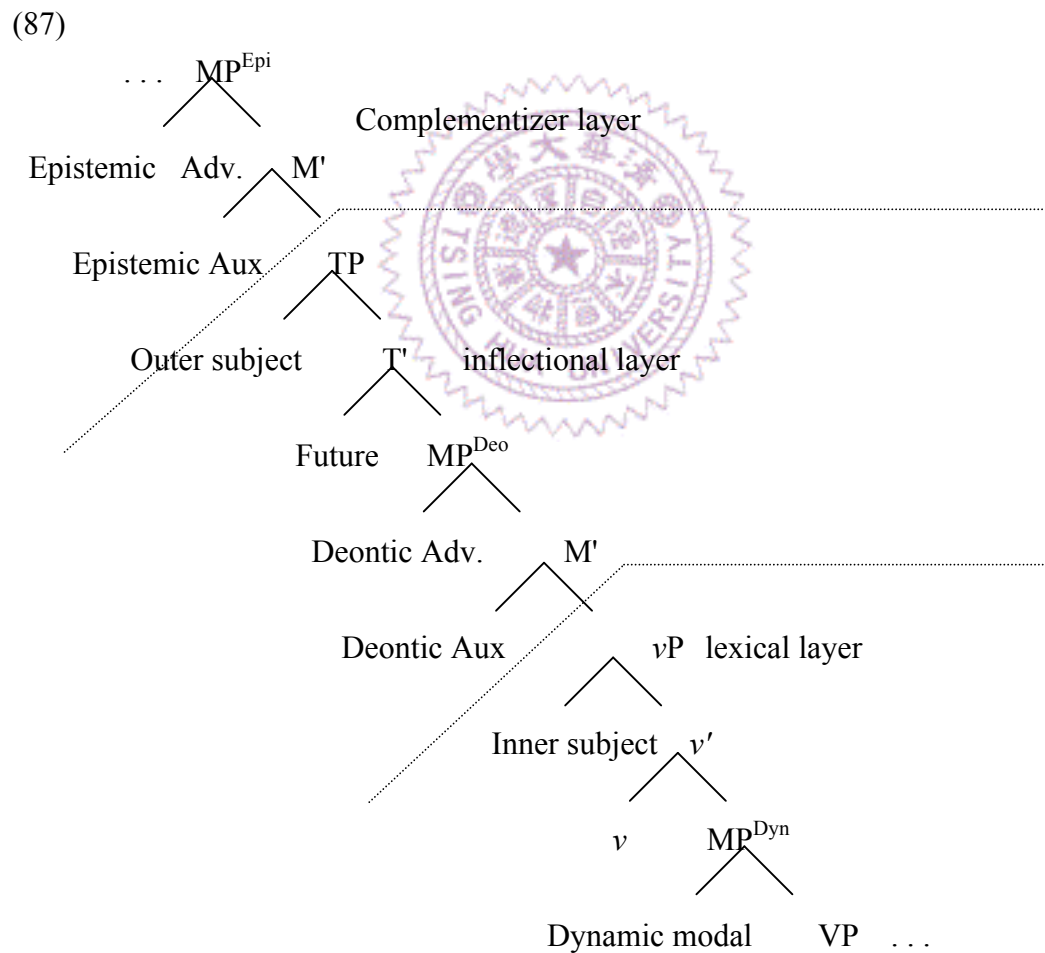
張三看見了他的媽媽，李四也看見了



3.2.3 Modals and VPE

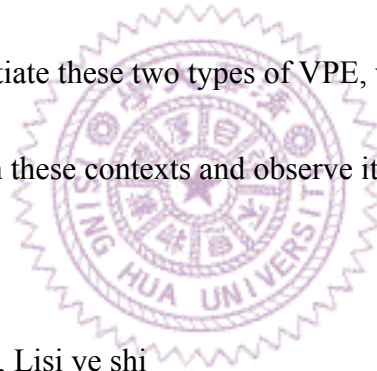
Tsai (2009) proposes a modality spectrum that indicates the following hierarchy applies to Chinese modals: Epistemic Adverbial (知識副詞) > Epistemic Auxiliary (知識助動詞) > Deontic Adverbial (義務副詞) > Deontic Auxiliary (義務助動詞) > Dynamic Auxiliary (能願助動詞). This approach is in line with a cartographic analysis of Mandarin Chinese in that every element has its own projection in syntax.

In syntactic apparatus described in (87), modals in the lexical layer and inflectional layer license modal-type VP ellipsis, while those in the complementizer layer licenses no modal complement ellipsis. This pattern is supported by the data shown in (82)(83). I further address the question of modal-type VPE in another article outside of this thesis.



3.3 A VPE or NOC-like Construction

One famous alternate of VPE that excited much discussion is shown in (89). It is interesting to compare this construction with the one shown in (88). (88) illustrates what was called the *shi*-type VPE, while (89) exhibits the NOC-like (V-stranding VPE) construction, which has been much discussed in the literature (Hoji 1998, Otani & Whitman 1991, Huang 1991 ect.). Although these two constructions look very similar, there is no possibility for (88) to be any kind of v/V-stranding VPE, since *shi* ‘be’, as a focus marker, is merged high on the structure. If we can isolate some contexts to help us differentiate these two types of VPE, we will be able to manipulate light-verb-stranding VPE in these contexts and observe its nature.



(88) Zhangsan xihuan Mali, Lisi ye shi (shi-type VPE)

Zhangsan likes Mary Lisi also SHI

‘Zhangsan likes Mary, and Lisi does, too’

張三喜歡瑪莉，李四也是[e]

(89) Zhangsan xihuan taziji de mama, Lisi ye xihuan (V-stranding VPE)

Zhangsan likes himself DE mother, Lisi also like

Zhangsan likes his mother and Lisi does, too.

張三喜歡他自己的媽媽，李四也喜歡[e]

Though (89) is accounted for as an empty pronominal (Xu 2003) or VP deletion (Huang 1991), and (88) is also analyzed as VP ellipsis (Wu 2002), actually, it is possible to distinguish these two types of VP-related empty elements into different types of empty phrasal categories. In (90)-(93) below, I provide two empirical contexts in which these two constructions behave differently. If these judgements hold up to scrutiny, a plausible account will be needed to account for the distribution of the two elliptical constructions.

Context 1 subordination



(90) Zhangsan da-le Lisi zhihou, Xiaomei ye da-le.

Zhangsan hit-Asp Lisi after Xiaomei also hit-Asp

‘After Zhangsan hit Lisi, Xiaomei did it, too.’

張三打了李四之後，小美也打(了)

(91) * Zhangsan da-le Lisi zhihou, Xiaomei ye shi.

Zhangsan hit-Asp Lisi after Xiaomei also FOC

*張三打了李四之後，小美也是

Context 2 Neg...*que*...construction

(92) Zhangsan mei-kanjian ziji de mama, Lisi que kanjian-le

Zhangsan not-see self DE mother Lisi however see-Asp

‘Zhangsan didn’t see his mother, but Lisi did.’

張三沒看見自己的媽媽，李四卻看見了

(93) *Zhangsan mei-kanjian ziji-de mama, Lisi que shi

Zhangsan not-see self-DE mother Lisi however FOC

*張三沒看見自己的媽媽，李四卻是



In (90)(91), the antecedent clause is subordinate to the main clause in the second conjunct. In (92)(93), on the other hand, the antecedent clause is a negative sentence while the second conjunct shows a meaning of transition. As demonstrated above, *shi*-type VPE is not compatible with the subordination construction (91) and the Neg-*que* construction (93), but verb-stranding VP ellipsis is compatible with both of them (90)(92).

As for light-verb stranding VP ellipsis, (94)(95) shows that they pattern together with

the V-stranding alternates in (90) and (92). This shows that the heads in the IP domain (such as the *shi*- case) behaves quite differently from those in the lower projections in this respect. The higher head does not license ellipsis in the two contexts discussed, while v/V-stranding heads have no problem licensing empty phrasal categories in these two contexts.

Light-Verb stranding VPE in Context 1

(94) a. Wang-mama qie zhe-ba dao zhihou, Li-mama ye qie

Wang-mother cut this-CL knife after Li-mother also cut

‘After Mrs. Wang cut something with this knife, Mrs. Li does so, too’

王媽媽切這把刀之後，李媽媽也切

b. Zhangsan pao caochang zhihou, Lisi ye pao

Zhangsan run playground after Lisi also run

‘After Zhangsan runs in the playground, Lisi does so, too’

張三跑操場之後，李四也跑

Light-Verb stranding VPE in Context 2

(95) a. Wang-mama bu qie zhe-ba dao, Li-mama que qie

Mrs. Wang not cut this-CL knife Mrs. Li however cut

‘Mrs. Wang does not use this knife, but Mrs. Li does’

王媽媽不切這把刀，李媽媽卻切

b. Zhangsan bu pao caochang, Lisi que pao

Zhangsan not run playground Lisi however run

‘Zhangsan does not run in the playground, but Lisi does’

張三不跑操場，李四卻跑

To make the big picture clearer, we can also put modal-type VP ellipsis in these contexts, as in (96) and (97)³¹. When we do so, we can see that they also pattern together with the v/V-stranding type of VPE. Therefore, we are forced to conclude that the *shi*-type of VPE is somehow a separate construction from other VPEs. I will return to the *Shi*-type of ellipsis in [section 4.4](#) where I will propose that it involves an empty category of IP, rather than VP size.

³¹ Some literature may classify this type of modal as a “dynamic” modal. In this thesis I follow Wu (2002)’s classification, and treat such models as included in the “deontic” type without subdivision.

(96) Zhangsan ken qu meiguo chuchai zhihou, talaopo ye ken-le

Zhangsan willing.to go USA work after his.wife also willing.to-Asp

‘After Zhangsan is willing to go to American for work, his wife does, too’

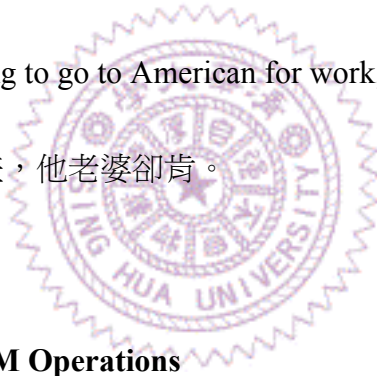
張三肯去美國出差之後，他老婆也肯了

(97) Zhangsan buken qu meiguo chuchai, talaopo que ken

Zhangsan not.willing.to go USA work his.wife but willing.to

‘Zhangsan is not willing to go to American for work, but his wife does’

張三不肯去美國出差，他老婆卻肯。



3.4 Diagnostics for Real SM Operations

In this section, I test the VP elliptical constructions using the typical diagnostics for PF operations. As indicated in Merchant (2010), extraction and pragmatic control are the primary diagnostics for SM-operations.

3.4.1 The Extraction Test

The reason that extraction is used as a diagnostic for PF operations is based on our knowledge about the PF component in generative grammar. Under the T-model of

generative grammar, the main derivation of a sentence is followed by the operation of two interfaces, namely PF and LF³². One piece of a phrasal element can thus be constructed in the Merger, and then be deleted later in PF. The PF rule, therefore, can operate on a full-fledged construction that hosts a trace. As far as we know, there are three types of extraction in syntax: A, A-bar, and head movement. As shown in (98), *wh*- and cleft extraction from an elided VP is possible in English, but these types of extraction are not permitted from *pro*-forms (99).

- (98) a. I know which book Max read, and which book Oscar didn't.
 b. This is the book of which Bill approves, and this is the one
 of which he doesn't. (Fiengo & May 1994:229)

(99) ...vs. no extraction from pronouns

- a. * I know which book Max read for class, and which book Oscar did it too.
 (cf. *...and which book Oscar did too.*)
 b. *This is the book of which Bill approves, but of which he won't admit it.
 (cf. *...but of which he won't admit that he does.*)

Head movement out of an ellipsis site is found in languages with V-raising and

³² Or what are known now as the Sensor-Motor and Conceptual-Intellectual systems.

VP-ellipsis, such as Irish, Hebrew, and Portuguese (see McCloskey 1991, Goldberg 2005, and Santos 2009). For Chinese, V- and light-verb stranding ellipsis both demonstrate head movement followed by VP deletion. The V-stranding data (100) is illustrated in (101), where the main verb is raised to the head of the light verb phrase (vP), after which the VP constituent is deleted.

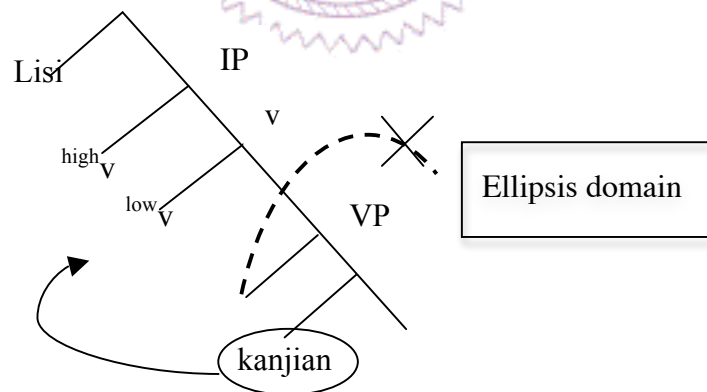
(100) Zhangsan kanjian-le tade mama, Lisi ye kanjian le.

Zhangsan see-Asp his mother Lisi also see Asp

‘Zhangsan saw his mother, and Lisi did, too.’

張三看見了他的媽媽，李四也看見了

(101) ³³



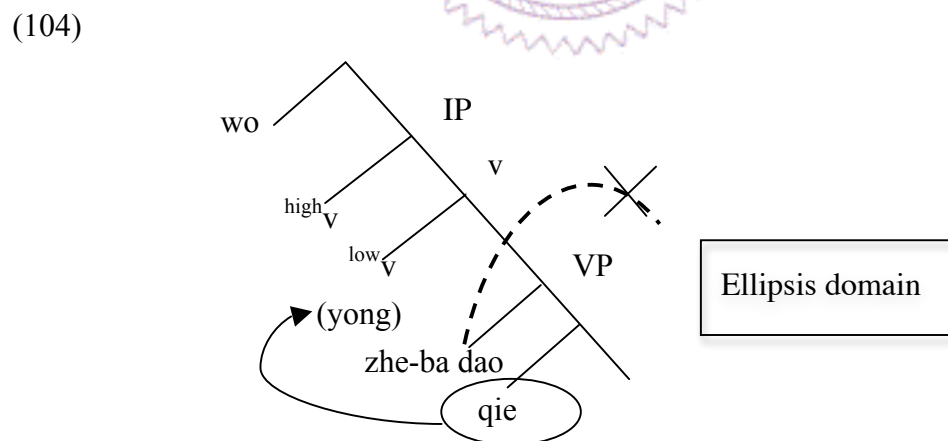
The derivation of (102)(103), as shown in (104), also involves the raising of the V head to the light verb head followed by VP ellipsis. Note that if the overt light verb

³³ ye 也 is understood as an adverb, and is omitted in this diagram.

yong ‘use’ is realized in the light verb head, the main verb *qie* ‘cut’ has no place to raise to, and the alternant (103) is derived.

- (102) ni qie zhe-ba dao, wo ye qie ~~zhe-ba dao~~
 you cut this-CL knife, I also cut this-CL knife
 你切這把刀，我也切這把刀

- (103) ni yong zhe-ba dao qie, wo ye yong ~~zhe-ba dao qie~~
 you use this-CL knife cut, I also use this-CL knife cut
 你用這把刀切，我也用這把刀切



Finally, (105) shows an A-bar extraction out of an elliptical site in English. This kind of example also shows that the syntactic structure may host a trace before the deletion

of the phonological form happens. Examples of A-bar Extraction in Chinese are listed in (106)-(107). (106) and (107) are examples of focus movement, in which a focused element is either marked with the focus marker *lian* or fronted to the vP periphery. Topicalization is shown in Chinese (108). Here we treat it as a case of extraction although the real nature of the gap in the object is still under debate.

(105) Jason will eat shrimp, but squid, I know he won't [~~eat < squid >~~]

(106) Wo zhe-ba dao qie, na-ba dao bu-qie

I this-CL knife cut that-CL knife not-cut

'I use this knife to cut something, but not that one'

我這把刀切，那把刀不切

(107) Lian zhe-ba dao, wo dou qie-le

even this-CL knife I Foc cut-Asp

'Even this knife, I use it to cut something'

連這把刀，我都切了

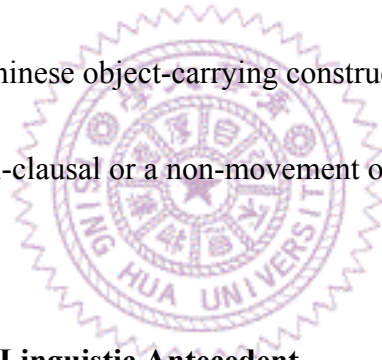
(108) zhe-ba dao a, wo ye qie le

this-CL knife TOP I also cut Asp

‘This knife, I also cut something with it’

這把刀啊，我也切了

Here we have to note that there might NOT be a real A-Extraction case in Chinese for us to test. The Chinese cognate of the English passive construction – namely the *bei*-construction is traditionally analyzed as an instance of operator-variable binding (Huang 1984). The other Chinese object-carrying construction, the *ba*- construction, is also analyzed as either as bi-clausal or a non-movement operation.



3.4.2 Pragmatic Control / Linguistic Antecedent

It is generally assumed that a PF operation needs a phonological antecedent, and that a pragmatic antecedent is not sufficient to license a true PF ellipsis. *pro*-forms, on the other hand, can occur in a pragmatic control environment. The following example (109) from Hankamer & Sag (1976:414) distinguishes a true PF ellipsis from an anaphora.

(109) [Observing Hankamer attempting to stuff 12’’ ball through 6’’ hoop]

Sag:

a. #I don't see why you even try to. [VPE]

b. I don't see why you even try. [Null complement anaphora]

(Hankamer & Sag 1976:414)

Parallel Chinese examples are in (110) and (111). Here, the light-verb-stranding alternates (110)a and (111)a have weird interpretations in their contexts because they lack phonological antecedents. However, it is okay to use a non-light-verb predicate followed by an empty object, as in (110)b and (111)b.

