



A Modular Theory of Radical Pro Drop

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A Modular Theory of Radical Pro Drop

A dissertation presented

by

Chi-Ming Liu

to

The Department of Linguistics

in partial fulfillment of the requirements

for the degree of

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in the subject of

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A Modular Theory of Radical Pro Drop

Abstract

Mandarin Chinese is said to be a radical *pro*-drop language, in the sense that verbal arguments in this language can be dropped rather freely. However, in this dissertation, I show that the omission of arguments in Mandarin Chinese is in fact constrained by various conditions. First, I demonstrate that the availability of a discourse topic is insufficient to license empty categories in Mandarin Chinese by showing that subject and object positions cannot be left empty at random. Some empty subject positions are neither true instances of nominal ellipsis nor variables bound by discourse topics; instead, they are a side effect of verb or *v*P movement followed by TP-ellipsis. Next, I address the issue of when objects can be “dropped” in Mandarin Chinese. I argue that structural parallelism built on verbal identity between sentences plays an important role in licensing ‘objectless’ sentences. I propose that the mechanism responsible for the creation of such sentences is V-stranding VP-ellipsis rather than argument ellipsis. In the last part of this dissertation, I show that, although we cannot rely on the strength of discourse alone to account for empty categories, the concept of topic-hood is nevertheless implicated in the appearance of certain empty argument positions in sentences used in monologues. I claim that subject *pro* in Mandarin Chinese must have as its antecedent an element located in an A’-position, which can be overt or covert. In addition, I suggest that the differences between Italian, Japanese, and Mandarin Chinese with respect to the use of subject *pro* can be boiled down to the featural properties of the covert topic TOP preceding subject *pro*: this covert topic has inherently valued φ -features in Italian and Japanese, while its counterpart in Mandarin Chinese does not.

The modular theory of radical *pro*-drop developed in this thesis suggests that, although some Mandarin sentences do contain empty categories such as subject *pro*, many supposedly ‘argumentless’ sentences in Mandarin Chinese cannot be considered instances of *pro*-drop; instead, it is large-scale

syntactic mechanisms such as TP-ellipsis and VP-ellipsis that prevent the arguments of the verbs from appearing in the surface structure in these sentences.

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CHAPTER 1

INTRODUCTION

1.1 Background

Sound is a medium that human beings use to conduct a variety of behaviors. We can use it to sing a song or communicate with someone in person or on the phone. It is a commonplace observation in linguistics that human language provides a system of mapping between sound and meaning, and its robust success and efficiency make it a valuable asset for our species. However, if we think about the phenomenon of sound-meaning mapping from a cross-linguistic perspective, we will find that, in reality, sound and meaning do not always go hand in hand, and languages differ considerably in the extent to which deviations from strict sound-meaning correspondence are allowed.

There are many examples of pronounced lexical items in language that serve no purpose in terms of conveying meaning. One such example is the expletive *it* in an English sentence like ‘It seems that John is happy today.’ It is clear that the presence of *it* is not necessary for semantic composition, since we can also say ‘John seems to be happy today’, omitting *it*, and arrive at a semantically equivalent construction.

Conversely, although meanings are mostly expressed by pronounced items, there are cases in which meanings are ‘transmitted’ in the absence of sound. Examples from a variety of languages are presented below.¹

(1) a. Brazilian Portuguese (Farrell 1990)

Eu conheci *ec* numa festa.

I met in a party

‘I met him at a party.’

¹ *ec* and *e* are used throughout this dissertation as abbreviations for the term *empty category*.

- b. German (Ross 1982)

ec hab' ihn schon gesehen.

have him already seen

'I have already seen him.'

- c. Japanese (Hoji 1985)

Dare-ga [Mary-ga *ec* yobu maeni] koko-ni kita no.

who-NOM Mary-NOM call before here-to come Q

'Who came here before Mary called him?'

- d. Mandarin Chinese (Huang 1984)

Zhangsan shuo [*ec* bu renshi Lisi].

Zhangsan say not know Lisi

'Zhangsan said that he does not know Lisi.'

- e. Russian (Gribanova 2013)

[A pair of parents is observing their baby, who is learning to walk and has
just recently resumed walking after falling over]

Ty ne boiš'sja, posle togo kak *ec* upala.

you.DAT NEG scare.2SG after that how fell.SG.F

'You are not worried, after she fell?'

What these sentences have in common is that they are not complete sentences from a syntactic point of view, since either the subject or the object position lacks an overt lexical item. Even so, these sentences are considered grammatical, and speakers of these languages have no problem interpreting them. In (1a), the null argument refers to someone that has been mentioned in the previous discourse; in (1b), the null subject is understood as the speaker; in (1c), the empty object position in the adjunct clause stands for a contextually salient topic; in (1d), the null subject can refer to the matrix subject or a salient discourse topic; in (1e), the unpronounced subject is co-referential with a salient topic in the given context. We can

conclude that, cross-linguistically, phonetic realization is not always necessary for linguistic communication.

Languages that drop arguments do not pattern alike in every respect. There are two significant differences between these languages. First, some of these languages have rich morphology, while some others do not. Some examples from Spanish are provided below.

- | | | | | | | |
|-----|----|----------------------|---------|----|-----------------------|---------|
| (2) | a. | Hablo | español | d. | Hablamos | español |
| | | Speak-1SG | Spanish | | Speak-1PL | Spanish |
| | | ‘I speak Spanish.’ | | | ‘We speak Spanish.’ | |
| | b. | Hablas | español | e. | Hablais | español |
| | | Speak-2SG | Spanish | | Speak-2PL | Spanish |
| | | ‘You speak Spanish.’ | | | ‘You speak Spanish.’ | |
| | c. | Hablo | español | f. | Hablan | español |
| | | Speak-3SG | Spanish | | Speak-3PL | Spanish |
| | | ‘He speaks Spanish.’ | | | ‘They speak Spanish.’ | |

As illustrated in (2), the form of the Spanish verb varies with the person and number of the subject. For example, if the subject is first person singular, the verb has to end with *-o*. Other forms of the verb are not allowed to be used in this case. Mandarin Chinese, on the other hand, does not have this complex inflectional morphology; the Mandarin counterparts of the verbs in (2) all take the same form, which is *shuo* ‘speak.’

The fact that languages like Spanish and Italian allow subjects to be left unpronounced led many people (Taraldsen 1978, 1980; Rizzi 1982, 1986 among others) to propose that this null subject phenomenon is associated with rich morphology. For example, Rizzi (1986) claims that whether or not a language allows null subjects depends on two conditions: a licensing condition and an identification condition. His idea is represented below:

- (3) a. Formal licensing:

pro is Case-marked by X^0 .

- b. Identification:

Let X be the licensing head of an occurrence of *pro*: then *pro* has the grammatical specification of the features on X coindexed with it.