(110) [seeing a salesman demonstrate the use of a fine-brand knife in the supermarket]

[一個業務員在超市展示使用名牌的刀具]

Lisi:

Lisi

李四說

a. # Zhang-mama ye qie zhe ba dao

Zhangsan-mother also cut

‘Mrs. Zhang also uses this kind of knife to cut’

張媽媽也切[這把刀]

b. Zhang-mama ye you zhe-ba-dao

Zhang-mother also have

‘Mrs. Zhang also has this kind of knife’

張媽媽也有[這把刀]

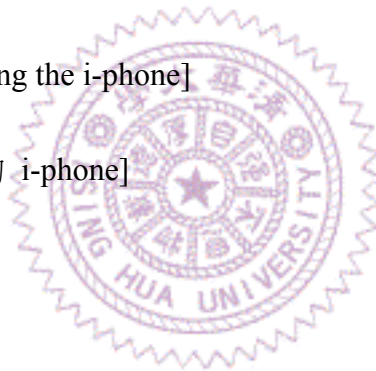
(111) [Seeing a person using the i-phone]

[某人在打最新款的 i-phone]

Lisi :

Lisi

李四



a. # Zhangsan ye da ~~i-phone~~

Zhangsan also make-call

‘Zhangsan also uses (the i-phone)’

#張三也打[~~i-phone~~]

b. Zhangsan ye you

Zhangsan also have

‘Zhangsan also has (an i-phone)’

張三也有[i-phone]

The above two examples filter out the v-stranding VPEs from the empty objects.

These examples show that the v-stranding VPE is not compatible with pragmatic antecedent: a linguistic antecedent is necessary.

On the other hand, null arguments can exhibit two interpretations, one of which refers to a pragmatic antecedent and the other to a linguistic antecedent, while a null complement selected by a light verb cannot exhibit two interpretations (cf. also Toorsavandani 2009 (28) and (29-30)). The sentence in (112) can only be interpreted as the (112)a reading rather than the b reading. In other words, the deleted element may be like the element in (113)a but not (113)b.

(112) Zhangsan qie zhe-ba dao, Lisi ye qie [e]

Zhangsan cut this-CL knife Lisi also cut

張三切這把刀，李四也切 [e]

- a. Zhangsan use this knife to cut something, Lisi also use this knife to cut something
- b. *Zhangsan use this knife to cut something, Lisi also cut the bread

(113)

- a. Zhangsan qie zhe-ba-dao, Lisi ye qie ~~{zhe-ba-dao}~~
 Zhangsan cut this-CL-knife Lisi also cut this-CL-knife
 張三切這把刀，李四也切~~{這把刀}~~
- b. #Zhangsan qie zhe-ba-dao, Lisi ye qie ~~{mianbao}~~
 Zhangsan cut this-CL-knife Lisi also cut bread
 #張三切這把刀，李四也切~~{麵包}~~

3.5 On Domain (or constituency)

In this section, we explore the domain or size of constituent deleted in the light-verb stranding alternants. As mentioned under “research questions” in Chapter 0, we expect that the complement of *v* – the VP constituent, is the element which undergoes ellipsis since such a situation would be best in line with the theory of phases³⁴.

³⁴ Under this theory (Chomsky 2001), the complement of (or domain governed directly by) the phase head is a chunk for various syntactic operations.

3.5.1 Head licensing / “Isidore’s diagnostic”

Starting from Chao (1987) and Lobeck (1995), linguists noticed one of the ways to formalize a proper ellipsis in language. These authors defined ellipsis as occurring only under proper licensing of a functional head; in other words, a functional head is a proper licenser of deletion of its own complement. Recently, Merchant’s (2010) term “Isidore’s diagnostic” has been coined to indicate a similar concept. In these ellipsis studies, the elements D (determiner), C (complementizer), and T (tense) are taken to obligatorily select NP, TP, and VP complements respectively. When these complements are missing, we have an instance of what Chao (1987) called ‘headed’ (H+) ellipses. If we adopt this idea, then v-Stranding VPE is also a case of ellipsis of the complement of functional head – the light verb. The deletion domain of v-Stranding VPE is also in line with the idea of “phase” under this analysis (Chomsky 2001).

Another argument in favor of PF deletion in the VP domain is that the nonverbal element of a complex predicate can be an adjective as well as a noun, as shown for Farsi by (Toorsavanbani 2009 (27)). v-stranding VPE is able to target APs containing a nonverbal element and an internal argument. Since the AP is not an argument selected by the lexical verb, it can not be *pro*.

(114) rostam piran-esh-o xoshk kard vali sohr_ab

Rostam shirt-his-obj dry do.past.3sg but Sohrab

~~[AP piran-esh-o xoshk]~~ na-kard.

shirt-his-obj dry neg-do.past.3sg

“Rostam dried his shirt, but Sohrab didn’t.”

For Mandarin Chinese, Lin (2001) has also observed that an adverbial or adjectival object can be selected by a light verb. This effect is called the “unselectiveness of object in MC”, and such objects are also called “adverbial objects”. As shown at the beginning of this chapter, they can be targets of light-verb stranding VPE; by analogy with Toorsavanbani (2009 (27)), this must be an effect of PF deletion rather than *pro*.

(115) Zhangsan qie (USE) zhe-ba-dao

Zhangsan cut this-CL-knife

張三切(USE)這把刀

(116) Ku (FOR) kuopojiawang

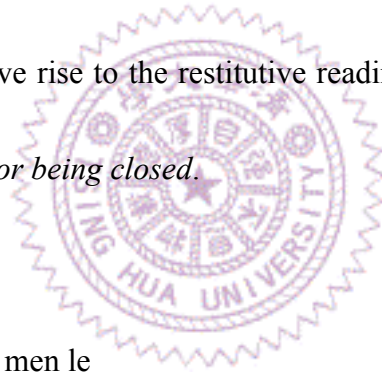
cry the broken country and home

哭(FOR)國破家亡

3.5.2 Outer Tests for Deletion Domain

Again test

Johnson (2008 (24)) tests the size of an ellipsis by exploiting what he calls the “*again* ambiguity”. Von Stechow (1996) demonstrates that a repetitive reading of the English counterpart of (117) results when *again* modifies the entire vP, since the vP then denotes *an action event resulting in the door being in a closed state*. When *again* modifies only the VP, it give rise to the restitutive reading since the VP just denotes *the resulting state of the door being closed*.



(117) Zhangsan you kai men le

Zhangsan again open door Asp

張三又開門了

- a. Zhangsan opened the door, and somebody had opened it before.
- b. Zhangsan opened the door, and it had been in that state before.

To use this test on the light-verb-stranding ellipsis phenomenon, we can manipulate the following examples (118)(119). The restitutive readings of these examples would

indicate that the empty phrasal category is in the domain of VP. However, Tsai (p.c.) reminds me of the possibility that the restitutive reading would never come out in any circumstances, because the predicates *qie* ‘cut’ and *pao* ‘run’ are semantically unable to have a result state. We leave the examples here, while noting that Tsai’s observation offers a potential alternative explanation for the relevant reading.

(118) Wo qie-le zhe-ba dao, ta you qie-~~[zhe-ba-dao]~~

I cut-Asp this-CL knife he again cut this-CL-knife

我切了這把刀，他又切~~[這把刀]~~

- a. He uses the knife to cut something, and somebody had used it before.
- b. #He uses the knife to cut something, and it had been in that state before.

(119) Wo pao-guo caochang, ta you pao ~~[caochang]~~

I run-Asp playground he again run playground

我跑過操場，他又跑~~[操場]~~

- a. #He repeatedly runs in the playground again.
- b. someone runs in the playground, and he run in the playground again.

With adverbials

Adverbial elements is known to exist as adjuncts to the VP, vP, or IP domain. In Chinese, *manman-i* ‘slowly’ is an adjunct to vP or VP. The contrast between (120) and (121) shows that *manman-di* ‘slowly’ can only precede the light verb *qie* ‘cut’. Assuming that light verb *qie* ‘cut’ indeed raises to the light verb head, this adverbial must be modifying vP, rather than VP.

(120) Lisi [_{VP} manman-di [_v *qie*_i +USE [_v *t_i* zhe-ba dao]]]

Lisi slowly-Adv cut this-CL knife

‘Lisi slowly cut something with this knife’

李四 [_{VP} 慢慢地 [_v 切_i + USE [_v *t_i* 这把刀]]]

(121) *Lisi [_{VP} [_v *qie* + USE[_{VP} manman-di [_v *t_i* zhe-ba dao]]]]]

Lisi cut slowly-Adv this-CL knife

*李四 [_{VP} [_v 切 +USE [_{VP} 慢慢地 [_v *t_i* 这把刀]]]]]

In the ellipsis context, (122) further proves that the domain of deletion is VP. When the deleted constituent includes the light verb head (123), or when the adverb is deleted separately (124), the sentences are not grammatical.

(122) ? Lisi manman-di qie zhe-ba-dao, Wangwu ye manman-di qie [_{VP} e]

Lisi slowly-Adv cut this-CL-knife Wangwu also slowly-Adv cut

‘Lisi cut slowly with this knife, Wangwu also cut slowly with this knife’

?李四慢慢地切這把刀，王五也慢慢地切

(123) *Lisi manman-di qie zhe-ba-dao, Wangwu ye manman-di [_v [_{VP} ...]]

Lisi slowly-Adv cut this-CL-knife Wangwu also slowly-Adv

‘Lisi cut slowly with this knife, Wangwu also cut slowly with this knife’

*李四慢慢地切這把刀，王五也慢慢地



(124) *Lisi manman-di qie zhe-ba-dao, Wangwu ye ~~manman-di~~ qie

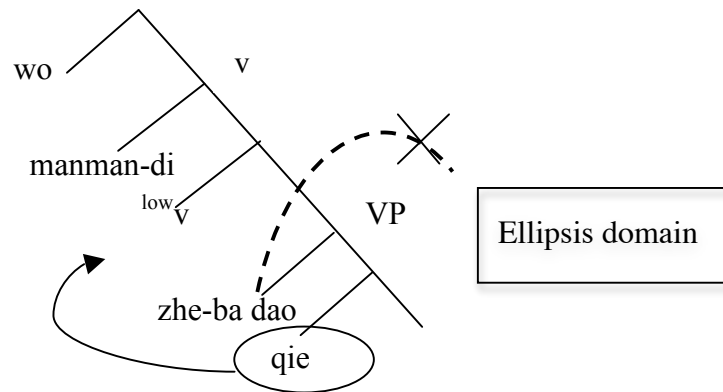
Lisi slowly-Adv cut this-CL-knife Wangwu also slowly-Adv cut

*李四慢慢地切這把刀，王五也切

The adverbial data demonstrate that the deletion domain around VP is as shown in the

diagram (125), below:

(125)



Identity of v

It has been convincingly argued in the literature (Goldberg 2005) that the verbal element (or light verb) which is stranded in the v/V-stranding VP ellipsis possesses an identity requirement with the verb in the antecedent clause. We repeat Goldberg's principle as follows:

(126) the Verbal Identity Requirement:³⁵The antecedent-and-target-clause main Vs of VPE must be identical, minimally, in their root and derivational morphology.

Chinese is a light-verb productive language. The following examples (127)-(130) show that the identity of the light-verb is strictly parallel between the first and the

³⁵ With only the e-GIVENESS identity constraint, we don't expect the identity of the light verbs to matter for determining when ellipsis occurs.

second conjuncts.

- (127) Zhangsan qie zhe-ba dao, Lisi ye *yong/ qie

Zhangsan cut this-CL knife Lisi also use

張三切這把刀，李四也*用/切。

- (128) Zhangsan yong zhe-ba dao qie, Lisi ye *qie/yong

Zhangsan use this-CL knife cut Lisi also cut

張三用這把刀切，李四也*切/用³⁶

- (129) wang-mama qie zhe-ba dao, Li-mama *duo/qie

Mrs. Wang cut this-CL knife Mrs. Li chop

王媽媽切這把刀，李媽媽*剁/切

- (130) Zhangsan pao caochang, Lisi ye *zou / pao

Zhangsan run playground Lisi also walk

張三跑操場，李四也*走/跑

The ungrammaticality of (131)(132), on the other hand, is due to selection of the

wrong “domain of deletion” rather than to a problem of identity of the verb. The realization of the causative head *shi-de* ‘cause’ or *ran* ‘let’ indicates that the domain of ellipsis can be up to vP or IP.

(131) *zhe-ba dao ran Zhangsan qie-de hen lei, na-ba dao ye * shi-de/ * daozhi/ * ran

This-CL knife let Zhangsan cut-DE very tired that-CL knife also cause

‘This knife causes ZS to be very tired by cutting something, and so does that one’

*這把刀讓張三切得很累，那把刀也*使得/ *導致/ *讓

(132) *zhe-ba dao qie de Zhangsan hen lei, na-ba dao ye qie-de

This-CL knife cut-DE Zhangsan very tired that-CL knife also cut-DE

‘This knife causes ZS to be very tired by cutting something, and so does that one’

*這把刀切得張三很累，那把刀也切得

3.6 Concluding Remarks

Several points are made in this chapter. First, we show that “light-verb-stranding VP ellipsis and V-stranding VPE” are attested in Chinese. We argue that light-verb-stranding VPE is derived by raising of the light verb to the v head following by the PF deletion of VP, and light-verb-stranding VPE patterns with

verb-stranding VPE in many syntactic environments. We further demonstrate that two types of light verbs map out a domain for deletion between IP and VP. Finally, we conclude with several arguments demonstrating that VP is a proper domain for deletion.



CHAPTER 4. IP PREDICATION AND SLUICING IN CHINESE

4.1 Introduction

4.1.1 Literature Review

4.2 Predication Analysis

4.2.1 An Explanation for the Violation of MDP

4.2.2 An Explanation for Island Repair

4.2.2.1 Merger

4.2.2.2 Spelling-Out the Sluicing Construction

4.3 Toward A Second Analysis

4.3.1 More Observations

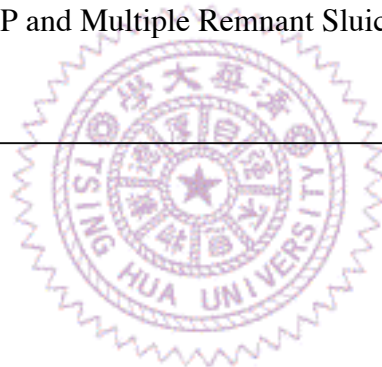
4.3.2 Focus Fronting

4.3.3 Derivation from the Cleft Construction

4.3.4 Derivation from the Pseudo-Cleft

4.4 The *shi*-type of empty IP and Multiple Remnant Sluicing

4.5 Concluding Remarks

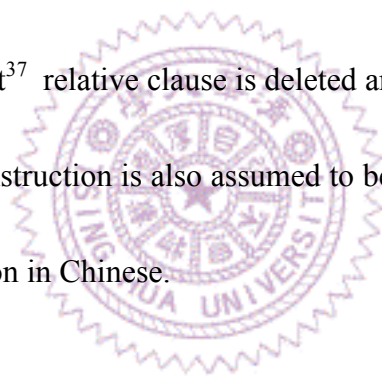


4.1 Introduction

This chapter aims to give two possible accounts for sluicing-like constructions. One is the “*pro* and predication analysis”, and the other is the “PF deletion onto the pseudo-cleft construction” analysis. At the end of this chapter, I also present the distribution of two idiosyncratic constructions – the ‘*shi*-type of pseudo-VPE’ and ‘multiple sluicing’ in Chinese.

The predication account captures the nature of Chinese *wh*-elements to be in-situ, and gives support to the notion of a productive “predication mechanism” in Chinese

language. This account argues that there is no real PF deletion involved in the Chinese sluicing-like construction; therefore, “a subject *pro* with *wh*-predicate” analysis should be preferable. However, this thesis observes that a contrastive focus is crucial in licensing a grammatical remnant across syntactic islands. Furthermore, under some circumstances, strong islands do block sluicing in Mandarin Chinese. Therefore, except for the predication account, I will present another derivation following deletion approaches to sluicing,-- such as Ross (1969), Merchant (2001), and Fox and Lasnik (2003). We in proposing an alternative “deletion within the pseudo-cleft” analysis. Under this account, a sprout³⁷ relative clause is deleted and leaves a *wh*-remnant in its place. The pseudo-cleft construction is also assumed to be the underlying structure for the sluicing-like construction in Chinese.



The layout of this paper is as follows: section 4.1 provides a simple literature review of this phenomenon. Section 4.2 briefly reviews the predication approach to dealing with the Chinese sluicing-like construction. It shows how a predication analysis can and cannot deal with MDP³⁸ violations and unexpected island effects. Section 4.3 illustrates how we derive the focus effect from focus fronting, cleft or pseudo-cleft constructions, and introduces an analysis of the Chinese sluicing-like constructions as

³⁷ “sprout” is used to describe linguistic elements coming out of nowhere.

³⁸ The “Minimal Distance Principle” states that the reference of an empty nominal must be coindexed with the closest nominal in the sentence.

deletion onto the relativized part of a pseudo-cleft. Section 4.4 gives an account of apparent empty *shi*-type IP complements and multiple sluicing. Section 4.5 concludes this chapter.

4.1.1 Literature Review

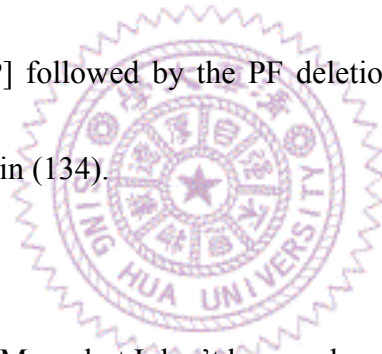
Merchant (2001) & CLM (1995) are two of the recent articles that deal with the repair of island violation in English sluicing. The former sticks on the repair of PF deletion, while the later look for LF account on sluicing which capture the nature of repair. Merchant (2001) argues that deletion eliminates the PF-mistakes caused by syntactic islands. He distinguishes PF islands from LF ones in order to account for the repair asymmetry. Chung (2005), on the other hand, suggests that sluicing must satisfy a lexico-syntactic requirement that falls short of LF isomorphism. Every lexical item in the numeration of the sluice that ends up in the elided IP must be identical to an item in the numeration of the antecedent CP.

The Chinese sluicing-like construction has been a matter of debate for many years. Wang (2002) proposes a focus-movement account, while Wei (2004) suggests a subject-*pro* with predication account. As for island repair, Wang (2006) argues that *wh*-trace positions in island sentences host a pronominal element left by movement.

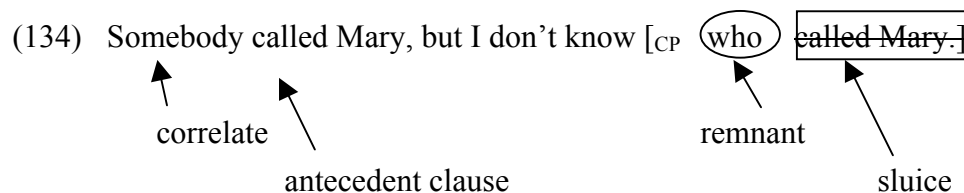
This analysis also solves some of the counterexamples to P-stranding that are found in Mandarin Chinese. Wei (2004) proposes that Chinese island repair only supports the deletion/copy mechanism, but not the existence of overt *wh*-movement. He finds that island repair happens in some cases but not others.