The Formal licensing and Identification conditions together suggest that *pro* can only exist if an element is present that is not only capable of assigning Case to *pro* but also helps *pro* retrieve its content. Under this framework, the content of *pro* is said to be recovered from the Case-assigning AGR/Infl.

The second point of variation among the argument-dropping languages in 1(a-e) is that not every language permits the non-pronunciation of both subjects and objects. Mandarin Chinese allows both types of empty categories, for instance, but languages like Spanish allow only subjects to drop. (1d) shows that subject positions can be left empty in Mandarin Chinese; an example containing an empty object position in Mandarin Chinese is given below.

- (4) Speaker A: Yuehan zuotian kanjian-le ziji-de laoshi.

John yesterday see-ASP self-DE teacher

‘John saw his own teacher yesterday.’

Speaker B: Mali ye kanjian-le *ec*.

Mary also see-ASP

Literally: ‘Mary also saw *ec*.’

In Speaker B's utterance, there is an empty category in the object position, which can refer to either John's teacher (the strict reading) or Mary's teacher (the sloppy reading). However, omitting the object in Spanish in this same context is prohibited.²

(5) Speaker A: Ayer Juan vio a su profesor.

Yesterday John saw to his professor

'John saw his professor yesterday.'

Speaker B: *Maria tambien vio *ec*.

Mary also saw

'Mary also saw him.'

Since every language is endowed with distinct properties with respect to morphology and the degree of tolerance of empty categories, it is expected that an analysis developed for a language like Spanish will not be directly transferable to a language of another type, like Mandarin Chinese (Huang 1984).

Although speakers of Mandarin Chinese leave argument positions empty very often, they cannot do so without restriction.

(6) Speaker A: Yuehan zuotian you mei lai xuexiao.

John yesterday again not come school

'John did not go to school yesterday again.'

Speaker B: Suoyi laoshi jue ding yao chufa *(ta).

so teacher decide want punish him

'So the teacher decided to punish him.'

² Thank Gerardo Fernández Salgueiro (p.c.) for giving me the Spanish sentences in (5).

Unlike (4), Speaker B's utterance in (6) will become ungrammatical if the object position is left empty.

Another example is given below.

(7) A: wo faxian-le Wang-jia yi-jian mi-shi. (Li 2011)

I discover-LE Wang-family one-CL secret-room

'I discovered a secret room of Wang's family.'

B: ta faxian-le Li-jia *(yi-jian mi-shi).

he discover-LE Li-family one-CL secret-room

'He discovered a secret room of Li's family.'

yi-jian mishi 'a secret room' is the direct object of the main verb *faxian* 'discover' in (7). This example demonstrates that the overt presence of a nominal phrase in an earlier sentence does not guarantee that the same nominal phrase is eligible for elision in a sentence uttered latter. Thus, argument drop in Mandarin Chinese is subject to certain conditions.

When it comes to characterizing a particular empty category within the framework of Government and Binding Theory, most people rely on the following classification:

(8) Chomsky (1982):	overt	covert
a. [-anaphor, +pronominal]:	pronoun	pro
b. [-anaphor, -pronominal]:	R-expression	variable
c. [+anaphor, +pronominal]:	—	PRO
d. [+anaphor, -pronominal]:	lexical anaphor	NP-trace

According to (8), each type of empty category carries specific values for the features [α anaphor, β pronominal]; these covert nominals are therefore subject to the Binding Principles, just like their overt counterparts. For example, both overt pronouns and their covert counterparts, *pro*, are subject to Binding

Principle B, and both proper names and their corresponding covert elements, NP-traces, have to conform to Binding Principle C.

This classification of empty categories has engendered considerable discussion about the proper characterization of empty categories in Mandarin Chinese: is it possible to use a single term like *pro* to stand for both null subjects and null objects, or do we need some mechanism other than those proposed for Italian to deal with relevant cases in Mandarin Chinese? Over the past three decades, various analyses have been proposed to address the properties of empty categories in Mandarin Chinese. In the following sections, I briefly discuss some of these analyses.

1.2 Analyses of empty object positions

Huang (1984) notices that there are four different ways to answer a yes-no question in Mandarin Chinese.

(9) Speaker A: Zhangsan kanjian Lisi le ma? (Huang 1984)

Zhangsan see Lisi le Q

‘Did Zhangsan see Lisi?’

Speaker B: a. Ta kanjian ta le.

he see him le

‘He saw him.’

b. e kanjian ta le.

see him le

‘[He] saw him.’

c. Ta kanjian e le.

he see le

‘He saw [him].’

- d. e kanjian e le.
see le

‘[He] saw [him].’

In the first possible response, there are two overt pronouns: the first stands for Zhangsan and the second for Lisi; in the second response, the subject is an empty category; in the third one, it is the object position that is vacant; in the fourth one, both subject and object are phonetically null. The fact that all these responses are acceptable indicates that Mandarin Chinese is very flexible in permitting the subject and/or object position to be left empty.

Unlike Mandarin Chinese, English only allows the first type of answer, which means that none of the argument positions can be left empty.

(10) Speaker A: Did John see Bill?

Speaker B: a. Yes, he saw him.

b. *Yes, e saw him.

c. *Yes, he saw e.

d. *Yes, e saw e.

Although empty categories seem to be able to appear quite freely in Mandarin Chinese, their interpretation is subject to certain restrictions.

In addition, Huang (1984) notices an asymmetry in the interpretation of null subjects and null objects in Mandarin Chinese.

- (11) a. Zhangsan_i shuo [e_{i/j} bu renshi Lisi].
 Zhangsan say not know Lisi
 ‘Zhangsan said he didn’t know Lisi.’
- b. Zhangsan_i shuo [Lisi bu renshi e_j].
 Zhangsan say Lisi not know
 ‘Zhangsan said Lisi didn’t know him.’

According to Huang (1984), the null subject in (11a) can refer to either the matrix subject or to a salient discourse topic, while the null object in (11b) can only refer to a discourse topic. The topic-hood analysis proposed for (11b) gains support from the fact that, if an overt nominal phrase is present in sentence-initial position, this nominal phrase must be co-referential with the empty object position.

- (12) neige ren_i, Zhangsan shuo [Lisi bu renshi e_i].
 that man, Zhangsan say Lisi not know
 ‘That man_i, Zhangsan said Lisi did not know e_i.’

(12) differs from (11b) in that the topic serving as the antecedent of the null object is realized overtly in front of the matrix subject. Huang (1984) proposes that (11b) should be analyzed as (13), in which the empty object position is a variable bound by a covert topic.

- (13) [_{Top} e_i], [Zhangsan shuo [Lisi bu renshi e_i].
 Zhangsan say Lisi not know
 ‘*[Him_i], Zhangsan said that Lisi didn’t know e_i.’

Huang (1984) further claims that the discrepancy between the interpretive possibilities for null subjects and null objects in Mandarin Chinese is derived from the following principles.

(14) a. Disjoint Reference (DJR)

A pronoun must be free in its governing category.

b. Generalized Control Rule (GCR)

Co-index an empty pronominal with the closest nominal element.

Take (11) as an illustration. The null subject in (11a) can be viewed as *pro*, since it not only is free in its governing category, but can also co-index with the closest nominal phrase, which is the matrix subject; it can be interpreted as a variable as well, since it can be bound by some salient topic generated from the discourse. As for the null object in (11b), if it were *pro*, its antecedent would have to be the subject in the embedded clause, since the GCR states that a covert pronominal must be co-indexed with the closest nominal element. However, such co-referentiality would be in conflict with the DJR, which requires that a pronoun be free in its governing category. Therefore, we have no choice but to analyze this empty object position as a variable.

The analysis described above is not the only way to account for empty objects in Mandarin Chinese. Huang (1991) proposes that the Mandarin sentence in (15) should be analyzed on a par with its English counterpart in (16), since they have the same interpretation.

(15) John kanjian-le tade mama. Mary ye kanjian-le *e*.

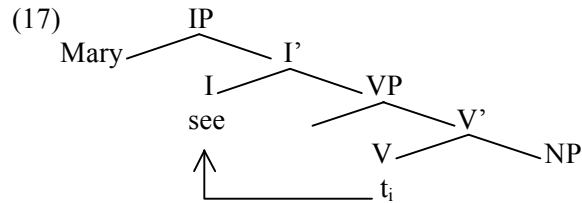
John see-ASP his mother. Mary also see-ASP

‘John saw his mother, and Mary did, too’

(16) John saw his mother, and Mary did too.

Both (15) and (16) have two possible readings. In the *sloppy reading*, the empty object following the second *kanjian* ‘see’ in (15) refers to Mary’s mother; in the *strict reading*, the null object is co-referential with John’s mother. Following the standard analysis of the English sentence in (16) as an instance of VP-

ellipsis, Huang (1991) proposes that the second sentence in (15) should also be analyzed as a VP-ellipsis construction. However, although both (15) and (16) are ambiguous, the verb in the second sentence of (15) remains overt, while its correspondent in (16) disappears. In order to solve this disparity, Huang (1991) proposes that the verb in (15) raises to a higher position before VP-ellipsis occurs.



Huang proposes that after the verb *kanjian* ‘see’ moves from V to Infl, the projection of VP becomes empty, and can get interpreted by assimilating itself to the semantics of the antecedent VP at LF.

Xu (1986) argues against Huang’s (1984) claim that empty objects in embedded clauses cannot co-refer with the matrix subject.

- (18) a. Haizi yiwei mama yao zeguai e le.
 child think mother will reprimand SFM
 ‘The child thinks that his mother is going to reprimand (him).’
 b. xiaotou yiwei mei ren kanjian e.
 thief think no man see
 ‘The thief thought nobody saw (him).’

According to Xu, the null objects in (18) can refer to the matrix subjects, *haizi* ‘child’ and *xiaotou* ‘thief’, respectively. Based on this evidence, Xu concludes that in addition to the types of empty categories shown in (8), we need one more type of empty category, called the *Free Empty Category* (FEC), to account for properties of some null arguments in Mandarin Chinese.

(19) Empty Categories

Type 1: EC without specified features: FEC.

Type 2: EC with specified feature

- a. [+anaphor, -pronominal]: NP-trace
- b. [-anaphor, +pronominal]: *pro*
- c. [+anaphor, +pronominal]: PRO
- d. [-anaphor, -pronominal]: variable

Xu proposes that the FEC does not pattern with other empty categories in that it does not bear any inherent anaphoric and pronominal features. As a result, this empty category can appear in a wider range of positions than other empty categories.³

Li (2007, 2011) proposes that an empty object position within the adjunct clause, like the one in the following example, should be analyzed as neither *pro* nor a variable.

(20) wo faxian xiaotou₁ [yinwei jincha me renchu e₁] gaoxing-di zou le.

I discover thief because police not recognize happily leave LE

‘I discovered that the thief left happily because the policeman did not recognized (him).’

The null object shown in (20) cannot be a variable resulting from null operator movement, since it is contained within an adjunct; this empty category cannot be *pro* either, since this will generate a conflict between the GCR and the DJR. Li, like Xu, proposes that we need a new empty category, which she calls *True Empty Category* (TEC) for such elements. The properties of TEC are listed below.

(21) Subcategorization Requirements for True Empty Categories (TEC)

- a. If a head subcategorizes for an E, E must be present in the syntactic structure.

³ Please also refer to Huang’s (1987a) discussion of Xu (1986).

- b. An E exists only in a subcategorized position.

Li claims that, although TECs do not have any phonetic form, they have categorial features that can satisfy the subcategorization requirements of the verb.

More recently, Cheng (2011, 2012, 2013) provides an alternative analysis for sentences that are analyzed as VP-ellipsis constructions. He builds his analysis on examples like the following:

- (22) a. Zhangsan da-le ziji-de xiaohai zhihou.....
 Zhangsan hit-ASP self-GEN child after
 ‘After Zhangsan hit his child,.....’
- b. Lisi haishi bu-gan da e
 Lisi still not-dare hit
 ‘Lisi still did not dare to hit his (Zhangsan’s) child.’ (strict reading)
 ‘Lisi still did not dare to hit his (Lisi’s) child.’ (sloppy reading)
 ‘Lisi still did not dare to hit Zhangsan.’ (pragmatic reading)

The object position following the verb *da* ‘hit’ is left empty in (22b). Cheng notices that, in addition to the strict and sloppy reading, (22b) has another reading in which the null object refers to the matrix subject in the preceding sentence. Since the corresponding English sentence lacks the third reading, Cheng argues that (22b) should not be considered a VP-ellipsis construction, but rather an instance of argument ellipsis. Based on the properties of nominal phrases in Mandarin Chinese, Cheng proposes the following condition to account for ellipsis possibilities for nominal phrases:

- (23) The Non-Elidability Condition of Phases (NECP)

For a certain projection XP, if XP is a phase, XP cannot be elided (in the PF component).

Following Bošković's (2008, 2012) idea that radical *pro*-drop only occurs in NP languages, Cheng proposes that argument ellipsis is available in nominal phrases in Mandarin Chinese, because nominal phrases in this language are not phases.

So far, I have illustrated the topic-variable analysis, the VP-ellipsis analysis, the FEC, the TEC, and the argument ellipsis analysis. Each of these analyses is used to address the co-referentiality relation between empty object positions and their antecedents. In fact, there is also a more traditional way to analyze empty objects.

Chomsky (1977) proposes that topicalization, *tough* constructions, and comparative sentences all involve null operator movement, in which a null operator raises to a higher position and leaves a trace.⁴ One piece of evidence supporting this movement analysis comes from the ungrammaticality of sentences like (24a).