4.2 Predication Analysis

The so-called sluicing construction is exemplified in (133). Starting from Ross (1969) and Merchant (1999), this construction has been analyzed as stemming from *wh*-movement to [Spec CP] followed by the PF deletion of the IP constituent. The mechanism is illustrated as in (134).

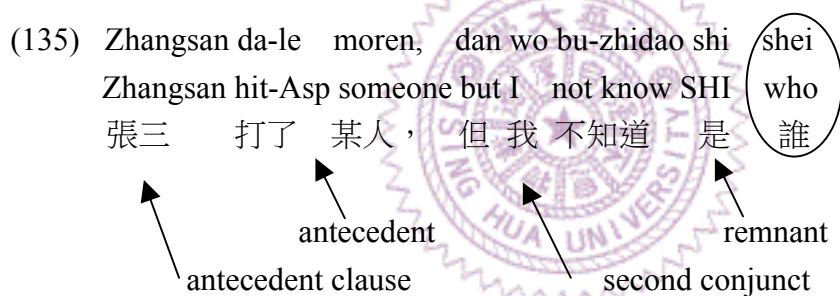


- (133) a. Somebody called Mary, but I don't know who.
b. John ate something, but I don't know what.



In an in-situ language such as Chinese, a superficially similar construction occurs, as shown in (135). There is a large body of literature attempting to analyze this construction. Among the many attempts, the predication approach is the most widely

accepted (Wei 2004). This is in line with Huang's (p.c) claim that Chinese is a predicate-productive language. The basic idea of this analysis is no deletion takes place in the sluicing-like construction. Rather, an empty subject *Pro* appears preceding the remnant functions with the remnant functioned as the predicate of the second conjunct. If the *wh*-phrase is argumental, the empty constituent is an individual *Pro*, as in (136) ;on the other hand, if the *wh*-element is a *wh*-adjunct denoting location or time, the empty element in front of the remnant is an event *Pro*, shown in (137).



(136) Zhangsan da-le moren, dan wo bu zhidao [*pro*_{individual} *(shi) shei].

Zhangsan hit-Asp someone, but I not know be who

'Zhangsan hit someone, but I don't know whom'

張三打了某人，但我不知道是誰

(137) Zhangsan mai-le fangzi, dan wo bu zhidao [*pro*_{event} (shi) zai nali]

Zhangsan buy-Asp house but I not know be at where

‘Zhangsan bought a house, but I don’t know where’

張三買了房子，但我不知道(是)在哪裡

4.2.1 An Explanation for the Violation of MDP

The predication analysis presented in the previous section has some qualities, but it ignores the focus effect, which will be demonstrated in section 4.3.1. Also, another obvious challenge to this account comes from the semantic asymmetry of the anaphors’ reference. According to the Generalized Control Rule (Huang1989), an empty pronominal must refer to the closest NP in its governing category. In (138)a, therefore, the referent of the empty pronominal must be *Zhangsan*, but the one in (138)b must be *ma* ‘the horse’. This is what is known as the Minimal Distance Principle (MDP). In other words, the denotation of reference is only sensitive to the closest nominal element.

(138) a. Zhangsan_i qi-de [[Pro]_i hen lei]

Zhangsan ride-DE very tired

‘Zhangsan rode the horse which makes him very tired’

張三騎得[[Pro]_i]很累]

b. Zhangsan_i ba ma_j qi-de [[Pro*_{i/j}] hen lei]

Zhangsan BA horse ride-DE very tired

‘Zhansan rode the horse which made the horse very tired’

張三_i 把馬_j 騎得[[Pro*_{i/j}]很累]

Following this principle, the referent in the bi-clausal example (139) should not be *mouren* ‘someone’, but *wo* ‘I’. This would then be a challenge for the *pro*-form account of sluicing.

(139) Zhangsan renwei mouren xihuan Lisi, dan wo buzhidao Pro_[Subject pro] shi shei

Zhangsan think someone likes Lisi, but I not-know be who

‘Zhangsan thinks someone likes Lisi, but I don’t know who.’

張三認為某人喜歡李四，但我不知道 Pro_[個體空代詞]是誰

The same problem arises in the cases of event *Pro*. First consider the example in (140)a, when the empty category refers to the event described in the antecedent clause, the semantic interpretation of which would be “*I don’t know the location where Lisi is studying*”

(140) a. Lisi zhengzai renzhen nianshu, dan wo buzhidao Pro_[event] shi zai-nali

Lisi is-now hard study, but I not-know be at-where

‘Lisi is studying hard, but I don’t know where’

李四正在認真唸書，但我不知道 Pro_[事件空代詞]是在哪裡

b. Wang-jiaoshou zhengzai dasi xuanchuan [Lisi zheng hen renzhen nianshu],

Wang-professor is-now widely announce [Lisi Prog. very hard study,

dan wo buzhidao Pro_[event] shi zai-nali

but I not-know be at-where

‘Prof. Wang is announcing to everybody that [Lisi is studying hard],

but I don’t know where’

王教授正在大肆宣傳[李四正很認真唸書]；

但我不知道 Pro_[事件空代詞]是在哪裡

c. wo tingshuo [A-mei zai-meiguo shenghaizi-le],

I heard [A-mei at-America give-birth-Asp],

dan Li-jiaoshou buzhidao Pro_[event] shi zai-nali

but Li-Prof not-know be at-where

‘I heard that [A-mei gave birth to a child in USA], but I don’t know where’

我聽說[阿美在美國生孩子了]；但李教授不知道 $Pro_{[事件空代詞]}$ 是在哪裡

But when the antecedent clause has one clause embedded, as in (140)b,c, the situation is more complicated. The *Pro* in (140)b can only refer to the main clause, with the meaning ‘*I don’t know the location where Prof. Wang announced this event*’. On the other hand, the *Pro* in (140)c can only refer to the embedded clause, resulting in the meaning ‘*Prof. Lee doesn’t know the location where A-mei gave birth to a child*’. This is the main problem for the predicate analysis. At this point I do not have a satisfactory explanation for this phenomenon, but it will become clearer in section 4.3.1 that there is focus effect underlying the interpretation of a remnant.

4.2.2 An Explanation for Island Repair

A well-known fact about the sluicing construction is that the *wh*-remnant ignores island effects. As shown in (141)-(143), the island violation caused by *wh*-movement in the (b) sentences is repaired in their sluicing counterparts in (a). If the remnants of (a) and (b) are extracted from the embedded syntactic islands in what is known as “island repair” as Ross (1969) and Merchant (1999) claim (141)-(143) present a puzzle to be solved.

(141) Relative clause island:

- a. They want to hire someone who speaks a Balkan language, but I don't remember which.
- b. * I don't remember which (*Balkan language_i*) they want to hire someone [*who speaks t_i*].

(142) Adjuncts:

- a. Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.
- b. *Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which_i (*of the teachers*) Ben will be mad [*if she talks to t_i*].

(143) Coordinate Structure Constraint:

- a. They persuaded Kennedy and some other Senator to jointly sponsor the legislation, but I can't remember which one. (Chung et al's 1995 (88b))
- b. Bob ate dinner and saw a movie that night, but he didn't say which.

In Mandarin Chinese, it is found that both CNPC and Adjunct island violations are repairable in sluicing-related constructions, but only when the *wh*-remnants in the

sluicing constructions are *wh*-nominals. The contrasts in (144)-(146) demonstrate the asymmetry of *wh*-nominal and *wh*-adverbial repair.

CNPC

(144) a. [[laoshi dang-le mouren_i] de xiaoxi] xiahuai-le dajia,

teacher fail-Asp someone DE news frighten-Prt everybody,

dan wo buzhidao shi **shei_i**.

but I not.know be who

‘The news that TEACHER failed someone frightened us all, but I don’t know who’

[[老師當了某人_i]的消息]嚇壞了大家，但我不知道是誰_i

b. *[[laoshi *e_i* qinzi chuli zhe-jian-shiqing] de xiaoxi]xiahuai-le dajia,

teacher personally handle this-CL-matter DE news frighten-Prt everybody,

‘The news that TEACHER handles this matter in person has frightened us,

dan wo buzhidao shi **zai-nali_i**

but I not.know be at-where

but I don’t know where’

*[[老師 *e_i* 親自處理這件事情]的消息]嚇壞了大家，但我不知道是在哪裡

Adjunct

(145) a. mouren_i da-le Zhangsan zhihou, laoshi shengqi-le; dan wo buzhidao shi **shei**_i

someone hit-Prt Zhangsan after, teacher angry-Prt; but I not know be who

‘After someone hit Zhangsan, teacher got angry; but I don’t know who’

某人_i打了張三之後，老師生氣了，但我不知道是誰_i

b. *Zhangsan **e_i** da-le mouren zhihou, laoshi shengqi-le;

Zhangsan hit-Prt someone after, teacher angry-Prt;

dan wo buzhidao shi **sheme-shihou**_i

but I not.know be what-time

‘After Zhangsan hit someone, teacher got angry; but I don’t know when’

張三 **e_i**打了某人之後，老師生氣了，但我不知道是什麼時候

(146) a. yinwei mouren da-le Zhangsan, suoyi laoshi shengqi-le;

because someone hit-Prt Zhangsan so teacher angry-Prt,

dan wo buzhidao shi **shei**.

but I not.know be who

‘Because someone hit Zhangsan, teacher got angry; but I don’t know who’

因為某人打了張三，所以老師生氣了；但我不知道是誰

b. *yinwei Zhangsan e_i da-le ren, suoyi laoshi shengqi-le;

Because Zhangsan hit-Prt people, so teacher angry-Prt;

dan wo buzhidao shi **zai-mali**

but I not.know be at-where

‘Because Zhangsan hit people, the teacher got angry; but I don’t know where’

*因為張三 e_i 打了人，所以老師生氣；但我不知道是在哪裡

The idea that PF deletion can ameliorate syntactic island violations originated in Chomsky (1972), and it has been picked up more recently by Merchant (2001). These authors suggest that *-marked elements³⁹ are assigned to a syntactic island when a constituent moves crosses it. If a later operation deletes a category containing the *-marked item, the derivation is saved. Some researches (Kennedy & Merchant 2000, Lasnik 2005, 2006 etc) go further to propose that PF deletion can ameliorate all violations of movement constraints. Such an account is also adopted in some movement accounts of in-situ languages such as Malagasy.

Researchers into PF-repair strategies have also noticed that it is too late to repair the movement violation if we assume the T-model in the Generative grammar as

³⁹ # in Chomsky's presentation.

mentioned in Chapter 0. This is known as Wasow’s paradox. How can a mistake caused in the core syntax be tolerated until the PF stage, late in the derivation? ⁴⁰ In this study, I will adopt a minimalist remerger⁴¹ account to solve the paradox of movement violations and support a focus-based analysis of Chinese. Section 4.2.2.1 demonstrates the process of Merger, and section 4.2.2.2 is a discussion of the component of Spell-out, where island violation is saved. I will then try to illustrate what exactly happens in the different components of minimalist grammar while deriving a sluicing construction.

4.2.2.1 Merger

To solve Wasow’s (1972) paradox, we suggest that the derivation of the sluicing-like-construction proceeds as follows. Firstly, Merger must build the syntactic structure of the first conjunct either ahead of or in parallel with the second conjunct. In other words, the second conjunct is in some sense a “PF echo” and must be a “total repetition” of the original conjunct preceding it. (147) demonstrates the merger of the first conjunct. In (a) *moge-dongshi* ‘something’ is merged with the predicate *mai* ‘buy’, then in (b), it merges with the Aspect marker–*le*, and then the

⁴⁰ The only way is to accept the global derivational constraint. But this is not well-accepted among linguists.

⁴¹ According to certain literatures such as Zhang (2004) and Collins (2001), “the theory of movement must relate a single syntactic object to two syntactic positions. Any further mechanisms (e.g., indexes, chains, copies, deletion, etc) should be excluded” The term “remerger” used in this paper is on a par with this concept of movement. The intrinsic idea of remerger differs from a movement account of sluicing in that a remerged object is able to escape the islands in the syntactic representation. Since no clone or indexing exists between the two positions of the object, dependency may be viable.

subject *zhangsan* ‘person’s name’. Next the vP internal subject undergoes a raising to the [Spec TP] position, as shown in (c), and the correct order is borne out.

- (147) a. [_{VP} mai [_{NP} **moge-dongshi**]]]
 buy something
 b. [_{VP} Zhangsan [_{ASP}-le [_{VP} mai [_{NP} **moge-dongshi**]]]
 Zhangsan Asp buy something
 c. [_{TP} Zhangsan [_{VP}[_{ASP} mai-le [[**moge-dongshi**]]]
 Zhangsan buy-Asp **something**,

(148) *First conjunct in Merger*

[Zhangsan [mai-le **moge-dongshi**]]]
 Zhangsan buy-Asp **something**,

Second conjunct in Merger

[dan wo buzhidao [_{CP} [_C [_{FP} [_F[+F]] [Zhangsan [mai-le [**shemo**]]]]]]]]
 but I not.know Zhangsan buy-Asp **what**

Parallel Condition

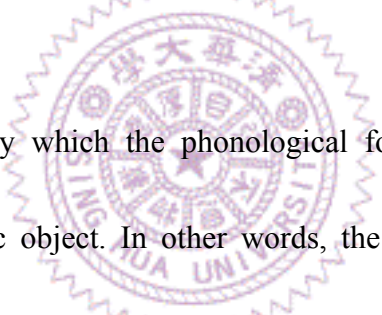
By the time the second conjunct is being built, the first conjunct has already been spelled out, so it is possible for the embedded clause of the sluice to be built in accordance with the first conjunct, with exactly the same lexical items except for a *wh*-variable in the object position. This is the origin of what is called the “parallel condition”. The parallel condition is, therefore, totally syntactic, and it remains a rigid the order of merging while the construction is being built. The embedded clause is then merged as a chunk to the matrix clause. Also at this stage of derivation, the *wh*-phrase is merged in its base-generated object position, which is unexceptional.

4.2.2.2 Spelling-Out the Sluicing Construction

What makes the second conjunct a real sluice happens at the point of “Spell-Out”.

After the effort of many generative linguists (Chomsky 2001, Zhang 2004, among others) to describe the mechanism of cyclic Spell-Out, the Spell-Out component now looks like (149):

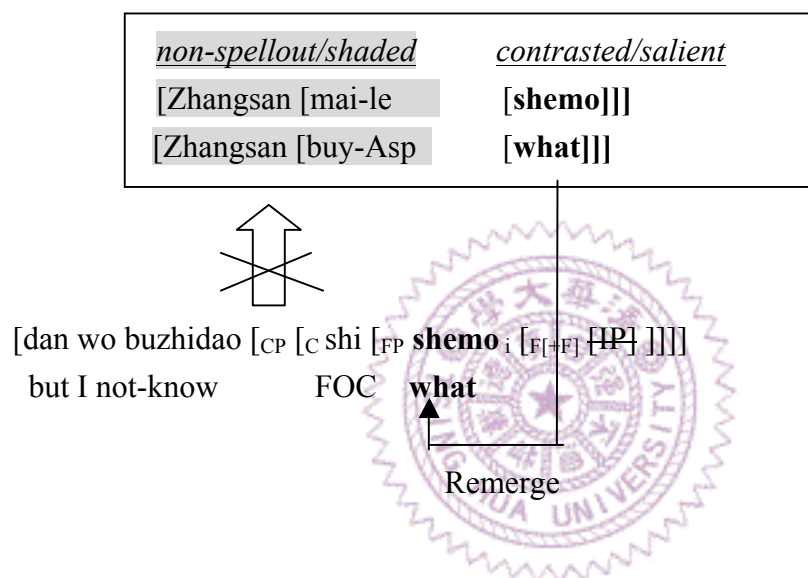
(149) *The operation Spell Out removes (or deprives) PF material from the syntactic object K and transfer K to the LF component.*



Spell-Out is the process by which the phonological form of a linguistic item is removed from the syntactic object. In other words, the phonological realization is taken off of the structure during this process of deprivation. We know that in the position of *wh*-phrase, the construction-in-parallel is ignored. At this point, the Reemergence of the *wh*-element can occur. Many linguists believe that to reemerge a XP, any further mechanisms (e.g., indexes, chains, copies, deletion, etc) should be excluded”. The term “remerger” used in this paper is on a par with this concept of movement described in Zhang (2004) and Collins (2001). What blocks movement within the syntactic representation is no longer blocking the dependency of the remerged element, since no clone or indexing exists.

The process of remerger which occurs in Spell-Out is diagramed in (150). PF deletion can not eliminate a focused (or salient) constituent because of its semantic information and a remerger of the remnant into the focus projection is triggered.

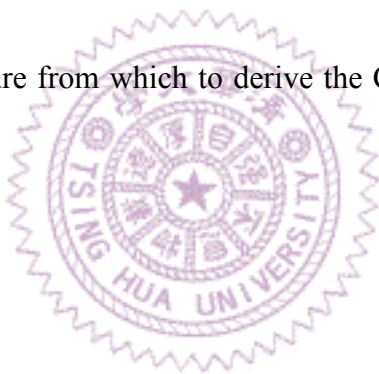
(150) *Second conjunct in Spell-Out*



The result of this process is that deletion of sluicing is not only a PF operation but also an eliminating operation between core syntax and the Spell-Out. The movement violation is repaired by a simple re-merger of a focused element, which cannot be omitted because of an interpretative need. This account is able to explain the focus effect shown in section 4.3.1, and also solve the “too-late-to be saved” problem of Wasow (1972). In the next section I will discuss a possible derivation of sluicing from the pseudo-cleft construction, as well as some consequences and problems of the current proposal.

4.3 Toward A Second Analysis

In this section, we introduce a second plausible account for the apparent sluicing construction, which is based on some focus effects observed in this construction (in section 4.3.1). I show that although the persuasive predication analysis can account for many instances of this construction, there are some other cases that are better explained using a focus-related solution. Furthermore, among cleft, pseudo-cleft, and focus movement accounts, I believe that the pseudo-cleft construction is the most plausible underlying structure from which to derive the Chinese sluicing-like surface structure.



4.3.1 More Observations

Before discussing the focus-related analyses, we will briefly explore some phenomena related to focus elements. We start with CLM (1995)'s empirical generalization concerning ANT-phrases. The authors argue that only some types of the phrases are qualified to be antecedents for the sluicing remnants. The details of their conclusion are shown in (151) below: weak indefinites and *wh*-phrases are possible candidates for sluicing remnant antecedents; names and quantificational NPs are not. Data in support of these conclusions are shown in (152).

(151)	Good ANT-phrases	Bad ANT-phrases
	weak indefinites: (152)(a)	names: (152)(c)
	<i>wh</i> -phrases: (152)(b)	quantificational NPs: (152)(d)

(152) a. Zhangsan da-le moren, dan wo buzhidao shi shei.

Zhangsan hit-Prt someone, but I not know be who

‘Zhangsan hit someone, but I don’t know who’

張三打了某人，但我不知道是誰

b. Wo zhidao ta da-le ji-ge ren, dan wo buzhidao shi shei.

I know he hit-Prt how many-CL people, but I don’t know be who

‘I know how many people he hit, but I don’t know who’

我知道他打了幾個人，但我不知道是誰

c. *Zhangsan da-le Lisi, dan wo buzhidao shi shei

Zhangsan hit-Prt Lisi, but I not know be who

‘*Zhangsan hit Lisi but I don’t know who’

*張三打了李四，但我不知道是誰

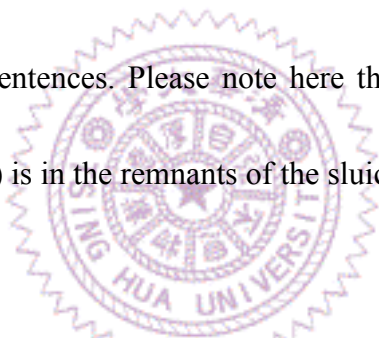
d. *Zhangsan da-le meige xuesheng, dan wo buzhidao shi shei/ jige

Zhangsan hit-Prt every student, but I not know be who/ how many

‘*Zhangsan hit all students, but i don’t know who/ how many’

* 張三打了每個學生，但我不知道是誰/幾個

However, we can easily find exceptions to these generalizations, as the sentences in (153) show. In the a and b examples, the weak indefinites and *wh*-remnants in the first clause don’t guarantee the grammaticality of the sentence, whereas in the c and d examples, names and quantificational NP remnants are shown to be able to survive in grammatical sluicing-like sentences. Please note here that the focal stress in all the examples in (152) and (153) is in the remnants of the sluicing-like construction⁴².



(153)a. *ta da-le si-ge ren, dan laoshi buzhidao shi **ji-ge**

he hit-Prt four-CL people, but teacher not know be **how many-CL**

‘*He hit four people, but teacher doesn’t know how many’

*他打了四個人，但老師不知道是**幾個**

b. *wo zhidao ta da-le ji-ge ren, dan tamen buzhidao shi **ji-ge**.

I know he hit-Prt how many-people, but they not know be **how many-CL**

⁴² Bold characters are used to indicate stressed elements in these sentences.

‘I know he hit how many people, but they don’t know how many’

*我知道他打了幾個人，但他們不知道是幾個

c. wo zhidao Zhangsan, Lisi, Wangwu zai dajia, dan wo buzidao shi **shei tui shei**.

I know Zhangsan, Lisi, Wangwu, at fight, but I not know be **who to who**

‘I know that ZS, LS, and WW are fighting, but I don’t know **who with whom**.’

我知道張三，李四，王五在打架，但我不知道是誰對誰

d. Zhangsan da-le meige-xuesheng,

Zhangsan hit-Prt every-student,

dan laoshi buzhidao daodi shi **shei/ ji-ge**.

but teacher not know EXACTLY be **who/ how man-CL**

Zhangsan hit every students, but teacher doesn’t know **who/ how many**.

張三打了每個學生，但老師不知道到底是誰/幾個

Even more surprisingly, a slight manipulation of the position of the focal stress in the above sentences results in different grammaticality judgements concerning the remnants of the sluicing sentences. The sentences with altered focal stress are shown in (154).

(154) a. ta da-le si-ge xuesheng, dan **laoshi** buzhidao shi ji-ge.⁴³

he hit-Prt four-CL student, but **teacher** not know be how many-CL

‘He hit four students, but **teacher** doesn’t know how many

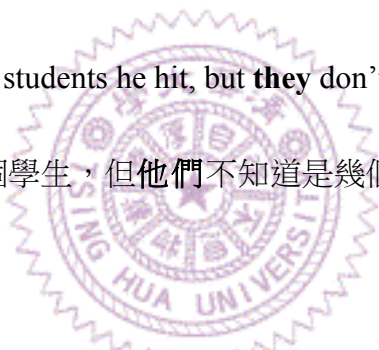
他打了四個學生，但**老師**不知道是幾個

b. wo zhidao ta da-le ji-ge xuesheng, dan **tamen** buzhidao shi ji-ge.

I know he hit-Prt how many-CL student, but **they** not know how many-CL.

‘I know how many students he hit, but **they** don’t know how many.’

我知道他打了幾個學生，但**他們**不知道是幾個



At this point, we can at least conclude that sluicing is a focus-related phenomenon in Chinese. The placement of the stress does affect the grammaticality of the sluicing-like sentences, regardless of the nature of the remnants. Therefore, starting from the next section, I will discuss some focus-related structures and mechanisms, which may be implicated in the derivationally related underlying structures of the sluicing-like sentences. By section 4.3.4, it will become clear that the pseudo-cleft construction is very similar to the sluicing-like construction in Chinese.

⁴³ We generally put the focal stress on the *wh*-remnant rather than on the copular *shi*. Lee (2005) clearly points out that the focal stress is put on the copular in (pseudo)-cleft construction. Here we have a slightly different opinion on the stressing of (pseudo)-clefts.

4.3.2 Focus Fronting

The only focus-related analysis of Chinese in the literature is found in Wang (2002, 2005) and Wang & Wu (2005). These authors propose that the *wh*-remnants in the Chinese sluicing construction have undergone overt focus movement. As illustrated in (155), *shenme* 'what' is attracted from within the IP to FocusP to check the focus feature [+Foc]. PF-deletion is then applied to IP to yield the surface form.

- (155) ...dan wo bu zhidao [CP OP_i[+Q] [C shi [FP shenme_i [F[+Foc] {HP ... ~~t_i ...}~~]]]]
 but I not know be what
 '... but I don't know what'
 但 我 不知道 是 什麼

Aside from (155) and the original predication account in (156), two more focus-related accounts have been proposed in the literature. In Chiu (2007), I discussed both of these accounts: (157) demonstrates a derivation of the sluicing-like construction from a cleft structure (Lee 2005); while (158) shows the derivation from a pseudo-cleft. In the rest of this chapter, we give a detailed explanation to their derivations in 4.3.3 and 4.3.4, respectively.

- (156) Zhangsan mai-le mo-ge-dongxi, dan wo buzhidao [*pro**(shi) sheme].

...but I not-know be what

張三買了某個東西，但我不知道 [*pro**(是) 什麼].

(157) Mouren mai-le pingguo, dan wo buzhidao [shi shei ~~{mai-le pingguo}~~]

Someone buy-Asp apple, but I not-know [FOC who ~~{buy-Asp apple}~~]

某人買了蘋果，但我不知道[是誰~~買了蘋果~~]

(158) Zhangsan mai-le moge-dongxi, dan wo buzhidao [~~{Zhangsan mai-de}~~shi sheme]

Zhangsan buy-Asp something, but I not-know [~~{Zhangsan buy-DE}~~ FOC what]

張三買了某個東西，但我不知道[[張三買的]是什麼]

4.3.3 Derivation from the Cleft Construction

According to Li (1980) and Lee (2005), a cleft is defined as a sentence in which the focus marker ‘*shi*’ appears directly in front of the focused constituent. We can have subject focus (159)(a), adjunct focus (159)(b), and VP focus (159)(c). The word order of declarative sentences is preserved in the cleft construction, while sentence final *de* is optional in subject-focused and adjunct-focused sentences (159)(a)(b). Another characteristic feature of clefts is that constituents under VP, such as object NPs, cannot be focused. (159)(d).

[subject focus]

(159) a. shi zhangsan / shei zuotian chi-le pingguo (de)

FOC Zhangsan / who yesterday eat-Asp apple (DE)

‘It is Zhangsan who ate apples yesterday’

是張三／誰昨天吃了蘋果(的)

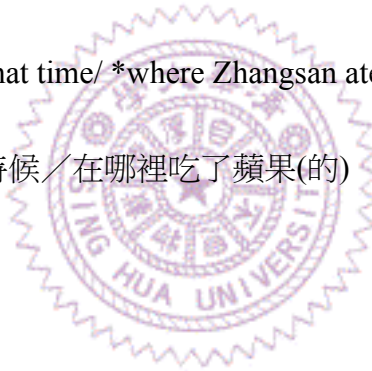
[adjunct focus]

b. Zhangsan shi zuotian / shemo-shihou/ zai-mali chi-le pingguo (de)

Zhangsan FOC yesterday/ what-time / at-where eat-Asp apple (DE)

‘It is yesterday / at what time/ *where Zhangsan ate apples yesterday’

張三是昨天／甚麼時候／在哪裡吃了蘋果(的)



[VP focus]

c. Zhangsan zuotian shi chi-le pingguo

Zhangsan yesterday FOC eat-Asp apple

‘It is eating apples that Zhangsan did yesterday’

張三昨天是吃了蘋果

[object focus]

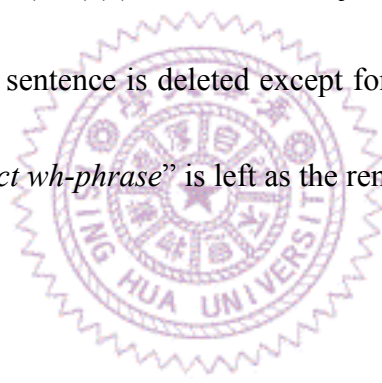
d. *Zhangsan zuotian chi-le shi pingguo/ shemo

Zhangsan yesterday eat-Asp FOC apple/ what

Int: ‘It is apple/ *what that Zhangsan ate yesterday’

張三昨天吃了是蘋果／甚麼

To derive the sluicing construction from cleft sentences, the derivation would proceed as shown in (160). In (160)(a), the second conjunct is a subject-focused cleft sentence. Except for the focused subject nominal *shi shei* ‘be who’, the whole sentence is deleted. The “*focus marker + subject wh-nominal*” then appears as the remnant of the sluicing-like construction. In (160)(b), the second conjunct is an adjunct-focused cleft sentence. Again, the whole sentence is deleted except for the focused adjunct phrase. The “*focus marker + adjunct wh-phrase*” is left as the remnant.



[subject focus]

(160) a. zuotian mouren chi-le pingguo,

yesterday someone ate apple,

dan wo buzhidao shi shei ~~zuotian chi-le pingguo (de)~~

but I not-know FOC who ~~yesterday ate apple (de)~~

昨天某人吃了蘋果；但我不知道是誰昨天吃了蘋果(的)

[adjunct focus]

b. zuotian Zhangsan chi-le pingguo,

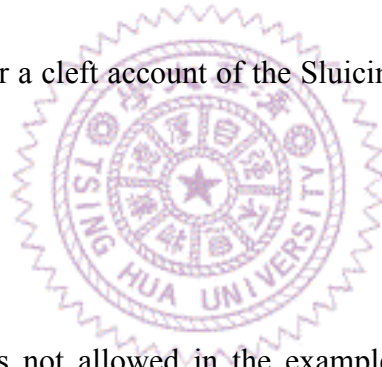
yesterday Zhangsan ate apple,

dan wo buzhidao ~~Zhangsan~~ shi shemo-shihou/ zai-nali ~~chi-le pingguo (de)~~

but I not-know ~~Zhangsan~~ FOC what-time / at-where ate apple (de)

昨天張三吃了蘋果；但我不知道張三是甚麼時候／在哪裡吃了蘋果(的)

This account has the advantage of explaining the focus effects demonstrated in the previous section. The occurrence of ‘*shi*’ is not a mystery anymore. However, there are still some challenges for a cleft account of the Sluicing-like derivation. I list three of them below.



First of all, object focus is not allowed in the example in (159), repeated here in (161)a.b. If we take sluicing in (162)a. as deriving from (162)b, this focus limitation is problematic.

(161) a. *Zhangsan zuotian chi-le shi pingguo

Zhangsan yesterday eat-Asp be apple

‘it is apple that Zhangsan ate yesterday’

*張三昨天吃了是蘋果

b. * Zhangsan zuotian chi-le shi sheme

Zhangsan yesterday eat-Asp be what

‘What is it that Zhangsan ate yesterday’

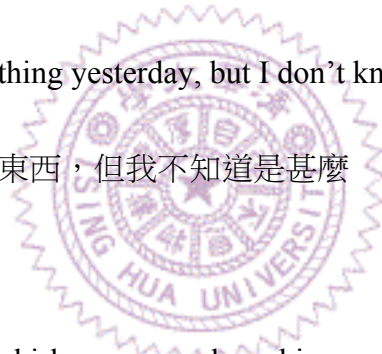
*張三昨天吃了是甚麼

(162) a. Zhangsan zuotian chi-le moge-dongshi, dan wo buzhidao shi shemo

Zhangsan yesterday eat-Asp something, but I not-know FOC what

‘Zhangsan ate something yesterday, but I don’t know what’

張三昨天吃了某個東西，但我不知道是甚麼



b. Zhangsan zuotian chi-le moge-dongshi,

Zhangsan yesterday eat-Asp something,

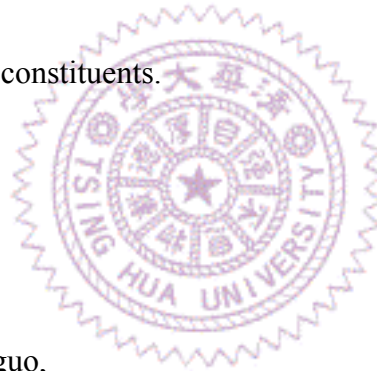
*dan wo buzhidao [~~Zhangsan zuotian chi-le~~] shi shemo

but I not-know [~~Zhangsan yesterday eat-Asp~~] be what

‘Zhangsan ate something yesterday, but I don’t know what’

張三昨天吃了某個東西，*但我不知道[張三昨天吃了]是甚麼

The second difficulty with this account concerns constituency. Specifically, the category which is deleted in (159)b, repeated here as (163), is unlikely to be a single constituent (non-constituent). To derive the adjunct-focus sentence *Wo bu zhidao shemoshihou* “I don’t know when”, a deletion rule or PF empty form must replace the non-continuous constituent *Zhangsanchi pingguo* “Zhangsan --- eat apple”. Of course we can say that there are two different deletion rules which apply to the two different syntactic elements, but in order to analyze this discontinuous constituent as two different categories, we have to further explain why “subject focus and adjunct focus cleft” target different constituents.



[adjunct focus]

(163) Zhangsan chi-le pingguo,

Zhangsan ate apple,

dan wo buzidao [~~Zhangsan~~-shi sheme-shihou ~~chi-le pingguo~~-(de)]

but I not-know [Zhangsan FOC what-time ate apple (DE)]

張三吃了蘋果；但我不知道[張三是甚麼時候吃了蘋果(的)]

A third mystery which complicates the cleft account of Chinese sluicing is the distribution of *zenmoyang* ‘how’. In contrast to other *wh*-phrases, *zenmoyang* can

never be used to create a grammatical sluice, regardless of its interpretation. On the other hand, *zenmoyang* is always fine in a pseudo-cleft construction, whether it is being used to describe manner or means (165)-(166).

(164) a. *Zhangsan zuotian qu-le taibei le, dan wo buzhidao shi zenmoyang

Zhangsan yesterday go-Asp Taipei Past, but I not-know FOC how

‘Zhangsan went to Taipei yesterday, but I don’t know how (means)’

*張三昨天去了台北了，但我不知道是怎麼樣

b. *Zhangsan kai che, dan wo buzhidao shi zenmoyang

Zhangsan drives car, but I not-know FOC how

‘Zhangsan drives car, but I don’t know how (manner)’

*張三開車，但我不知道是怎麼樣

(165) a. Zhangsan shi zenmoyang qu-le taibei (de)

Zhangsan FOC how go-Asp Taipei (DE)

‘How did Zhangsan go to Taipei?’

張三昨天是怎麼樣去了台北(的)

b Zhangsan shi zuo kongche qu-le taibei (de)

Zhangsan FOC sit bus o-Asp Taipei (DE)

‘It is by bus that Zhangsan went to Taipei’

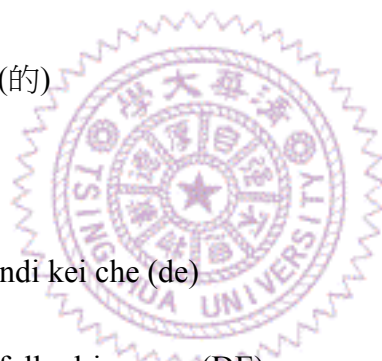
張三是坐公車去了台北(的)

(166) a. Zhangsan shi zenmoyang kai che (de)

Zhangsan FOC how drive care (DE)

‘How did Zhangsan drive cars?’

張三是怎麼樣開車(的)



b. Zhangsan shi xiaoxindi kei che (de)

Zhangsan FOC carefully drive care (DE)

‘It is carefully that Zhangsan drives cares.’

張三是小心地開車(的)

Therefore, a cleft account of Chinese sluicing must take steps to explain this discrepancy. In the following section, we will show how the pseudo-cleft structure in Chinese can derive a sluicing-like construction.

4.3.4 Derivation from the Pseudo-Cleft

To examine the derivation of Chinese sluicing from the pseudo-cleft construction, we first need to observe the distribution of the pseudo-cleft construction, shown in (167).

We can see that the pseudo-cleft in Chinese is formed by inserting a relativization marker “*de*” and a focus marker “*shi*” before the focused nominal.

[subject focus]

(167) a. zuotian chi pingguo de shi Zhangsan/shei

yesterday eat apple de FOC Zhangsan/ who

‘The person who ate apples yesterday is Zhangsan/ *who’

昨天吃蘋果的是張三/誰

[object focus]

b. Zhangsan zuotian chi de shi pingguo/shemo

Zhangsan yesterday eat DE FOC apple/ what

‘The thing that Zhangsan ate yesterday was apples/ *what’

張三昨天吃的是蘋果/甚麼

[adjunct focus]

c. *Zhangsan chi pingguo de shi zuotian / shemo-shihou

Zhangsan eat apple DE FOC yesterday/ what-time

‘The time when Zhangsan ate apples was yesterday/*when’

*張三吃蘋果的是昨天/甚麼時候

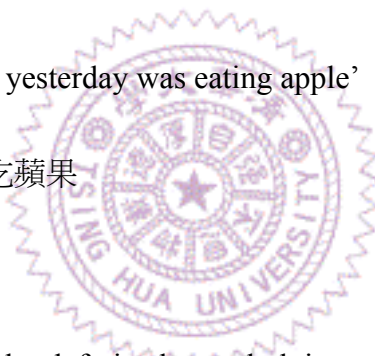
[VP focus]

d. Zhangsan zuotian *(zuo) de shi chi pingguo

Zhangsan yesterday *(do) DE FOC eat apple

‘What Zhangsan did yesterday was eating apple’

張三昨天(做)的是吃蘋果



If we assume that a pseudo-cleft is the underlying structure of the sluicing-like construction, the derivation would look like (168).