- (24) *tough* constructions (Chomsky 1977)
- a. *John is easy (for us) to convince Bill of the need for him to meet *t*.
 - b. John is easy for us to please *t*.

Chomsky claims that null operator movement is involved in both (24a) and (24b). The ungrammaticality of (24a) can be attributed to island violations incurred by the null operator's movement to a higher position. In contrast, since there is no island boundary between the base position of the null operator and its final landing site in (24b), null operator movement does not yield any ungrammaticality. This movement is depicted below.

(25) John is easy for us [_{CP} OP_i [_{IP} PRO to please *t_i*]]

⁴ What is moved in Chomsky (1977) is a *wh*-phrase; *wh*-phrases are treated as null operators in current linguistic theory.

As we can see in (25), the null operator moves from the object position following the verb *please* to the Spec of CP, leaving a covert variable in its base-generated position.

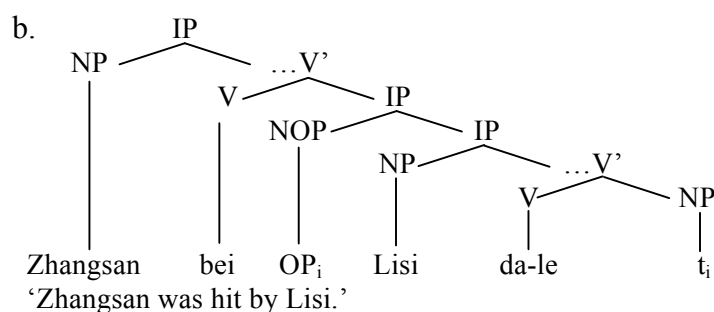
The movement-based operator-variable construction can also be observed in Mandarin Chinese. Huang (1999) accounts for long passives in Mandarin Chinese in terms of null operator movement.

(26) a. Long passives

Zhangsan bei Lisi da-le.

Zhangsan BEI Lisi hit-PERF

‘Zhangsan was hit by Lisi.’



Huang proposes that, once the null operator has moved from the object position to adjoin to the embedded IP, it establishes a predication relation with the matrix subject *Zhangsan*.

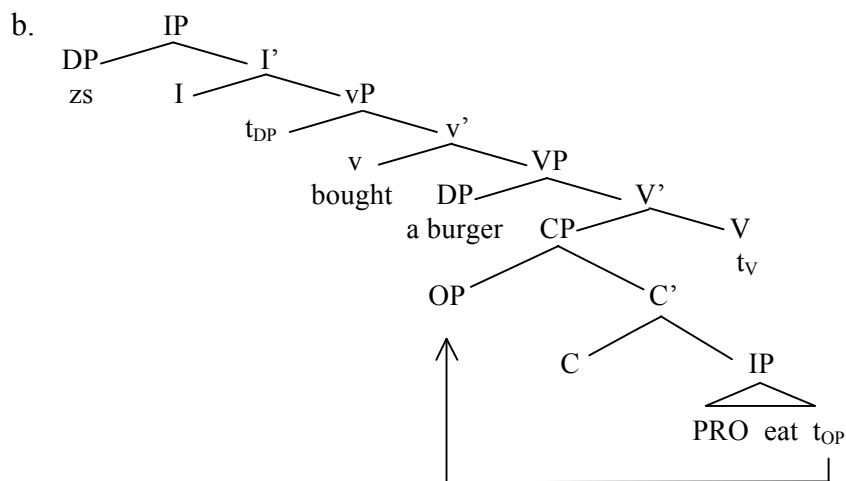
Constructions that involve operator movement in Mandarin Chinese are not only restricted to passive sentences. Since Engdahl (1983) and Chomsky (1986), it is usually assumed that parasitic gaps are derived by operator movement, which must be licensed by another A'-movement in the same sentence. Given the contrast between (27a) and (27b), Lin (2005) proposes that the null object within the adjunct clause in (27) should be analyzed as a parasitic gap, since A'-movement, which is the topicalization of the *wh*-phrase of the main clause, is required (see Culicover 2001, Engdahl 1983, and Nissenbaum 1999 for detailed discussions on licensing conditions for parasitic gaps).

- (27) a. *Laowang [zai huijian pg_i zhiqian] jiu kaichu-le shei_i?
 Laowang at meet before already fire-PERF who
 ‘Who did Laowang fire before meeting?’
- b. Shei_i Laowang [zai huijian pg_i zhiqian] jiu kaichu-le t_i ?
 who Laowang at meet before already fire-PERF
 ‘Who did Laowang fire before meeting?’

Purposive constructions also involve null operator movement. Lin and Liao (2011) analyze a bare purposive like (28a) with the structure in (28b).

- (28) a. The bare purposive

Zhangsan mai-le yi-ge hanbao chi.
 Zhangsan buy-PERF one-CL burger eat
 ‘Zhangsan bought a burger to eat.’



(28b) shows that a null operator moves from within the most embedded IP to the Spec of the embedded CP.

Summarizing what we have discussed, the analyses proposed for empty object positions are listed as follows :

- (29) a. The topic-variable analysis: Huang (1984, 1989)
- b. Free Empty Category: Xu (1986)
- c. VP-ellipsis: Huang (1991)
- d. Null operator movement: Huang (1999), Lin and Liao (2011)
- e. Parasitic gap: Lin (2005)
- f. True Empty Category: Li (2007, 2011)
- g. Argument ellipsis: Cheng (2011, 2012, 2013)

In the next section, I turn to look at sentences containing empty subject positions, and discuss some of the main analyses that have been proposed for such empty categories in the literature.

1.3 Analyses of empty subject positions

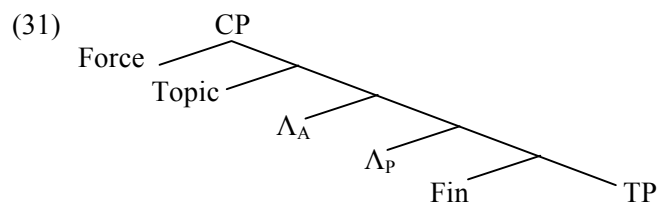
Huang (1984) proposes that, when a null object refers to a prominent discourse or a syntactic topic, it must be analyzed as a topic-bound variable. This analysis can be extended to a null subject as well: when a null subject is co-referential with a topic, it is a topic-bound variable. Therefore, a null subject can be treated either as *pro* or as a variable in Mandarin Chinese, depending on what it takes as its antecedent.

However, Ting and Huang (2008) claim that in some cases a null subject has to be considered a parasitic gap rather than *pro*, which means that it is a variable referring to a constituent derived by A'-movement. One of the examples they use to support this analysis is represented below.