(168) a. zuotian mouren chi-le pingguo, dan wo buzhidao [~~chi pingguo de~~] shi shei

yesterday someone eat-ASP apple, but I not-know [~~eat apple DE~~] FOC who

‘someone ate apples yesterday, but I don’t know the person who ate apples’

昨天某人吃了蘋果，但我不知道[吃蘋果的]是誰

b. Zhangsan chi-le mouge-dongshi, dan wo buzhidao [~~Zhangsan chi de~~] shi shemo

Zhangsan eat-Asp something, but I not-know [Zhangsan eat DE] SHI what

‘Zhangsan ate something, but I don’t know the thing that Zhangsan ate’

張三吃了某個東西，但我不知道[張三吃的]是甚麼

Of course, there are some challenges for a Pseudo-Cleft-derived account of the Sluicing-like construction. First of all, we have to make sure that the derivation in (168) entails the deletion of some constituent. It is reasonable to analyze the bracketed part *chi pingguo de* in (168), and *qu taibei de* and *Zhangsan da de* in (169) as headless relatives. We can also assume that there is only one empty head in each of (169)a. and b, since in Chinese, a general nominal can be omitted when it is the head of a relative clause. This is an independent phenomenon in this language, as shown in (170) and (171).

(169) a. mouren qu-le taibei, dan wo buzhidao [~~qu taibei de e~~] shi shei

someone go-Asp Taipei, but I not-know go Taipei DE FOC who

‘someone went to Taipei, but I don’t know the person who went to Taipei’

某人去了台北，但我不知道[去台北的e]是誰

b. Zhangsan da-le mouren, dan wo buzhidao [~~Zhangsan da de e~~] shi shei
 Zhangsan hit-Asp someone, but I not-know [Zhangsan hit DE *e*] FOC who
 ‘Zhangsan hit someone, but I don’t know the person whom Zhangsan hit’
 張三打了某人，但我不知道[張三打的~~e~~]是誰

(170) [da-ren de [e]] juehui shi Laowang
 hit.person DE definitely FOC Mr. Wang
 ‘the person who hit others is definitely Mr. Wang’
 [打人的[e]]絕對是老王

(171) zai Taiwan, [mai-rou de [e]] dou hen youqian
 in Taiwan sell.meat DE all very have.money
 ‘In Taiwan, people who sell meat/butchers are rich.’
 在台灣，[賣肉的[e]]都很有錢

Another minor challenge is that when the antecedent clause is a pseudo-cleft, the deletion must be applied as in (172). In a normal sluicing, however, the antecedent clause is a simple declarative as in (173). In this case, the sentence is not perfectly grammatical when PF deletion has occurred in the second conjunct. If we adopt the

strict parallelism principle, we would have to explain how (174) can be derived from a pseudo-cleft, which is basically the mechanism of (173). At last, we have arrived at an analysis where strict PF parallelism is highly respected with relatively few exceptions. The few exceptions which there are can be accounted for by the e-GIVENness principle⁴⁴ (Merchant 2001).

(172) a. Zuotian qu taibei de shi Lisi, dan wo cai jintian [~~qu taibei de e~~] shi Zhangsan

yesterday go Taipei DE FOC LS, but I guess today [~~go Taipei DE e~~] FOC ZS

‘The person who went to Taipei yesterday was L,

but I guess ~~that the person who went to Taipei~~ today was Z’

昨天去台北的是李四；但我聽說今天~~[去台北的 e]~~是張三

b. zuotian Zhangsan chi de shi pingguo,

yesterday Zhansan eat DE FOC apple,

dan wo cai jintian [~~Zhangsan chi de e~~] shi xiangjiao

but I guess today [~~Zhangsan eat DE e~~] FOC banana

‘The thing that Z ate yesterday was apple, but I guess ~~that the thing Z ate~~

today was banana’

⁴⁴ According to this principle, parallelism between two conjuncts is defined by mutual entailment.

昨天張三吃的是蘋果；但我猜今天~~[張三吃的 e]~~是香蕉

(173) a. ? zuotian Lisi qu taibei, jintian ~~[qu taibei de e]~~ shi Zhangsan

yesterday Lisi go Taipei, today ~~[go Taipei DE e]~~ FOC Zhangsan

‘?Lisi went to Taipei yesterday, ~~the person who went to Taipei~~ today was Zhangsan’

?昨天李四去台北；今天~~[去台北的 e]~~是張三

b. ?Zuotian Zhangsan chi pingguo, jintian [Zhangsan chi de e] shi xiangjiao

yesterday Zhangsan eat apples, today [Zhangsan eat DE e] FOC banana

‘?Zhangsan ate apples yesterday, ~~the thing what Zhangsan ate~~ today was bananas’

?昨天張三吃蘋果；今天~~[張三吃的 e]~~是香蕉

(174) a. zuotian mouren qu taibei, (Pseudo-Cleft Sluicing)

yesterday someone go Taipei,

dan wo buzhidao ~~[qu taibei de e]~~ shi shei

but I not-know ~~[go Taipei DE e]~~ FOC who

‘*someone went to Taipei yesterday, but I don’t know ~~the person who went~~

to Taipei was who'

昨天某人去台北，但我不知道[去台北的e]是誰

b. Zuotian Zhangsan chi mouge-dongshi,

yesterday Zhangsan eat something,

dan wo buzhidao [~~Zhangsan chi de e~~] shi shemo

but I not-know [~~Zhangsan eat DE e~~] FOC what

‘*Zhangsan ate something yesterday, but I don’t know ~~what Zhangsan ate~~

~~was~~ what’

昨天張三吃某個東西，但我不知道([張三吃的e])是甚麼



Finally, although *wh*-adverbials cannot be pseudo-clefted (175), they seem to survive well in sluicing structures (176). Here, we are forced to assume that the underlying structure of (176) is not (175), but (177). The difference between the two constructions is that (175) is a relativization of the sentence *Zhangsan shemeshihou qu taibei* (a), and *Zhangsan zai-nail mai fangzi* (b), respectively. However, the sentences in (177) are both cases of subject-internal NP ellipsis within. As shown earlier in (170) and (171), the head of a relativized general nominal can easily be dropped.

[normal pseudo-cleft]

(175) a. *Zhangsan qu taibei de shi sheme-shihou

zhangsan go Taipei DE be what time

*張三去台北的是甚麼時候

[normal pseudo-cleft]

b. *Zhangsan mai fangzi de shi zai-nali

Zhangsan buy house DE be at-where

*張三買房子的是在哪裡

(176) a. Zhangsan qu-le taibei, dan wo buzhidao shi shemo-shihou.

Zhangsan go-ASP Taipei, but I not-know FOC what-time

‘Zhangsan went to Taipei, but I don’t know when’

張三去了台北，但我不知道是什麼時候

b. Zhangsan mai-le fangzi, dan wo buzhidao shi zai-nali

Zhangsan buy-ASP house, but I not-know FOC at-where

‘Zhangsan bought a house, but I don’t know where’

張三買了房子，但我不知道是在哪裡

(177) a. [_{DP} Zhangsan qu taibei de ~~shijian~~] shi sheme-shihou

zhangsan go Taipei DE time be what time

‘When is the time that Zhangsan went to Taipei’

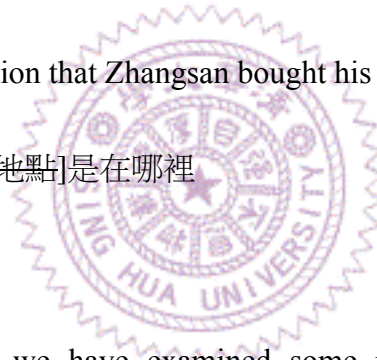
[_{DP} 張三去台北的時間]是甚麼時候

b. [_{DP} Zhangsan mai fangzi de ~~di dian~~] shi zai-nali

Zhangsan buy house DE be at-where

‘Where is the location that Zhangsan bought his house’

[_{DP} 張三買房子的地點]是在哪裡



In the past two sections, we have examined some possible derivations for the sluicing-like construction in Chinese, and demonstrated that pseudo-cleft approach is the better solution for analyzing the derivation of the sluicing-like construction in Chinese.

4.4 The shi-Type of Empty IP and Multiple Remnant Sluicing

In this section, there are two idiosyncratic constructions that I’d like to mention and discuss, with a view to opening up further discussions about them in the future. Firstly,

the apparent *shi*⁴⁵-type of VP Ellipsis in (178) is discussed in Wu (2002) as the canonical type of VP Ellipsis. But according to the discussion in section 3.3, it is also possible that this is actually an IP-type empty category. Evidence for this proposal comes from the different behavior of the *shi*-type construction in comparison with that of v/V-stranding VP ellipsis. We suggest that “*shi*” is a reference-denoting linguistic element standing in for the IP constituent *qu-le taibei* ‘went to Taipei’ in (179).

(178) Zhangsan qu-le taibei, Lisi ye **shi**

Zhangsan go-Asp Taipei Lisi also SHI

‘Zhangsan went to Taipei, and so does Lisi’

張三去了台北，李四也是



(179) Zhangsan [qu-le taibei]_i, Lisi ye [_{IP} **shi**]_i

Zhangsan go-Asp Taipei Lisi also SHI

‘Zhangsan went to Taipei, and so does Lisi’

張三[去了台北]_i，李四也[是]_i

In another vein, we also know that there are some restrictions on mandarin Chinese

⁴⁵ There are several homophones of *shi* in mandarin Chinese. One of them is a copula, one is the focus marker *shi*, and the other is the pro-form *shi* under discussion here.

multiple sluicing, which make Chinese sluices quite different from their Japanese cognates (cf also Nishigauchi 1998; Takahashi 1994; Chiu 2007). First, the ordering of the *wh*-remnants is absolutely strict. The *wh*-adjunct must follow the *wh*-argument, exhibited in (180)(181).

(180) a. *moren diao-le qian, dan wo bu zhidao *(shi) shei zai-nali*

someone lost-ASP money but I not know *(be) who at-where

'Someone lost money, but I don't know who where'

某人掉了錢，但我不知道是誰在哪裡

b. *..., *dan wo bu zhidao zai-nali *(shi) shei*

but I not know at-where be who

'..., but I don't know where who'

但我不知道是在哪裡*(是)誰

(181) a. *Zhangsan da-le moren, dan wo bu zhidao *(shi) shei weishenme*

Zhangsan hit-ASP someone, but I not know be who why

'Zhangsan hit someone, but I don't know who why.'

張三打了某人，但我不知道*(是)誰為什麼

b. *..., dan wo bu zhidao **weishenme** *(shi) **shei**

but I not know why be who

'..., but I don't know why who'

但我不知道為什麼*(是)誰

Second, multiple sluicing in Chinese is possible only if the antecedents of the two *wh*-remnants are clausemates with each other. Consider the following (182):

(182) moren gaosu Zhangsan [xuexiao you yi-chang yianjian],

someone tell Zhangsan school have one-CL lecture

dan wo bu zhidao *(shi) **shei zai-nali**

but I not know *(be) who at-where

'Someone told Zhangsan that there is a lecture at school, but I don't know who where'

某人告訴張三[學校有一場演講],但我不知道*(是)誰在哪裡

The *wh*-adjunct *zai-nali* 'where' can only be associated with an implicit adjunct in the matrix clause, instead of with the embedded adjunct. We thus get a reading

questioning *who told Zhangsan the news and where he told the news*. It is impossible to get an embedded reading questioning *where the speech would be held*.

Concerning this question of multiple sluicing, Chiu 2007) begins to seek a satisfying analysis, and I am still in the process of solving this problem. The empirical distribution, at least, is obvious enough. Hopefully there will be more discussion about this topic in the future.

4.5 Concluding Remarks

In this chapter, I provided two accounts for the sluicing-like construction in Chinese. Two different underlying mechanisms are suggested to be able to derive the surface form of the sluicing-like construction in Chinese: predication and focus-related mechanisms. Some of the focus-related phenomena we outlined in this chapter forced us to turn to the latter kind of mechanisms, and therefore, we have examined cleft, pseudo-cleft, and focus fronting analyses. Eventually, I concluded that the “pseudo-cleft” account is the most likely source of the sluicing-like construction in Chinese. At the end of this chapter, we outlined the distribution of two different idiosyncratic constructions for further study.

CHAPTER 5. CP *PRO*-FORM IN TAG QUESTIONS

- 5.1 Introduction
- 5.2 Three Observations on the Form
 - 5.2.1 Subject
 - 5.2.2 Polarative Negation
 - 5.2.3 Verbal Element
 - 5.2.4 Proposal
- 5.3 Predicate Tags: Verbal Tag Questions
- 5.4 Syntactic Analysis of Invariable Tag Questions
 - 5.4.1 Distribution
 - 5.4.2 Polarative Negative as Affirmative Response to a Proposition
 - 5.4.3 Periphery Elements
 - 5.4.3.1 FORCE: CP-*pro* is Discourse-related
- 5.5 Antecedent
- 5.6 Theoretical Implications
 - 5.6.1 English Tag Questions
 - 5.6.2 On the Empty Phrasal Categories
- 5.7 Concluding Remarks

5.1 Introduction

This chapter discusses tag questions in Chinese and argues for an analysis of empty CP as a *pro*-form. It will be shown that there are syntactically two types of tag questions –(i) invariable tag questions (including the A-not-A form and the particle form) and (ii) verbal tag questions. In this thesis, I adopt an account of the verbal type of tag question in Chinese as arising from syntactic predication between the tag and an empty CP subject. On the other hand, the invariable tag is handled by Rizzi's

(1997; 2004) split CP analysis. Both types of tag questions are abbreviated “yes-no questions” attaching to an empty CP constituent.

English tag questions are generally in the form of (183)-(185). They are abbreviated forms of yes-no questions, which display Aux-inversion⁴⁶ surface order, and attach to indicative clauses. These tags comprise the pronominal subject and the verbal element (with copular, do-support, or Aux).

(183) Mary is good at tennis, isn't she?

(184) Mary doesn't speak Chinese, does she?

(185) Mary cannot go to the party, can she?

There are mainly three types of tag questions in Chinese -- A-not-A type (186), particle type (187), and verbal type (188). Verbal tag questions can also appear in either A-not-A form or particle form⁴⁷. Both A-not-A and the particle formation can be used independently to construct yes-no question in Chinese. A-not-A operator mostly operates on verbal/adjectival constituents⁴⁸, while the particle attaches in

⁴⁶ This is referred to as “T-to-C movement” in the more recent minimalist framework.

⁴⁷ Modal tags are singled out for some other independent properties, which will be described later in the paper.

⁴⁸ Generally, yes-no questions are formed by iterating an A-not-A form on a verbal/adjectival element in Chinese, as in (1)(2). Tag questions constitute an exception to the general A-not-A formation pattern. Terms of confirmation, such as *dui* ‘correct’ or *xing* ‘able’, can always occur in A-not-A form in tag questions, although they are not able to do so in the general sentence in (3).

sentence final position.

(186) A-not-A type

Ni shang-ci na-le wode shu, **you-mei-you?** / **dui-bu-dui?**

You last.time take-Prf my book exist-not-exist correct-not-correct

‘you took my book last time, didn’t you?’

你上次拿了我的書，有沒有？ / 對不對？

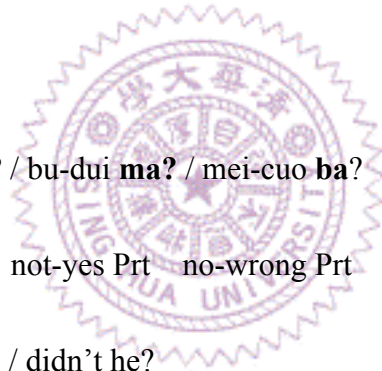
(187) Particle type

Ta qu-le taibei, dui **ma?** / bu-dui **ma?** / mei-cuo **ba?**

He go-Asp Taipei, yes Prt not-yes Prt no-wrong Prt

He went to Taipei, *did he? / didn’t he?

他去了台北，對嗎？/不對嗎？/ 沒錯吧？



(1) Zhangsan qu-bu-qu taibei?
Zhangsan go-not-go Taipei
‘Will Zhangsan go to Taipei?’
張三去不去台北？

(2) Zhansan xi-bu-xihuan wo?
Zhangsan like-not-like me
‘Does Zhangsan like me?’
張三喜不喜歡我？

(3) *Zhangsan dui-bu-dui qu taibei?
Zhangsan correct-not-correct go Taipei

(188) Verbal tag

Zhangsan keyi qu taibei, keyi ma? / ke-bu-keyi?

Zhangsan can go Taipei, can Prt? / can-not-can

‘Zhangsan can go to Taipei, can’t he?’

張三可以去台北，可以嗎？/可不可以？

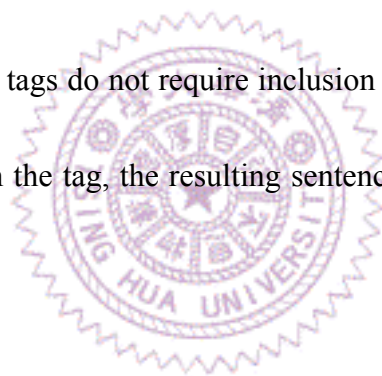
In this chapter, I will examine three aspects of tag question structure: (i) subject (ii) negation, and (iii) verbal element. Based on the evidence from these observations, we will argue that Chinese tags are related to CP empty categories. This paper is organized as follows: Section 5.2 examines the form of Chinese tag questions in the respects mentioned above. Hypotheses and proposals will be included in this section, too. Sections 5.3 and 5.4 provide syntactic observations to argue for two structural analyses concerning CP *pro*-form. The verbal type of tag question is analyzed as involving predication, while the invariable types of tags are accounted for under the split CP hypothesis. Section 5.5 tests the tag questions against the antecedent requirement. Section 5.6 discusses some theoretical implications of our account. Finally, section 5.7 concludes the whole study.

5.2 Three Observations on the Form

In this section, we will introduce three syntactic observations concerning the form of Chinese tag questions in comparison with English.

5.2.1 Subject

As in English, Chinese tag questions bear traces of the yes-no question format, as in (186)(187)(188). Both A-not-A structure and final particle attachment are ways of forming yes-no questions in Chinese⁴⁹. Their functions are just like Aux Inversion in English. However, Chinese tags do not require inclusion of the pronominal subject. If the subject were realized in the tag, the resulting sentences would be ungrammatical, as in (189)(190).



(189) Ni shang-ci na-le wode shu,

You last.time take-Prf mybook

***ni** dui-ma? / **ni** bu-dui-ma? / **ni** dui-bu-dui?

you correct-Prt / you not-correct-Prt / you correct-not-correct

⁴⁹ Two examples of yes-no questions in Chinese are given in the following (4)-(5):

(4) Mali piaoliang ma?
Mali pretty prt
'Is Mary pretty?'
瑪莉漂亮嗎?

(5) Mali piao-bu-piaoliang?
Mali pretty-not-pretty
'Is Mary pretty?'
瑪莉漂不漂亮?

‘You took my book last time, didn’t you?’

你上次拿了我的書，*你對嗎？/你不對嗎？/你沒錯吧？

(190) ta qu-le taipei, *ta dui ma? / ta bu-dui ma? / ta mei-cuo ba?

he went Taipei, he correct Prt / he not-correct Prt/ he no wrong Prt

‘He went to Taipei, didn’t he?’

他去了台北，*他對嗎？/他不對嗎？/ 他沒錯吧？

5.2.2 Polaritive Negation

A second idiosyncratic property of Chinese tag questions concerns their negation.

A ‘reversed polarity tag’ is a tag whose negative-positive polarity is the reverse of that

in the main sentence. That is to say, when the antecedent clause is affirmative, the tag

is formed in the negative. When the first conjunct is a negative sentence, the tag must

be affirmative (positive). This phenomenon is observed in English, as in (191)(192).

Chinese, however, does not observe the Double Negative Constraint, which prohibits

the co-occurrence of negation both in the antecedent clause and in the tag. Both

positive and negative tags are grammatical following both positive (or affirmative)

and negative antecedents in the first conjunct (193)(194).

(191) John has gone, hasn't he? / *has he?

(192) John hasn't gone, has he? / *hasn't he?

(193) Ta bu qu taibei, shi-ma? / bu-shi-ma? / shi-bu-shi?

he not go Taipei, yes Prt? / not-yes Prt? / yes-not-yes?

'He doesn't want to go to Taipei, does he?'

他不去台北，是嗎？/不是嗎？/是不是？

(194) Ta mei qu taibei, dui-ma? / bu-dui-ma? / dui-bu-dui?

He not go Taipei, yes-Prt? / not-yes-Prt? / yes-not-yes?

'He didn't go to Taipei, did he?'

他沒去台北，對嗎？/不對嗎？/對不對？

5.2.3 Verbal Elements

Finally, there is much literature about the verbal elements available for tag questions.

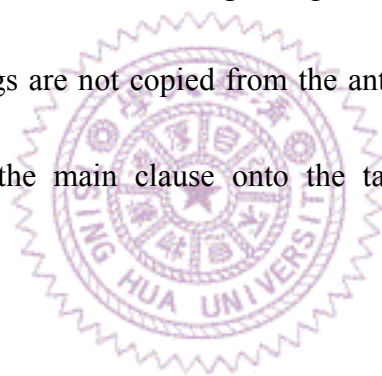
It is argued in (Chang 2006) that the tag verb chosen must agree with the degree of the speaker's assertion: i.e., with the value of the assertion for the [+/-indicative].

Similarly, the interpretation of the tag question as sarcastic is related to the feature [+/- factual]. However, the syntactic (/or structural) nature of tag questions is not

described in Chang's study. Further questions on these matters will be addressed later in this chapter. We start with the differences between tag questions in English and in Chinese.

For all interrogative tags in English, the [+V] or [+AUX] element in the appended tag must match the one occurring in the initial segment. The examples are shown in (183)-(185), repeated here as (195)-(197). This generalization, however, is greatly violated in Chinese. For example, the cases in (198) and (199) are called invariable tag questions. These are equivalent to the '*right*' tag in English, illustrated in (200)⁵⁰.

The verbal forms in the tags are not copied from the antecedent sentences. To insert the verbal element from the main clause onto the tag results in ungrammatical examples as in (201)(202).



(195) Mary is good at tennis, isn't she?

(196) Mary doesn't speak Chinese, does she?

(197) Mary cannot go to the party, can she?

(198) Zhangsan shi laoshi, dui-ma?

Zhangsan be teacher, correct-Prt

⁵⁰ Some English examples of invariable tags are like: *right, ok, don't you know, huh, you know, don't you think, what about you, eh,...*

‘Zhangsan is a teacher, right?’

張三是老師，對嗎？

[invariable type]

(199) Zhangsan bu qu shangke, xing-ma?

Zhangsan not go class-attending, able-Prt

‘Zhangsan won’t go to the class, is it ok?’

張三不去上課，行嗎？

[invariable type]⁵¹

(200) We should respect teachers, right?

(201) *Zhangsan **dui** shi laoshi, dui-ma?

Zhangsan correct be teacher, correct-Prt

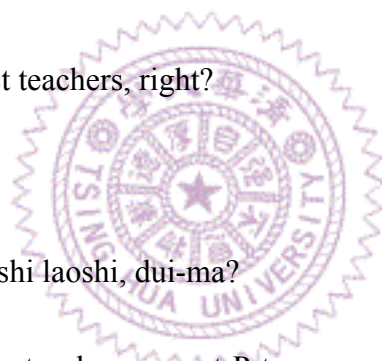
‘Zhangsan is a teacher, right?’

*張三對是老師，對嗎？

(202) *Zhangsan **xing** bu qu shangke, xing-ma?

Zhangsan able not go class-attending, able-Prt

‘Zhangsan won’t go to the class, is it ok?’



*張三行不去上課，行嗎？

Modals are the second type of verbal element which can host a tag. (203) is a typical example of a deontic modal, while (204) is an example of an epistemic modal.

(203) Zhangsan gan gaokong-tantiao, gan-ma? / bu-gan ma? / gan-bu-gan?

Zhangsan dares bungee jumping, dare-Prt Not-dare Prt Dare-not-dare

‘Zhangsan dare to go bungee jumping, doesn’t he?’

張三敢高空彈跳，敢嗎？/不敢嗎？/敢不敢？

(204) Zhangsan yinggai qu taibei, yinggai ma? / bu-yinggai ma

Zhangsan should go Taipei, should Prt? / not-should Prt

‘Zhangsan should go to Taipei, shouldn’t he?’

張三應該去台北，應該嗎？/不應該嗎？

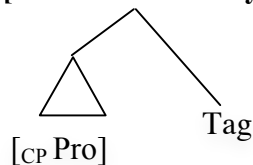
This type of modal tag may lead one to an analysis of tag questions as diverse entities; we will have more to say about this in the next section. Before entering into this discussion, we will outline a proposal to account for these phenomena.

5.2.4 Proposal

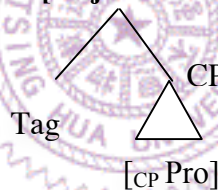
It would be possible to analyze the three varieties of tag questions in Chinese (186)(187)(188) adjuncts (205)(b), complements of CP-*pro* (205)(a), or as elements in the CP periphery (205)(c). The first account (205)(a) analyzes the tag as the predicate of a sentential subject; the second analysis (205)(b) treats the tag as an adjunct attached to the whole CP; the third hypothesis (205)(c) endorses Rizzi's (1997; 2004) split CP hypothesis by treating the tag as a functional projections in the periphery.

(205)

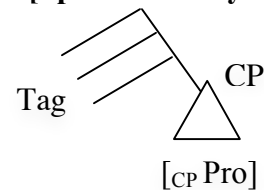
a. [Predication Analysis]



b. [Adjunct Analysis]



c. [Split CP Analysis]



In the following sections, I will demonstrate that the invariable type of tag question is accounted for under the Split CP analysis, while the verbal type of tag question is a predicate in structure.

5.3 Predicate Tags: Verbal Tag Questions

In this section, we argue that verbal tag questions must have null subjects (either

nominal or propositional) because the verbal form is a legal predicate. We have mentioned in section 5.2.3 that the verbal type of tag question (206) could be very different from the variable type of CP tag (207)(208).

(206) ta (keyi) qu taipei, keyi ma? / bu-keyi ma? / ke-bu-keyi?

he can go Taipei, can Prt / not-can Prt / can-not-can

‘He can go to Taipei, can’t he?’

他可以去台北，可以嗎？/不可以嗎？/可不可以？

[verbal tag]

(207) Zhangsan shi laoshi, dui-ma?

Zhangsan be teacher, correct-Prt

‘Zhangsan is a teacher, right?’

張三是老師，對嗎？

[invariable type]

(208) Zhangsan bu qu shangke, xing-ma?

Zhangsan not go class-attending, able-Prt

‘Zhangsan won’t go to the class, is it ok?’

張三不去上課，行嗎？

[invariable type]

First, the verbs used in verbal tag questions are legal independent predicates in Chinese (210)(209). (210) and (209) show these verbs in their predicate function, which requires them to ascribe a feature to a sentential subject (CP) and a nominal (DP) respectively. Second, unsurprisingly, modal verbs appear sentence-finally and host a whole sentence as a sentential subject (211). These data are addressed in Lin and Tang (1995:56).

(209) [Zhangsan] keyi de!

Zhangsan can/able DE

‘Zhangsan is capable (of doing something)’

張三可以的！



(210) [Zhangsan bu chuxi huiyi] ye keyi.

Zhangsan not attend meeting also can

‘It is okay for Zhangsan not to attend the meeting’

[張三不出席會議]也可以

(211) a. Ni zheyang-zuo bu yinggai

(from Lin & Tang 1995:56)

you this.way do not should

‘You should not do it this way’

你這樣做(不)應該

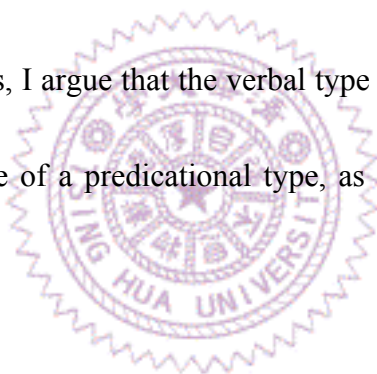
b. wo zheyang fenxi ke-bu-keyi

I this.way analyze can-not-can

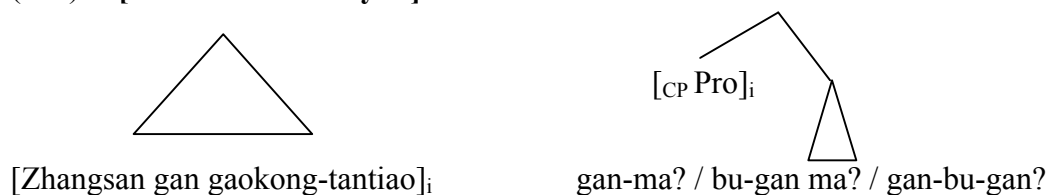
‘Can I analyze it this way?’

我這樣分析可不可以

Based on these observations, I argue that the verbal type of tag questions discussed in section 5.2.3 (203)(204) are of a predication type, as schematically represented in (212).⁵²



(212) a. [Predication Analysis]



b. [Antecedent]_i [CP Pro_i [predicate Verbal tag]]
Sentence 1 [s2 Subject Predicate]

⁵² Thus it is similar to the English tag question in that its domain is over a predicate.

5.4 Syntactic Analysis of Invariable Tag Questions

If the verbal type of tag is predication, what about the invariable type of tag? In this section, we will address this question. Section 5.4.1 considers the distribution of the empty CP pronominal and how it is parallel to its overt counterpart. Section 5.4.2 analyzes the polaritive negation introduced in section 5.2.2 to be the result of the CP constituent's behavior. Section 5.4.3 accounts for the relationship between tag and periphery elements. It is argued that tags are merged in the periphery position of INT, and that they interact with FORCE, TOPIC and FOCUS.

5.4.1 Distribution

The deictic *pro*-form can be realized overtly in Chinese. When it is realized, the overt *pro*-form 'zhe' can only occur linearly preceding, but not following, the tag. This allows us to rule out the adjunction hypothesis for the invariable tag questions (205)(b), because under such an analysis the word order is simply wrong.

(213) Ta mei qu xuexiao, [zhe] xing-ma? / [zhe] bu-dui-ma? / [zhe] dui-bu-dui?

He not go school, this able-Prt / this not-correct-Prt / this correct-not-correct

'He didn't go to school, is it ok?'

他沒去學校，[這]行嗎？/[這]不對嗎？/[這]對不對？

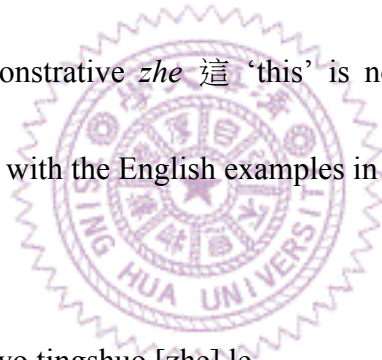
(214) * ta mei qu xuexiao, dui-ma [zhe]? / bu-dui-ma [zhe]? / dui-bu-dui [zhe]?

he not go school, correct-Prt this / not-correct-Prt this / correct-not-correct this

‘He didn’t go to school, is it okay?’

*他沒去學校，對嗎[這]? / 不對嗎[這]? / 對不對[這]?

If we take a closer look at the empty CP *pro* selected by the question tag, we can see that its syntactic distribution is in parallel with that of the deictic demonstrative. The Chinese overt deictic demonstrative *zhe* 這 ‘this’ is not grammatical as a clausal complement. This contrasts with the English examples in (217)(218).



(215) * ta mei qu xuexiao, wo tingshuo [zhe] le

He not go school, I heard this Prt

‘He didn’t go to school, I heard about that’

*他沒去學校，我聽說[這]了

(216) * ta qu-le xuexiao, wo zhidao [zhe] le

He go-Asp school, I know this Prt

‘He has gone to school, I knew that’

*他去了學校，我知道[這]了

(217) John didn't go to school, again. I heard (about) that.

(218) John didn't go to school, again. I know that.

The empty *pro* (with the tag) is similarly not allowed to be taken as a clausal complement in (220)(221). More examples, shown in (213)/(219) and (215)(216)/(220)(221) demonstrate the parallel behavior of overt and covert CP *pro*-forms. (213) and (219) show that *zhe* 'this' and empty *pro* appear in the same position preceding the tag. A comparison of (215)(216) and (220)(221) shows that neither *zhe* 'this' nor CP *pro* is viable as a complement.

(219) Zhangsan mei qu xuexiao,

Zhangsan not go school,

pro (xing-ma)? / *pro* (bu-dui-ma)? / *pro* (dui-bu-dui)?

able-Prt / not-correct-Prt / correct-not-correct

'He didn't go to school, is it ok?'

張三沒去學校，[*pro* 行嗎]? / [Pro 不對嗎]? / [Pro 對不對]?

(220) *[Zhangsan you mei-qu xuexiao]_i,

Zhangsan again not-go school

‘Zhangsan didn’t go to school again,

ta mama ye tingshuo [*pro*_i [(xing-ma? / bu-dui-ma? / dui-bu-dui?)]] le

his mother also heard able-Prt / not-correct-Prt / correct-not-correct]] Prt

his mother also heard that’

*[張三又沒去學校]_i，他媽媽也聽說[*Pro*_i[行嗎？/不對嗎？/對不對？]]了

(221) *wo zhidao [Zhangsan mei qu xuexiao]_i,

I know [Zhangsan not go school]

‘I’ve already known that Zhangsan didn’t go to school

Lisi ye tingshuo [*Pro*_i [xin-ma? / bu-dui-ma? / dui-bu-dui?]]

Lisi also heard able-Prt? / not-correct-Prt? / correct-not-correct Prt

INTENDED: ‘Lisi also heard that’

*我知道[張三沒去學校]_i，李四也聽說[*Pro*_i[行嗎？/不對嗎？/對不對？]]

We have seen in this section that the distribution of the overt CP pro-form *zhe* ‘this’ is

somehow in parallel with its covert counterpart.

5.4.2 Polaritive Negative as Affirmative Response to a Proposition

As mentioned in section 5.2.2, Chinese does not observe the Double Negative Constraint, but English does. This contrast could be explained if the tags in Chinese (repeated in (222)(223)) serve as confirmation, inquiry, or denial of the whole proposition, but in English, the tag is the residue of a VP ellipsis after Aux-Inversion.

If this is on the right track, the affirmation/negation of the tag question is irrelevant to the negation in the antecedent conjunct in Chinese.

(222) Ta bu qu taibei, shi-ma? / bu-shi-ma? / shi-bu-shi?

he not go Taipei, yes Prt? / not-yes Prt? / yes-not-yes?

‘He doesn’t want to go to Taipei, does he?’

他不去台北，是嗎？/不是嗎？/是不是？

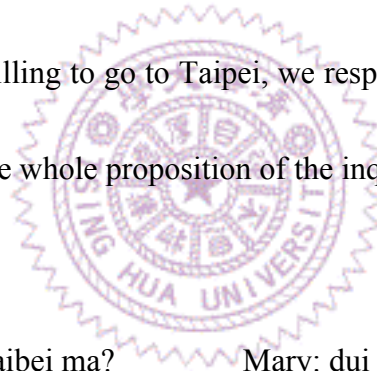
(223) Ta mei qu taibei, dui-ma? / bu-dui-ma? / dui-bu-dui?

He not go Taipei, yes-Prt? / not-yes-Prt? / yes-not-yes?

‘He didn’t go to Taipei, did he?’

他沒去台北，對嗎？/不對嗎？/對不對？

Independent evidence for the different targets of empty phrasal categories between English and Chinese comes from the choice of affirmation/ negation markers in turn taking. The heads of (invariable) tags in Chinese are also discourse reply markers: they can be used to reply to a question as in (224). However, in contrast with English, we use “yes” or “no” when responding to the whole proposition in Chinese. Looking at (224) again, when the question of *John* is negative *Ni bu qu taibei ma* ‘Won’t you go to Taipei’, we answer *dui* ‘yes’ to express the unwillingness of *going to Taipei*. On the other hand, if we are willing to go to Taipei, we response *bu* ‘no’. This is because we are simply answering the whole proposition of the inquirer.



(224) John: *Ni bu qu taibei ma?* Mary: *dui a, wo bu qu.*

You not go Taipei Prt yes Prt, I not go

‘Won’t you go to Taipei?’ Lit. **Yes**, I will not go.

Int. **No**, I won’t go.

你不去台北嗎？ 對啊，我不去。

The situation in English is expected to be different, since English involves a response to the predicate rather than the CP proposition. So, we answer ‘no’ in the case of

(225).

(225) A: Don't you want to go to Taipei?

B: **No**, I don't want to.

5.4.3 Periphery Elements

In the last section, we showed that invariable tags in Chinese are highly CP-related.

This observation is also supported by Rizzi's split CP theory, which permits functional elements to be located in the CP periphery as shown in (226) below. This section focuses on the interaction between the tag and the periphery elements. We will show that Chinese tag is really a CP element because it has some effect on the FORCE (also known as mood) of the sentence. We will start by examining the force of sentences.