- (30) yi-ge [laoban [_{PP} zai *pg_i* fancuo zhihou] like kaichu *t_i*]
 one-CL boss at make.mistake after immediately fire
 de yuangong;
 DE employee
 ‘an employee who the boss fired immediately after he made a mistake’

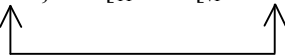
Ting and Huang argue that, if the null subject within the adjunct clause were *pro*, the interpretation shown above would be unavailable, since *pro* can only have the closest nominal phrase (in this case, *laoban* ‘the boss’) as its antecedent, according to Huang’s Generalized Control Rule. As a result, given the interpretation that Ting and Huang prefer, in which the null subject within the adjunct clause is co-referential with the head noun *yuangong* ‘employee’, and the existence of relativization, they conclude that this null subject should be treated as a parasitic gap.

Cross-linguistically, Mandarin Chinese is not the only language that drops subjects in sentences. Sigurðsson (2011) addresses issues concerning referential null arguments in a variety of languages, including Chinese, Icelandic, Italian, Finnish, and German. He proposes that each referential null argument, whether a null subject or a null object, has to be connected to a C/Edge linking feature (CL_n), which can be a topic feature, a speaker feature, or a hearer feature. Based on the cartographic configuration developed by Rizzi (1997) and Cinque (1999), Sigurðsson devises the following structure:



He claims that the C/Edge linking feature functions as a probe, and therefore must look for an appropriate goal with which to establish an Agree relation (Chomsky 2000, 2001). Employing this Minimalist approach, Sigurðsson accounts for Chinese sentences like (32a) and (32b) in the following way.

- (32) a. ____ kanjian ta le.
 see him PERF
 ‘[He/She] saw him.’
- b. Zhangsan_i shuo [_____i hen xihuan Lisi].
 Zhangsan say very like Lisi
 ‘Zhangsan said that he liked Lisi.’

- (33) [CP{CLn}..... [TP [vP ...Ø....]]]
- 

The empty subject position in (32a) refers to a discourse topic, while the one in (32b) refers to the matrix subject. The fact that a null subject in Mandarin Chinese has flexibility in selecting its antecedent leads Sigurðsson (2011) to propose that null subjects in Mandarin Chinese should be linked to a C/Edge linking feature while remaining in situ.⁵

One of the advantages of this analysis is that, by resorting to such a matching relation between a CLn feature and a referential null argument, we not only can eliminate the need to postulate different X-drop parameters cross-linguistically (X here can be *pro*, topic, discourse), but can also avoid reliance on unjustified elements, such as indices, whose existence is said to violate the Inclusiveness Condition (Chomsky 1995). Although it would be economical to have a unified analysis for all referential null

⁵ In some languages, the null argument has to move upwards in order to connect to a C/Edge linking feature. This issue will be addressed in more detail in Chapter 4.

arguments, it is necessary to examine the effectiveness of such a strategy by looking at the distribution of referential null arguments in real language-use environments.

Given these discussions, we can summarize the analyses proposed for Mandarin null subjects in the literature as follows:

- (34) a. *pro*: Huang (1984, 1989)
b. a topic-bound variable: Huang (1984, 1989)
c. parasitic gaps: Ting and Huang (2008)
d. C/Edge linking: Sigurðsson (2011)

Similar to what we have in the end of the last section, there is more than one way to analyze sentences without overt subjects.

1.4 Organization of the thesis

So far, we have seen that there are plenty of ways to characterize empty categories in Mandarin Chinese; some of them target empty categories in subject position, while others deal with empty categories in object position. This dissertation does not plan to verify all of the analyses mentioned in the previous two sections, nor does it aim to analyze all types of empty categories.

Most of the work mentioned above share two properties: (i) they only zero in on sentences that do not contain overt arguments, and (ii) an empty subject or object position is postulated, if nothing precedes (in)transitive verbs or follows transitive verbs. This type of analysis sometimes works pretty well, but sometimes it does not. Since empty categories are embedded in sentences and sentences are used for communication, I plan to analyze sentences in which subjects and objects are not present from a context-oriented perspective. That is, I propose to pay attention to when we can and cannot use sentences that do

not contain subjects and/or objects; to do this, it is necessary not only to look at such sentences, but also to take into consideration the discourse context in which these sentences are used. With this idea in mind, consider the following example:

- (35) Zhangsan shuo [e bu renshi Lisi].
 Zhangsan say not know Lisi
 ‘Zhangsan said he does not know Lisi.’

It is usually assumed that the null subject in this type of sentence can be co-referential with either the matrix subject or a salient topic in the discourse. The null subject in (35) can indeed refer to the matrix subject; in fact, this is the only interpretation that this sentence can have when it is uttered out of the blue. However, it is not straightforward to find a context in which the null subject refers to a ‘salient discourse topic’: in this case, a person who is relevant in the conversational context, but who is not mentioned as the missing argument.

- (36) Speaker A: Wangwu_i renshi Lisi ma?
 Wangwu know Lisi Q
 ‘Does Wangwu know Lisi?’
 Speaker B: ??/*Zhangsan shuo [e_i bu renshi Lisi].
 Zhangsan say not know Lisi
 ‘Zhangsan said he does not know Lisi.’

Although *Wangwu* is understood as the topic in Speaker A’s question in (36), Speaker B cannot omit the subject in the embedded clause of his/her utterance with the intention to convey the meaning, ‘Zhangsan said that Wangwu does not know Lisi.’ Inserting an overt pronoun *ta* ‘he’ in this position will improve

the acceptability of this sentence. This phenomenon shows that we cannot randomly leave an argument position empty in Mandarin Chinese.

Another pertinent example is given below.

(37) *e* lai le.

come ASP

‘[He] is coming/came.’

This sentence does not make any sense when uttered out of the blue: we require a context to help us identify the null subject. Much work in the literature indicates that the null subject in this sentence is co-referential with a discourse topic. We can verify this analysis with the help of the following context. Imagine a situation in which a group of students are sitting in a classroom and waiting for their history teacher to arrive. Suddenly, Tom stands up, and utters (37) to his fellow classmates. Although everyone in this class is aware of the fact that it is probably the history teacher arriving at this moment, they are still likely to be confused by Tom’s utterance. A more appropriate way for Tom to get his point across is the following:

(38) Laoshi lai le.

teacher come ASP

‘The teacher is coming.’

Thus, it seems that not every discourse topic can serve as the antecedent of a null subject. On the other hand, there are indeed certain contexts in which sentences like (37) can be used. For instance, (37) is acceptable when serving as a response to the yes-no question shown in (39).

(39) Yuehan lai-le ma?

John come-ASP Q

‘Did John come?’

If (39) is uttered prior to (37), speakers of Mandarin Chinese will have no difficulty understanding who the null subject refers to in (37).

When I began my investigation by zeroing in on the environments that contain empty categories in Mandarin Chinese, it became apparent that the use of sentences that do not contain subjects and/or objects is heavily influenced by the syntactic structures of prior sentences. This observation does not necessarily suggest that a unified analysis should be applied to all of the relevant phenomena. Instead, I believe that several different analyses are necessary to accurately capture the properties of each type of empty category. This dissertation is dedicated to unveiling the mechanisms underlying these phenomena. Throughout, I focus on Mandarin Chinese, since this language accommodates empty categories more flexibly than languages like English or Spanish.

The dissertation is organized as follows. Chapter 2 opens with a discussion of Huang (1984, 1989), who proposes that null subjects can be analyzed as *pro* or variables, while null objects must be considered variables bound by discourse topics. Based on the classification of topics presented in Frascarelli and Hinterhölzl (2007), I construct a number of contexts that give rise to different types of topics, and show that the availability of a discourse topic does not guarantee felicitous use of an empty category in Mandarin Chinese. For instance, subject positions of sentences do not accommodate empty categories at random. I argue that the empty subject position in a number of sentences is apparent in the sense that it is a side effect of clausal ellipsis that deletes everything within TP. In other words, the subject position in these cases is not empty at all. I make further use of this analysis to account for the ability of verbs to move out of vP in Mandarin Chinese. In the beginning of Chapter 3, I demonstrate that only when structural parallelism obtains between a preceding and a following sentence, can object positions be left empty. I provide several pieces of evidence to argue that sentences like (15) should be analyzed as

instances of V-stranding VP-ellipsis (G. Li 2002) rather than argument ellipsis (Cheng 2013), since the latter analysis cannot account for the phenomenon that I show in this chapter. In Chapter 4, I discuss the licensing conditions for subject *pro* in Mandarin Chinese. Based on observations concerning the distribution of subject *pro*, and inspired by Frascarelli (2007), Roberts (2010), Sigurðsson (2011), I propose that identifying the content of subject *pro* in Mandarin Chinese requires that a topic be present in the CP domain of the same clause, and this topic can be overt or covert. In addition, I address the differences between Italian, Japanese, and Mandarin Chinese with respect to the use of subject *pro*. I attribute the discrepancy between these two languages to the property of the covert topic TOP that Agrees with subject *pro*: in Italian and Japanese, this covert topic is inherently endowed with valued φ -features, whereas its counterpart in Mandarin Chinese is not, so it needs to depend on a preceding, overt topic to value the relevant features. Chapter 5 concludes.

CHAPTER 2

‘SUBJECTLESS’ SENTENCES AND TP-ELLIPSIS

2.1 Introduction

The apparent flexibility of Mandarin Chinese in permitting empty argument positions has motivated many different analyses. In this chapter, I will argue that, if we pay attention to the contexts in which arguments of verbs do not appear, it turns out that Mandarin Chinese is less flexible than expected in its accommodation of empty categories. The goal of this chapter is to uncover the properties of Mandarin ‘subjectless’ sentences, and to demonstrate that ‘dropping’ subjects is, in fact, subject to certain conditions.

This chapter is organized as follows. I begin with a detailed discussion of Huang’s (1984, 1989) proposal that empty objects must be viewed as discourse-topic-bound variables, while empty subjects may be either *pros* or variables. The association of empty categories with prior discourse is theoretically appealing because it successfully connects two idiosyncratic properties of Mandarin Chinese: its status as a discourse-oriented language (Tsao 1977) and its surprising quantity of empty categories. I adopt Huang’s (1984, 1989) idea that discourse plays a role in determining when we can and cannot use sentences without subjects and/or objects, but I propose that we need to develop a more fine-grained analysis of the process by which discourse licenses these sentences. In Section 2.3, I follow Frascarelli (2007) as well as Frascarelli and Hinterhölzl (2007) in identifying a number of contexts that give rise to three different types of topics: Aboutness(-shift) topic, Familiar topic, and Contrastive topic. I show, however, that the presence of one of these discourse topics is not in and of itself sufficient to license null arguments; by extension, these empty categories cannot be understood as simple variables bound by an A’-topic. My observations are laid out in Section 2.4, in which I argue that not all sentences with empty

argument positions are genuine null-argument sentences; in other words, I claim that the argument positions in these sentences are not actually empty at all during the derivation. Two constructions in particular can be accounted for under this analysis: answers to yes-no questions and answers to *wh*-questions. I follow Simpson (to appear) in deriving yes-no responses containing ‘empty’ subject positions from movement of the verb followed by clausal ellipsis, and attribute the apparent empty subject positions in *wh*-responses to the combined effect of *v*P-movement and TP-ellipsis. This analysis not only characterizes the syntactic and semantic properties of these ‘subjectless’ sentences more accurately than previous accounts have done, but also reflects the importance of discourse more precisely. Section 2.5 concludes.

2.2 Earlier analyses of null subjects and objects

2.2.1 Huang’s (1984, 1989) topic-variable analysis

Huang (1984) starts his discussion of empty categories with a distinction between ‘hot’ and ‘cool’ languages. ‘Hot’ languages are those that do not require much attention from the participants of a conversation, while ‘cool’ languages require participants to make an effort to understand each other. Under this classification, English is labeled a ‘hot’ language: since pronouns cannot be omitted, hearers or readers usually have no problems understanding the reference of these overt lexical items. On the contrary, Chinese is considered a ‘cool’ language, since either the subject or the object position is often left empty. A full understanding of sentences containing these empty categories requires collaboration between speakers and listeners.

It has been argued at length that the presence of *pro*-drop phenomena is related to the richness of a language’s morphological system. Various parameters, such as the *Pro-Drop Parameter* and the *Null Subject Parameter*, have been proposed in the literature to account for this observation (see Borer 1983, Chomsky 1981, Jaeggli 1982, Perlmutter 1971, Taraldsen 1978, among others). Huang (1984) gives

examples from Pashto to support the analysis that agreement plays an important role in licensing null subjects and objects:

(1) a. Jān ra-z-i.

John DIR-come-3msg

‘John comes.’

b. zə mana xwr-əm.

I apple eat-1msg

‘I eat the apple.’

(2) a. Jān ra-ǵ-ay.

John ASP-come-3msg.

‘John came.’

b. ma mana wə-xwar-a.

I apple PRF-eat-3fsg

‘I ate the apple.’

According to Huang (1984), Pashto is a split-ergative language. When a sentence is in the present tense, nominative-accusative morphology on the verb agrees with the subject, as shown in (1). When describing a past event, however, Pashto employs an ergative system: the verb agrees with the subject in intransitive sentences and with the object in transitive sentences, as shown in (2). Intriguingly, only arguments that agree with the verb in Pashto can be omitted. So, the subjects *John* and *I* in (1) can be omitted, as can the subject *John* and the object *apple* in (2a) and (2b), respectively.

(3) a. e ra-z-i.
DIR-come-3msg

‘[He] comes.’

b. e mana xwr-əm.
apple eat-1msg

‘[I] eat the apple.’