(226) FORCE (TOP*) INT (TOP*) FOC (TOP*) FIN IP

(Rizzi1997; 2004)

5.4.3.1 FORCE: CP-*pro* is Discourse-related

It is interesting to observe the interaction between the empty CP and the form of a tag question. Hasegawa (2009) reports that the force (typing) of a clause affects the predicate form via selection restriction (227). It is observable in matrix clause as discourse and speech act of a sentence; while in embedded clause on its selection restriction with the matrix clause.

(227) a. *Dooka tesuto-o yosasiku* {site *kudasai* / **si-ta* / **su-ru* / **su-ru-daroo*}.

please test-ACC easy do-favor do-past do-pres do-pres-provisional

‘Please make the test easy.’ (request form)

b. *Ittai* {*dare-ga* ki-ta *no* / **hayaku kite-kudasai* / **Taro-ga ki-ta*}.

ittai who-NOM come-past Q quickly come-favor T. -NOM come-past

‘Who the hell came?’ (question ending)

[From Hasegawa 2007]

Data from four types of syntactic moods – imperatives, suggestives, interrogatives, and exclamatives are listed on the following pages so that their interaction with tag questions can be observed.

Imperative

(228) kai men, ?xing-ma? / ? bu-xing-ma? / ?xing-bu-xing?

open door, able-Prt? / not-able-Prt? / able-not-able?

INTENDED: ‘open the door, will you?’

開門，?行嗎？/?不行嗎？/?行不行？

(229) Kai men, * shi-ma / * bu-shi-ma? / *shi-bu-shi?

open door, * yes-Prt / * not-yes-Prt? / * yes-not-yes?

INTENDED: ‘open the door, alright?’

開門，*是嗎？/*不是嗎？/*是不是？



Suggestive

(230) Ni bie name chongdong, hao-ma? / hao-bu-hao?

You not so impulsive, good-Prt? / good-not-good?

‘Please don’t be so impulsive, ok?’

你別這麼衝動，好嗎？/好不好？

(231) Women yonggong dian, hao-ma? /bu-hao-ma? / hao-bu-hao?

We study.hard a.bit, good-Prt? / not-good-Prt? /good-not-good?

‘Let’s study harder, ok?’

我們用功點，好嗎？/不好嗎？/好不好

Interrogative

(232) *Ta xihuan yuyanxue ma, shi-ma? Shi-bu-shi?

He like linguistics Prt Yes-Prt? Yes-Neg-Yes?

Lit. ‘Does he like linguistics? Doesn’t he?’

*他喜歡語言學嗎，是嗎？是不是？

[yes-no Q]

(233) *Ta bu-shi yuyanxue-jia ma? bu-shi-ma? Shi-bu-shi?

He not.be linguist Part not-Yes-Part? Yes-Neg-Yes?

Lit. ‘He is not a linguist? is he?’ [intended: He **IS** a linguist]

*他不是語言學家嗎？不是嗎？是不是？

[rhetoric Q]

(234) *Ta shi-bu-shi yuyanxue-jia ?shi-ma? Shi-bu-shi?

He be-not-be linguist Yes-Part? Yes-Neg-Yes?

Lit. ‘Is he a linguist? Isn’t he?’

*他是不是語言學家？是嗎？是不是？

[A-not-A Q]

(235) *shei shi yuyanxue-jia? shi-ma? bu-shi-ma? Shi-bu-shi?

Who be linguist Yes-Part? not-Yes-Part? Yes-Neg-Yes?

Lit. ‘who is a linguist ? isn’t he?’

*誰是語言學家？是嗎？

[wh-question]

Exclamative

(236) Yanhuo zhen piaoliang a! shi-ma? / bu-shi-ma? / shi-bu-shi?

Firework really beautiful Prt! yes-Prt? / not-yes-Prt? / yes-not-yes?

‘How beautiful is the firework! isn’t it?’

煙火真漂亮啊！是嗎？/不是嗎？/是不是

(237) Hua duome mei a! shi-ma? / bu-shi-ma? / shi-bu-shi?

Flower so beautiful Prt! yes-Prt? / not-yes-Prt? / yes-not-yes?

‘How beautiful the flowers are! Aren’t they?’

花多麼美啊！是嗎？/不是嗎？/是不是

The generalization is that the imperatives (228)(229) and interrogatives (232)-(235)

(of four types) are not compatible with Chinese tag questions. This can be explained if

we assume that the *pro*-form taken by the tag is a CP category. Imperative and interrogative sentences do not have a truth value, and thus are not qualified to be host of CP-*pro*.

5.4.3.2 Locating the Tag in the Periphery

Now we are ready to locate the tag in the left periphery. Moving downward from FORCE in Rizzi's paradigm in (226), we reach the domain of TOPIC and FOCUS. Chinese is a topic- and focus-prominent language. As indicated in the gloss, Chinese tags scope over only subject, but not topic, in (238)(239). The cases in (240)(241) involve only focus elements, and thus lead to no ambiguity and are not problematic at all; tags have no problem scoping over the focus elements.

Topic

(238) Yu a, Zhangsan meitian chi huangyu,

Fish Prt, Zhangsan everyday eat yellow croaker,

shi-ma? / bu-shi-ma? / shi-bu-shi?

yes-Prt? / not-yes-Prt? / yes-not-yes?

‘As for fish, Zhangsan eats yellow croaker every day, doesn't he?’

‘As for fish, Zhangsan eats yellow croaker everyday, isn't it?’

(Topic >> Tag >> Subject)

魚啊，張三每天吃黃魚，是嗎？/不是嗎？/是不是？

(239) Nachang huó, xìngkuí xiǎofāngduì lái-de zǎo,

that.CL fire, fortunately firemen come-DE early,

shì-ma? /bù-shì-ma? / shì-bù-shì?

yes-Prt? / not-yes-Prt? / yes-not-yes? (Topic >> Tag >> Subject)

‘As for that fire, fortunately the firemen came soon, aren’t they?’

‘As for that fire, fortunately the firemen came soon, didn’t it’

那場火，幸虧消防隊來得早，是嗎？/不是嗎？/是不是？



Focus

(240) (shì/ zhīyǒu) Zhāngsān qù-le tāiběi,

Foc/only Zhāngsān go-Asp Taipei,

duì-ma? / bù-duì-ma? / duì-bù-duì?

correct-Prt? / not-correct-Prt / correct-not-correct

Lit: ‘Only Zhāngsān went to Taipei, right?’

(是/ 只有)張三去了台北，對嗎？/不對嗎？/ 對不對？

(241) (shi/ zhiyou) Zhangsan qu-le taibei,

Foc/only Zhangsan go-Asp Taipei,

shi-ma? / bu-shi-ma? / shi-bu-shi?

yes-Prt? / not-yes-Prt? / yes-not-yes?

Lit: ‘Only Zhangsan went to Taipei, right?’

(是/ 只有)張三去了台北，是嗎？/不是嗎？/ 是不是？

(242) Zhangsan zhi qule taibei, shi-ma? / bu-shi-ma? / shi-bu-shi?

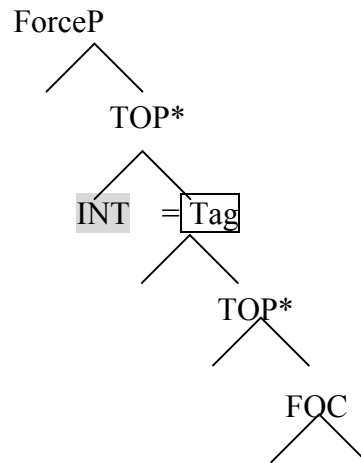
Zhangsan only went to Taipei. yes-Prt? / not-yes-Prt? / yes-not-yes?

Lit: ‘Zhangsan only went to Taipei, right?’

張三只去了台北。是嗎？/不是嗎？/是不是？

To sum up, in terms of the periphery elements, tags cannot scope over topics but they can scope over focus elements. This conclusion leads to the structural analysis (243), in which the tag is located in INT (between FOCUS and TOPIC). The untenable interpretation is the result of selectional restrictions between the adjacent head and complement.

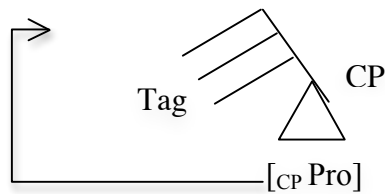
(243) FORCE (TOP*) INT (TOP*) FOC (TOP*) FIN IP



There is one remaining problem: When the overt CP pronoun is realized in the sentence, it precedes the tag. We therefore need a rule to switch the order of the tag in [INT CP] and the empty *pro* form. My analysis of the Chinese invariable-type tag questions is given in (244).

(244)

[Split CP Analysis]



5.5 Antecedent

As we established earlier in this thesis, an instance of true deletion requires a linguistic antecedent. A discourse antecedent is not qualified to license PF deletion.

The example in (245) seems to indicate that the tag construction has been created

through PF deletion, since it is ungrammatical without the phonological antecedent.

However, Chinese anaphors are not regularly subject to backward binding (246)(247).

This effect might be nullified in cases like (245).

(245) *dui-bu-dui? Dui-ma? Zhangsan zongshi ai daoluan.

correct-not-correct? Correct-Prt? Zhangsan always love make.trouble

‘*doesn’t he? Zhangsan loves to make troubles’

*對不對？對嗎？張三總是愛搗亂。

(246) *Taziji_i shi [Lisi de xuesheng]_i

Himself be LS DE student

Int ‘He (, himself) is Lisi’s student’

*[他自己]_i 是 [李四的學生]_i

(247) *[bici]_i zui zhenxi [womenban tongxue]_i

Each other most cherish our.class classmate

Int ‘Classmates of our class cherish each other the most’

*[彼此]_i 最珍惜 [我們班同學]_i



5.6 Theoretical Implications

In this section, I discuss some possible consequences of my proposal. The first concerns the parametric differences between Chinese and English tag questions. After comparing the two languages and the two types of tags, we can give a tentative analysis of English tag questions as well, as shown in 5.6.1 Second, it is important that we consider what this thesis contributes to the whole paradigm of deletion phenomena. This is discussed in 5.6.2.

5.6.1 English Tag Questions

Three aspects of Chinese tag questions have been mentioned in comparison to English tag questions in this chapter. It is plausible to give a tentative account of English tag questions at this stage, on the basis of this comparison. As we saw in section 5.1, English tag questions, repeated in (248)-(250), could be analyzed as deriving from VP deletion/TP deletion on the yes-no questions. Evidence for such an account comes from the fact that subject and verbal elements are still included in the English tag, in the form of inverse Aux. Therefore, we can derive English tag questions as illustrated in (251).

(248) Mary is good at tennis, isn't she?

(249) Mary doesn't speak Chinese, does she

(250) Mary cannot go to the party, can she?

(251) [revised from Quirk (1985:810)]

a. T-to-C movement (Aux Inversion): the first step of a yes-no question formation.

b. pronominalization: replace the subject with a pronoun of the same formal feature.

co-index the pronoun with the subject in the first conjunct.

c. VP/TP ellipsis: the size of the deletion is still open for discussion.

5.6.2 On the Empty Phrasal Categories

This study contributes, in some degree, to the general typology of empty phrasal categories being developed in the literature. To the currently-accepted paradigm shown in (252)-(255)⁵³, we are able to add the newly-introduced CP-level empty category, shown in (256).

[from Gengel 2006]

(252) Claire read a book, and Heather did too. (*VP ellipsis*)

(253) Claire read more books than Heather did magazines. (*pseudo gapping*)

(254) Claire read a book and Heather a magazine. (*Gapping*)

⁵³ The paradigm is given in English, although I am not sure what could be counted as a CP-empty element in English at this stage. The invariable types of examples, such as '...right? ...okay?' may be possible candidates.

(255) Claire read a book but I don't know which. (Sluicing)

(256) Ni shang-ci na-le wode shu, you-mei-you? /dui-bu-dui? (Tag question)

You last.time take-Prf my book exist-not-exist Correct-not-correct

'you took my book last time, didn't you?'

Also, if the English tag question is a member of the TP empty elements, then it should either behave like a sluicing construction, or should differ from it only with respect to the domain of ellipsis. Further research into this area would do well to include an examination of the interaction of T-to-C movement and deletion.⁵⁴

(257) Speaker A: Mary will see someone.

Speaker B: Who ~~[[c][TP Mary will see?]]~~ (Revised from Lasnik 2006)

If we assume Merchant (2001)'s two-part-analysis of sluicing, we can argue that the obligatory raising of T to C in matrix interrogatives (258) does not apply in matrix sluicing (257). If obligatory raising did apply, the remnant would include the AUX and the *wh*-phrase.

⁵⁴ There are three possible solutions provided in (Craenenbroeck & Aniko Liptak 2007); this thesis has argued for the third one of these. [a] deletion of a bar-level constituent [b] existence of two layers of XP, one of which was deleted [c] deletion bleeding V-movement.

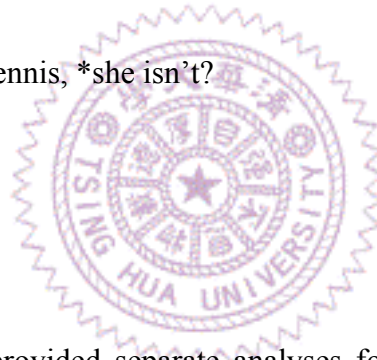
(258) a. *Who Mary will see?

b. Who will Mary see?

The Aux-Inversion observed in tag questions is repeated in (259)-(260). At the current time, I still don't have a satisfactory answer to many questions on this subject; I expect this to be a fruitful area for future research.

(259) Mary is good at tennis, isn't she?

(260) Mary is good at tennis, *she isn't?

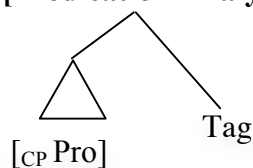


5.7 Concluding Remarks

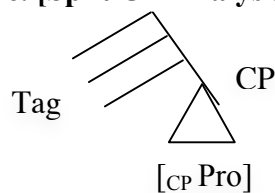
In this chapter, we have provided separate analyses for two different types of tag questions. As shown in (261), the predication construction (261)(a) is found in verbal tag questions (188), while the invariable tag questions (186)(187) fit into the CP periphery analysis (261) (c).

(261)

a. [Predication Analysis]



c. [Split CP Analysis]



CHAPTER 6 CONCLUSION

Before concluding, let us first return to the three research questions mentioned in the first chapter of this dissertation.

1. How many constructions involve phrasal empty categories in Chinese?

Other than Wu (2002), Wang (2002), and Wei's (2004) analysis of VPE, gapping, and sluicing, respectively, I propose that the constructions involving empty phrasal categories in Chinese also include tag question constructions, ellipsis of the light verb complement, and NP deletion. Other possible structures, such as those shown in (262)(263), await further research to be fully understood.

(262) Fragment answers (only in conversation)

A: Laoshi zhuotian ma-le shei?

teacher yesterday scold-Asp who

老師昨天罵了誰？

B: Zhangsan.

ZS

張三

(263) Modal Complement Ellipsis / Null Complement Ellipsis

- a. * Zhangsan keneng qu taibei, Lisi ye keneng.

Zhangsan might go Taipei Lisi also might

‘Zhangsan might go to Taipei, and Lisi might, too’

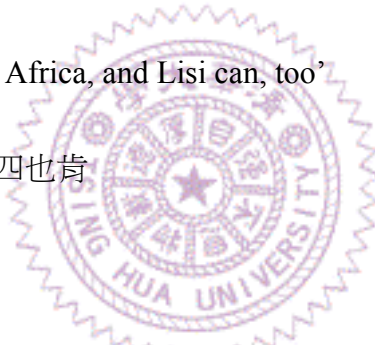
*張三可能去台北，李四也可能

- b. Zhangsna ken qu feizhou, Lisi ye ken.

Zhangsan can go Africa Lisi also can

‘Zhangsan can go to Africa, and Lisi can, too’

張三肯去非洲，李四也肯



- c. Zhangsan renwei Lisi bugou yongkong, Wangwu ye renwei.

Zhangsan think Lisi not.enough study.hard wangwu also think

‘Zhangsan think Lisi doesn’t work hard enough, and Wangwu think so, too’

張三認為李四不夠用功，王五也認為[e]

2. What is the constituency (or size) of the deletion domain? Is “Phase” the deletion domain in Chinese? Does the operation take place in the domain licensed by the phase head or not?

A part of this study discussed the domain of deletion phenomena in Chinese. Following the phase theory of Chomsky (2001;2002), it is interesting to observe the syntactic operation of deletion precisely targets the proposed phase domains: CP, vP and DP, respectively. We further find that PF deletion targets the complements of the phase heads, such as VP and NP.

3. What is the nature of the phrasal empty categories? Are they deletions (Merchant 2001)? *pro*-Forms (Lobeck 1993, 1995)? LF copies onto syntactically null parts (CLM 1995)? Or something else entirely?

This thesis has examined the hypothesis that only DP and CP constituents are possible candidates for *pro*-forms (phrasal empty categories of the type [+anaphoric] [-referential]), while other constructions involves PF ellipsis. I also use some objective tests, such as “extraction test” “pragmatic control” and “functional head licensing” to analyze empty phrasal elements.

Finally, I turn to a brief examination of the theoretical implications of my proposal. Throughout this thesis, I have asked: is it better to have one ellipsis mechanism (ex: PF deletion or LF copy), and two elliptical targets (ex: different syntactic constituents)? The answer is “NO”. It is better to have two mechanisms operating on separate

syntactic targets; the dissimilar nature of the different types of syntactic constituents makes the operation of a single mechanism on both unfeasible. With this conclusion in mind, I have argued that *pro*-form empty categories appear in the CP and DP domains⁵⁵, while PF deletion applies only to the VP and NP constituents.



⁵⁵ This includes the DP subject predicated by an IP, as mentioned in chapter 4 of this thesis.

REFERENCES

- Abney, S. 1987. *The English Noun Phrase in Its Sentential Aspect*. Cambridge: MIT
PhD dissertation.
- Aelbrecht, Lobke. 2009. *You Have the Right to Remain Silent: The Syntactic
Licensing of Ellipsis*. PhD dissertation, Catholic University of Brussels.
- Akmajian, A. 1968. *An Interpretive Principle for Certain Anaphoric Expressions*.
Unpublished ms.
- Algeo, John. 1988. The Tag Question in British English: It's different, I'n'it? *English
World-Wide* 9:2. 171-191.
- Aoun, Joseph & Li, Audrey. 2003. *Essay on the Representational and Derivational
Nature of Grammar: the diversity of wh-constructions*. Cambridge, MA: MIT
Press.
- Arbini, Ronald. 1969. Tag-questions and Tag-Imperatives in English. *Journal of
Linguistics* 5: 205-214.
- Arimoto, M. and Murasugi, K. 2005. *Syouoo-to Sakuzyo Kenkyusya*. ms, Tokyo:
Nanzan University.
- Boeckx, Cedric. & Lasnik, Howard. 2006. Intervention and Repair. *Linguistic Inquiry*.
37.1: 150-155.

- Bouton, Lawrence. 1990. The Imperative Tag--A Thing Apart. *World Englishes* 9: 37-51.
- Bruening, B. 2001. QR Obeys Superiority: Frozen Scope and ACD. *Linguistic Inquiry* 32.2:233-273.
- Cecchetto, Carlo & Donati, Caterina. 2010. On Labeling: Principle C and Head Movement. *Syntax* 13.03: 241-278.
- Chang, C-L. Lisa. 2006. Application of Politeness Theory to Tag Questions Translated from English to Chinese. (附加問句在禮貌理論上的應用:中英譯本之研究). MA thesis, Providence University.
- Chao, Wynn. 1988. On Ellipsis. PhD dissertation, University of Massachusetts, Amherst.
- Cheng, Lisa & Sybesma, Rint. 2009. De 的 as an underspecified classifier: first explorations. *Yuyanxue Luncong* 39.
- Chiu, Liching. 2007. A Focus Movement Account on Multiple Sluicing in Mandarin Chinese. *Nanzan Linguistics*, Special Issue 1. 23-31.
- Chomsky, Noam. 1972. *Syntactic Structures*. The Hague: Mouton.
- Chomsky, Noam. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*, Cambridge, Mass: MIT Press.
- Chomsky, Noam. 2001a. Derivation by phase. In *Ken Hale: A life in language*, ed. by

- Michael Kenstowicz, p1-52. Cambridge, Mass: MIT Press.
- Chomsky, Noam. 2001b. Beyond Explanatory Adequacy. In *MIT Occasional Papers in Linguistics* 20. Distributed by MIT Working Papers in Linguistics.
- Chomsky, Noam. 2005. On Phases. ms. Cambridge: MIT.
- Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics* 3: 239-282.
- Chung, Sandra. 2005. Sluicing and the Lexicon: The Point of No Return. ms. University of California, Santa Cruz.
- Collins, Chris. 2001. Movement without Phrase Structure. *Tools in Linguistic Theory Conference*. Utrecht.
- Corver, Norvert. & van Koppen, Marjo. 2009. Let's Focus on Noun Phrase Ellipsis. *Groninger Arbeiten zur Germanistischen Linguistik* 48: 3-26
- Craenenbroeck. 2007. PF-deletion Versus pro: Towards a Unified Theory of Ellipsis. ms. University of Chicago.
- Culivocer, Peter. 1992. English Tag Questions in Universal Grammar. *Lingua* 88: 193-226.
- Dagnac, A. 2008, French, Modal Ellipsis and the 'Same Subject Constraint'. *Communication à LSRL* 38, University of Illinois at Urbana-Champaign, 4-6 avril.

Del Gobbo, F. 2005. Chinese Relative Clauses: Restrictive, Descriptive or Appositive?

In Proceedings for The XXX Incontro di Grammatica Generativa, ed. by Laura

Bruge, Giuliana Giusti, Nicola Munaro, Walter Schweikert & Giuseppina

Turano, 287-305. Venezia: Cafoscarina.

Ditte Kimps. 2007. Declarative Constant Polarity Tag Questions: A Data-driven

Analysis of their Form, Meaning and Attitudinal Uses. *Journal of Pragmatics*.

39: 270–291.

Fiengo, Robert and May, Robert. 1994. *Indices and identity*. Cambridge, MA: MIT

Press.

Fox, Danny & Lasnik, Howard. 2003. Successive Movement and Island Repair: The

Difference between Sluicing and VP Ellipsis. *Linguistic Inquiry* 34:143-154.

Gengel. 2006. Phase and Ellipsis. NELS 37.

Goldberg. 2005. Verb-Stranding VP Ellipsis: A Cross-Linguistic Study. PhD

Dissertation, McGill University.

Gramley Stephan and Kurt-Michael Patzold. 2004. *A Survey of Modern English*.

London: Routledge.

Hankamer and Sag. 1976. Deep and Surface Anaphora. *Linguistic Inquiry*, 7:391-426.

Hasegawa, Nobuko. 2009. Agreement at the CP Level: Clause Types and the ‘Person’

Restriction on the Subject. *The proceedings of the Workshop on Altaic Formal*

Linguistics 5: 131-152. MITWPL. MIT.

Hoji, Hajime. 1998. Null Object and Sloppy Identity in Japanese. *Linguistic Inquiry* 29.1: 127- 152.

Hsieh, M. 2005. Two Types of Modifiers and Parallelisms Between DPs and TPs in Chinese. *Language and Linguistics*. 6.3: 397-429.

Hu, Ching-chi. 2002. Question Tags in Taiwan Mandarin: Discourse Functions and Grammaticalization. MA. Thesis, National Taiwan Normal University.

Huang, C. -T. James. 1982. Logical Relations in Chinese and the Theory of Grammar. PhD dissertation. Cambridge: MIT.

Huang, C. -T. James. 1984. On the Distribution and Reference of Empty Pronoun. *Linguistic Inquiry*. 15. 4: 531-574.

Huang, C. -T. James. 1987. Remarks on the Status of the Null Object. *Principle and Parameter in Comparative Grammar*

Huang, C.-T. James. 1989. Pro Drop in Chinese: A Generalized Control Approach. in *The Null Subject Parameter*, ed. by O. Jaeggli and K. Safir. D. Reidel, Dordrecht, p. 185-214,

Huang, C.-T. James. 1991. Remarks on the Status of the Null Object. in *Principles and Parameters in Comparative Grammar*, ed. by Robert Freidin, p56-76. Cambridge, MA: MIT Press.

- Huang, C.-T. James. 2009. Lecture given in National Normal University.
- Huddleston, Rodney. 1970. Two Approaches to The Analysis of Tags. *Journal of Linguistics* 6. 215-22.
- Iatridou, Sabine. & von Stechow, Kai. 2009. LSA Institute Class on Modals.
- Jackendoff, Ray. 1971. Gapping and Related Rules. *Linguistic Inquiry* 2.1: 21-36.
- Jackendoff, Ray. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.
- Jackendoff, Ray. 1977. *X-bar Syntax*. Cambridge, MA: MIT Press.
- Jayaseelan, K.A. 1990. Incomplete VP Deletion and Gapping. *Linguistic Analysis* 20:64-81.
- Johnson, Kyle. 2001. What VP Ellipsis Can Do, and What it Can't, but Not Why, in *The Handbook of Contemporary Syntactic Theory*. ed. by Mark Baltin and Chris Collins, p.439-479. Malden, MA: Blackwell Publishers.
- Johnson, Kyle. 2008. A view of QR from Ellipsis. in *Topics in Ellipsis*. ed. by Johnson, Kyle. p.69–94. Cambridge: Cambridge University Press.
- Johnson, Kyle. 2009. Gapping is not (VP) Ellipsis. *Linguistic Inquiry* 40.2: 289-328
- Kamio, A. 1983. Meisiku-no Koozoo. in *Nihongo-no Kihonkoozoo, Sanseidoo*. ed. by K. Inoue. p.77-126. Tokyo.
- Kayne, Richard. 1994. The Antisymmetry of Syntax. MIT Press, *Linguistic Inquiry*

Monograph 25.

Kennedy, Christ. & Merchant, Jason. 2000. Attributive Comparative Deletion.

Natural Language and Linguistic Theory 18.1:89-146.

Larson, Richard. 1998. Events and Modification in Nominals. In *Proceedings from*

Semantics and Linguistic Theory VIII. ed. by D. Strolovitch and A. Lawson

Ithaca. NY: Cornell University.

Larson, Richard. 2007. Order & Interpretation in Prenominal Relative Clauses. *MIT*

Working Papers in Linguistics 54: 101-120. Cambridge, MA: MITWPL.

Larson, Richard. and Takahashi, N. 2002. Order and Interpretation in Japanese

Relative Clauses. Paper presented at the Annual Meeting of the Linguistics

Society of America. San Francisco.

Lasnik, Howard. 1995. A Note on Pseudogapping. *MIT Working Papers in*

Linguistics 27:143-163.

Lasnik, Howard. 2001. A Note on the EPP. *Linguistic Inquiry* 32.2 :356-362.

Lasnik, Howard. 2005. Island Repair, Non-repair and the Organization of the

Grammar. *InterPhases: A Conference on Interfaces in Current Syntactic Theory*,

University of Cyprus.

Lasnik, Howard. 2006. On Ellipsis: Is Material that is Phonetically Absent but

Semantically Present Present or Absent Syntactically? Presentation given in

Nagoya Japan: Nanzan University.

Lasnik, Howard. and M.-K, Park. 2003. The EPP and the Subject Condition under Sluicing. *Linguistic Inquiry* 34:4, 649-660.

Lee, Hui-Chi 2005. On Chinese Focus and Cleft Constructions. PhD Thesis, National Tsing Hua University.

Li, Cai-Lun. 1998. Tag Questions in Mandarin Chinese. MA. Thesis. Taipei: National Cheng-chi University.

Li, Mao-ts'ai. 1977. A Study of Tag Questions in English. MA Thesis. Taipei: National Taiwan Normal University

Li, Y.-H. 2007. Beyond Empty Categories. ms. USC.

Li, Y.-H. 2009. Missing NPs. a talk given in Harvard University.

Li, Ying Cherry. 1980. A Contrastive Study of English and Chinese Cleft and Pseudo-cleft Constructions. MA. Thesis. Taipei: English Research Institute, Taiwan Normal University.

Lin, Jo-Wang and Chih-Chen Jane Tang. 1995. Modals as Verbs in Chinese: a GB Perspective. *The Bulletin of Institute of History and Philology* 66: 53-105.

Lin, Jo-Wang. 1997. Noun Phrase Structure in Mandarin Chinese: DP or NP? *Chinese Language and Linguistics III*. Morphology and Lexicon. ed. by Feng-fu Tsao and H. Samuel Wang. p. 401-434. Taipei: Institute of History and Philology,

Academia Sinica.

Lin, Jo-Wang. 2008. The Order of Stage-level and Individual-level Relatives and Superiority Effects. *Language and Linguistics* 9.4: 839-864.

Lin, T.-H. Jonah. 2001. Light Verb Syntax and the Theory of Phrase Structure. PhD Dissertation, University of California, Irvine.

Lin, T.-H. Jonah. 2006a. Complement-to-Specifier Movement in Mandarin Clause. Ms. National Tsing Hua University.

Lin, T.-H. Jonah. 2006b. Multiple-Modal Constructions in Mandarin Chinese and Their Finiteness Properties. Ms. National Tsing Hua University.

Liu, Chen-Sheng. 2004. Empty Antilogophor. *Journal of East Asian Linguistics* 13: 257–287.

Lobeck, Anne. 1990. Functional Heads as Proper Governors. *NELS* 20: 348-362.

Lobeck, Anne. 1995. *Ellipsis: Functional Heads, Licensing, and Identification*. Oxford University Press, New York.

Lobeck, Anne. 2006. Ellipsis in DP. *The Blackwell Companion to Syntax*. ed. by Martin Everaert and Henk van Riemsdijk. Blackwell Publishing.

McCloskey, James. 1991. Clause Structure, Ellipsis and Proper Government in Irish. in *The Syntax of Verb-Initial Languages, Lingua Special Edition*. p259-302, ed. by James McCloskey.

- Merchant Jason. 2008. An Asymmetry in Voice Mismatches in VP-Ellipsis and Pseudogapping. *Linguistic Inquiry* 39:01.
- Merchant Jason. 2010. Diagnosing Ellipsis. In *Diagnosing syntax*, ed. by Lisa L.-S. Cheng and Norbert Corver. Oxford University Press, Oxford. Submitted March 2010.
- Merchant, Jason. 1999. The Syntax of Silence: Sluicing, Islands, and Identity in Ellipsis. PhD Dissertation, University of California, Santa Cruz.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press: Oxford.
- Merchant, Jason. 2001. Variable island repair under ellipsis, ed. by Kyle Johnson to appear, *Topic in Ellipsis*, Cambridge University Press: Cambridge.
- Moro, A. 2000. Dynamic Antisymmetry, MIT Press, *Linguistic Inquiry Monograph* 38.
- Nishigauchi, Taisuke. 1998. ‘Multiple Sluicing’ in Japanese and the Functional Nature of wh-Phrases. *Journal of East Asian Linguistics* 7:121-152.
- Ntelitheos, D. 2004. Syntax of Elliptical and Discontinuous Nominals. MA Thesis, UCLA.
- Otani, Kazuyo and Whitman, John. 1991. V-Raising and VP-Ellipsis. *Linguistic Inquiry* 22.2: 345-358.

- Rapp, Irene & von Stechow, Arnim. 1999. Fast 'Almost' and the Visibility Parameter for Functional Adverbs. *Journal of Semantics* 16:149-204.
- Richards, Norvin. 2010. *Uttering Trees*. MIT Press, *Linguistic Inquiry Monograph* 56.
- Rizzi, Luigi. 1997. *The Fine Structure of the Left periphery*. In *Elements of Syntax*. ed. by Liliane Haegeman. Dordrecht: Kluwer. P.281-337.
- Rizzi, Luigi. 2004. Locality and Left Periphery. In *Structure and Beyond: the Cartography of Syntactic Structures*, vol.3. ed. by Adriana Belletti. New York: Oxford University.
- Ross, C. 1983. On the Functions of Mandarin *de*. *Journal of Chinese Linguistics* 11.2: 214-246.
- Ross, John R. 1969. Guess who? In *Papers from the Fifth Regional Meeting, Chicago Linguistic Society*, p252-286. University of Chicago, Chicago, Ill.
- Saito, Mamoru. 2004. Ellipsis and Pronominal Reference in Japanese Clefts. *Nanzan Linguistics* 1. 21-50.
- Saito, Mamoru. Lin, Jonah. & Murasugi, Keiko. 2008. N'-Ellipsis and the Structure of Noun Phrases in Chinese and Japanese. *Journal of East Asian Linguist.* 17:247-271.
- Saito, Mamoru. and Murasugi, Keiko. 1990. N'-Deletion in Japanese: A Preliminary Study. *Japanese/Korean Linguistics* 1, 285-301.

- Santos, Ana Lúcia. 2009. *Minimal Answers: Ellipsis, Syntax and Discourse in the Acquisition of European Portuguese*. Language Acquisition and Language Disorders 48. John Benjamins Publishing.
- Simpson, Andrew 2005. Sluicing. LSA lecture.
- Simpson, Andrew. 2002. On the Status of Modifying *de* and the Structure of the Chinese DP. In *On the Formal Way to Chinese Linguistics*, ed. by Sze-Wing Tang and Chen-Sheng Luther Liu, 74-101. Stanford: CSLI
- Soh Hooi Ling. 2007. Ellipsis, Last Resort and the Dummy Auxiliary shi 'be' in Mandarin Chinese. *Linguistic Inquiry* 38.1:178-188.
- Stechow, A. 1996. The Different Readings of Wieder 'Again': A Structural Account. *Journal of Semantics* 13: 87-138.
- Takahashi, Daiko. 1994. Sluicing in Japanese. *Journal of East Asian Linguistics* 3:265-300.
- Takahashi, N. 1997. Hierarchy among Relative Clauses in Japanese. Unpublished ms., SUNY-SB
- Takita, K. 2007. NP-internal Honorification and N'-deletion in Japanese. *Nanzan Linguistics: Special Issue* 1.2: 45-67.
- Tang, J. 2005. Modifier Licensing and the Chinese DP: A Feature Analysis. *Language and Linguistics* 8.4: 967-1024.

- Toosarvandani, Maziar. 2009. Ellipsis in Farsi Complex Predicates. *Syntax* 12.1:60-92
- Tsai, Wei-Tien Dylan. 1994. On Nominal Islands and LF Extraction in Chinese. *Natural Language and Linguistic Theory* 12: 121-175.
- Tsai, Wei-Tien Dylan. 1999. On Economizing the Theory of A-bar Dependencies, Garland, New York. (1994 PhD Dissertation, MIT.)
- Tsai, Wei-Tien Dylan. 2007. Two Types of Light Verbs in Chinese. Paper presented in Symposium on Chinese Syntax and Semantics. Hong Kong: City University of Hong Kong.
- Tsai, Wei-Tien Dylan. 2009. Actuality Entailments and the Topography of Chinese Modals. Paper presented in the 7th GLOW in Asia. India: English and Foreign Languages University, Hyderabad.
- Tsai, Wei-Tien Dylan. and Paul Portner. 2008. Adverb-Modal Interactions and Actuality Entailments in Chinese. Paper presented at IsCLL-11. Taiwan: National Chiao Tung University.
- Von Stechow, Arnim. 1996. The Different Reading of Wieder “Again”: A Structure Account. *Journal of Semantics* 13.2: 87-138.
- Wang, Chyan-An Arthur. 2002. On Sluicing in Mandarin Chinese. MA Thesis. Taiwan: National Tsing Hua University.
- Wang, Chyan-An Arthur. 2005. On Sluicing in Mandarin Chinese. ms.

- Wang, Chyan-An Arthur. 2006. Sluicing and Resumption. NELS 37.
- Wang, Chyan-An Arthur. and Wu, Hsiao-hung Iris. 2005. Sluicing and Focus Movement in Wh-in-situ Languages. To appear in *Penn Working Papers in Linguistics*, 2006:12.1.
- Wasow, Thomas. 1972. Anaphoric Relations in English. Cambridge: MIT PhD dissertation. [Revised version published as Thomas Wasow, *Anaphora in generative grammar*. Ghent: E. Story-Scientia, 1979]
- Wei, Ting-chi. 2004. Predication and Sluicing in Mandarin Chinese. PhD Dissertation, National Kaohsiung Normal University.
- Wu, H-H. Iris. 2002. On Ellipsis and Gapping in Mandarin Chinese. MA Thesis. Taiwan: National Tsing Hua University.
- Xu, Liejiong. 1986. Free Empty Category. *Linguistic Inquiry* 17: 75-94.
- Xu, Liejiong. 2003. Remarks on VP-Ellipsis in Disguise. *Linguistic Inquiry* 34.1: 163-171.
- Yang, C.-Y Barry. 2006. A Note on Island Repair. ms. National Tsing Hua University.
- Zagona, K. 1988. *Verb Phrase Syntax: a Parametric Study of English and Spanish*. Kluwer: Dordrecht.
- Zhang, N. 2004. Move is Reemerge. *Language and Linguistics* 5.1:189-209
- Zhang, Niina. 1998. Argument Interpretation in the Ditransitive Construction. *Nordic*

Journal of Linguistics.

李艷惠 2007〈空語類理論和漢語空語類的辨識與指稱研究〉,《語言科學》 6:2.

P37-47.

蔡維天.2010.〈談漢語模態詞其分佈與詮釋的對應關係〉,即將刊登於《中國語文》。