(4) a. e ra-ğ-ay.
ASP-come-3msg.

‘[He] came.’

b. ma e wə-xwar-a.
I PRF-eat-3fsg

‘I ate [it].’

Given the Pashto facts about null arguments, in conjunction with the well-known fact that Romance languages like Spanish and Italian can also omit subjects, most scholarship has converged on the notion that the presence of empty categories is contingent on a rich morphological system.¹ However, despite clearly lacking such rich morphology, Mandarin Chinese actually accommodates empty categories more readily than agreement languages like English or Spanish do: the former does not elide any arguments, and the latter only drops subjects. Thus, exploring the behavior of Mandarin Chinese is important for our understanding of empty categories more broadly.

Huang (1984) points out an asymmetry in the interpretation of empty subjects and empty objects in Mandarin Chinese.²

¹ Sigurðsson (2011) shows that cross-linguistically, argument drop is not necessarily related to the morphological system of the language.

² The same observation has been made for Japanese; see Kuroda (1965).

- (5) a. Zhangsan shuo [e bu renshi Lisi].
 Zhangsan say not know Lisi
 ‘Zhangsan said that [he] did not know Lisi.’
- b. Zhangsan shuo [Lisi bu renshi e].
 Zhangsan say Lisi not know
 ‘Zhangsan said that Lisi did not know [him].’
- (6) a. John said that he knew Bill.
 b. John said that Bill knew him.

Huang claims that the empty subject in (5a) and the pronoun *he* in (6a) pattern alike, in the sense that each can be bound either by the matrix subject or by a salient antecedent in discourse. However, the same parallelism does not exist between the empty object in (5b) and the pronoun in (6b), since only the latter can co-refer with the matrix subject: the former must refer to a topic in the previous discourse. The same asymmetry is observable in the following pair of sentences.

- (7) a. Zhangsan_i xiwang [e_i keyi kanjian Lisi].
 Zhangsan hope can see Lisi
 ‘Zhangsan_i hopes that [he_i] can see Lisi.’
- b. *Zhangsan_i xiwang [Lisi keyi kanjian e_i].
 Zhangsan hope Lisi can see
 ‘Zhangsan_i hopes that Lisi can see [him_i].’

In (7a), the null subject in the embedded clause can corefer with the matrix subject, but such co-referentiality cannot hold between the empty category in (7b) and *Zhangsan*. The null embedded object must pick up its reference from discourse.

This observation is reinforced by the fact that, when an extra nominal phrase serving as an overt topic is inserted into the same sentence, this nominal phrase naturally becomes the referent for the null object.

- (8) a. neige ren_i, Zhangsan shuo [Lisi bu renshi e_i].
 that man, Zhangsan say Lisi not know
 ‘That man_i, Zhangsan said Lisi did not know e_i.’
- b. neige ren_i, Zhangsan xiwang [Lisi keyi kanjian e_i].
 that man, Zhangsan hope Lisi can see
 ‘That man_i, Zhangsan hopes that Lisi can see e_i.’

In the sentences in (8), the null object is co-referential with the overt topic that appears in sentence-initial position.

Given these facts, Huang (1984) proposes that (5b) should be analyzed as in (9), in which the null object is bound by a covert topic. In addition, since the covert topic is an A'-element, the null object is considered a variable.

- (9) [_{Top} e_i], [Zhangsan shuo [Lisi bu renshi e_i]].
 Zhangsan say Lisi not know
 ‘*[Him_i], Zhangsan said that Lisi didn’t know e_i.’

In a nutshell, the discussion above suggests that null objects can only have topics as their antecedents, although that antecedent topic may or may not be overt.

A topic-based analysis of Chinese empty categories appears tenable, since Chinese is understood to be a ‘discourse-oriented’ language with the property of topic-prominence (Tsao 1977, Li & Thompson 1976).

- (10) neichang huó, xìngkuì xiǎofāngduì lái de zǎo. (Li & Thompson 1981)
 that fire fortunately fire-brigade come COMP early
 ‘That fire, fortunately the fire brigade came early.’

The nominal phrase *neichang huó* ‘that fire’ in this sentence does not satisfy any of the grammatical requirements that ordinary arguments like subjects or objects usually do; it merely serves as a topic, indicating what the rest of the sentence is about. Based on facts like these, Huang (1984) proposes a fundamental parameter, called the *zero-topic parameter*, to account for the fact that Mandarin Chinese allows arguments to drop while a language like English does not: Mandarin Chinese has the positive setting of this parameter (it is a zero-topic language), while English has the negative setting.

Huang (1984) proposes the following two generalizations which together account for both the subject-object asymmetry and the means by which the contents of empty categories are recovered:

- (11) a. Disjoint Reference (DJR)
 A pronoun must be free in its governing category.
 b. Generalized Control Rule (GCR)
 Co-index an empty pronominal with the closest nominal element.

Disjoint Reference (DJR) is basically equivalent to Binding Principle B, which says that an overt pronoun has to be free in its governing category; the Generalized Control Rule (GCR) imposes a restriction on the interpretation of empty pronominals. Now, let us look at how Huang (1984) deals with the following sentences in terms of DJR and GCR.

- (12) a. *e* came. (Huang 1984:553)
 b. John saw *e*.
 c. *e* saw *e*.

- d. John said that *e* saw Bill.
- e. John said that Bill saw *e*.

According to the GCR, if the empty subject in (12a) is a pronominal element, then it will need a closest nominal phrase to identify its content. However, since no nominal phrase appears in this sentence, this rule cannot be satisfied. As a result, Huang argues that the empty subject in this sentence cannot be *pro*: instead, it must be a variable that finds its reference from discourse, since variables are not constrained by DJR or GCR. As for the null object in (12b), if it were pronominal, it should co-refer with the closest nominal phrase, *John*. But such co-referentiality is in conflict with the DJR requirement that a pronoun be free in its governing category, which in this case is the whole sentence. Therefore, in order to avoid violations of DJR and GCR, the last resort strategy applies: the null object is labeled as a variable bound by a zero topic. (12c) can be analyzed on a par with (12a), since it does not contain any overt nominal phrases that could serve as binders for its two empty categories; consequently, the only possibility is to treat both empty subject and empty object as variables.

So far, we have seen that each empty category in (12a)~(12c) can only serve as a variable. However, the joint force of Huang's DJR and GCR also admits the possibility that a single unpronounced argument may be ambiguous between a pronominal element and a variable. This is indeed the case in (12d), in which the empty category is the subject of an embedded clause. If the empty subject is a *pro*, then the nominal phrase *John* is its antecedent, according to the GCR. However, this null subject can also be viewed as a variable. Thus, the null subject in (12d) can refer either to the matrix subject *John* or to someone else whose reference is identifiable in the discourse. In the case of a null object in an embedded clause (12e), however, DJR and GCR conspire to eliminate *pro* as a possibility. As a result, null objects can only be analyzed as variables.

Huang further extends his analysis of empty categories as bound by A'-elements to sentences like the following:

(13) Li xiaojie hai zhao-bu-dao [yige [*e* xinzhong xihuan *e* de] nanren].

Li Miss still can't-find one in-heart like DE man

‘Miss Li still cannot find a man who she loves in her heart.’

Not: ‘Miss Li still cannot find a man who loves her in his heart.’

There are two empty categories in the relative clause of this sentence: one is in subject position and the other in object position. The desired interpretation comes from the co-referentiality between (i) the subject EC and the matrix subject *Miss Li*, and (ii) the object and the head noun *nanren* ‘man.’ This interpretation can be accounted for if we analyze the null subject as *pro*, and the null object as a variable. Another example is given below:

(14) Li xiaojie hai zhao-bu-dao [yige [*e* keyi jia *e* de] nanren].

Li Miss still can't-find one can marry DE man

‘Miss Li still cannot find a man who [she] can marry.’

As in (13), we can access the interpretation of this sentence by viewing the null subject in the relative clause as a *pro*, and treating the null object as a variable bound by the head noun *nanren* ‘man.’

Given this discussion, we can summarize Huang’s (1984, 1989) analysis of null subjects and null objects as follows:

(15)

	<i>pro</i>	variable
Null subject	√	√
Null object		√

In addition to the analytic dichotomy between null subjects and null objects, there is another crucial aspect to Huang's (1984, 1989) analysis: in the context of sentences in which a null argument is considered a variable bound by an A'-constituent, sentences with overt topics are analyzed on a par with those that have 'zero' topics. For example, the following two sentences are treated alike, except for the fact that (16b) has an overt topic while (16a) does not.

- The same type of analysis is also applied to sentences without subjects.

- Under Huang's (1984, 1989) framework, (17a) and (17b) are taken to involve a covert-topic bound variable and an overt-topic bound variable in subject position, respectively.

Although sentences with overt topics and those with covert ones are treated theoretically similarly, there is a practical difference between them: the former can be understood even when they are uttered out of the blue, as is true in (16b) and (17b), while the latter such as (16a) and (17a) cannot. In other words, we need far more contextual information to understand (16a) and (17a) than to understand (16b) and (17b). This discrepancy implies that these two groups of sentences might require different analyses. Before discussing these Mandarin sentences in detail, let us look at how Huang's topic-variable analysis influences other linguists in analyzing sentences without arguments.

2.2.2 Raposo (1986)

Huang's topic-hood analysis of missing arguments in Mandarin Chinese inspired many subsequent linguists. Raposo (1986) is one example. According to Raposo, European Portuguese is like Mandarin Chinese in that it also allows object drop.

- (18) a Joana viu ____ na TV ontem.
'Jane saw ____ on TV yesterday.'

Inspired by the similarity between European Portuguese and Mandarin Chinese, Raposo attempts to extend Huang's analysis to European Portuguese as well. He constructs the following configuration for a null object sentence, in which the null object is directly bound by an A'-element, the zero topic:

- (19) [_{TOP} e_i] [_S a Joanna viu t_j na TV ontem].

However, Raposo argues that (19) cannot be the correct analysis for null object sentences in European Portuguese, since this analysis creates a conflict between the application of Binding Theory and the

indexing of A'-elements. Chomsky (1982) proposes that A'-positions are only indexed at LF; thus, if the null object under discussion has to be co-indexed with an A'-topic, it cannot be considered a variable until LF. However, the status of the null object *must* be determined prior to LF, since Binding Theory is said to apply at S-structure. In order to solve this dilemma, Raposo proposes that null objects in European Portuguese are not directly bound by zero topics but are locally bound by a moved operator (Chomsky 1977) which in turn is co-indexed with a covert A'-topic. This analysis is schematically represented below.

(20) $[_{TOP} e_i] [_{S'} OP_j [_S a \text{ Joana viu } t_j \text{ na TV ontem}]]$.

As we can see in (20), the zero topic indirectly binds the empty object position through the mediation of a moved operator. This movement-based analysis gains support from two pieces of evidence. First, null objects cannot appear inside islands:

- (21) a. *eu informei a policia da possibilidade de o Manel ter guardado e_i no cofre da sala de jantar.
 'I informed the police of the possibility that Manel had kept e_i in the safe of the dining room.'
- b. *Que a IBM venda e_i a particulares surpreende-me.
 'That IBM sells e_i to private individuals surprises me.'
- c. *O pirate partiu para as Caraibas depois de ter guardado e_i cuidadosamente no cofre.
 'The pirate left for the Caribbean after he had guarded e_i carefully in the safe.'

The fact that null objects in European Portuguese cannot appear in complex NP islands, sentential subject islands, or adjunct islands suggests that movement is a pre-requisite for the formation of an empty object category in European Portuguese.

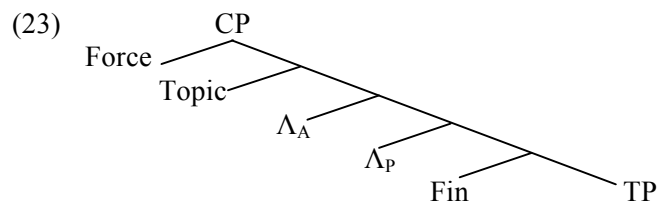
The second piece of evidence in favor of the movement analysis comes from sentences containing parasitic gaps.

- (22) $vi\ e_i\ na\ TV\ sem\ reconhecer\ pg_i.$
 ‘I saw e_i on TV without recognizing pg_i .’

It has been claimed that parasitic gaps have to be licensed by syntactic A'-movement (Engdahl 1983). If what Raposo proposes in (20) is on the right track, then we can account for the grammaticality of (22) by claiming that movement of the null operator licenses the existence of the parasitic gap.³

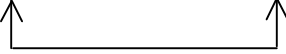
2.2.3 Sigurðsson (2011)

Sigurðsson (2011) addresses issues concerning referential null arguments in a variety of languages, including Icelandic, Finnish, German, and Chinese, by devising a framework in which all referential empty categories have to be connected to a C/Edge linking feature (CLn). This CLn may be a topic feature, a speaker feature, or a hearer feature. Based on the cartographic approach developed by Rizzi (1997) and Cinque (1999), Sigurðsson proposes the following structure:



³ Please refer to Farrell (1990) and Maia (1997) for different analyses of Brazilian Portuguese.

According to Sigurðsson (2011), all C/Edge linking features have to look for an appropriate goal to value in terms of Agree (Chomsky 2001). In cases of null argument constructions, it is this probe-goal relationship that licenses an empty subject or object. Given this Minimalist framework, Sigurðsson accounts for Italian null subject sentences like (24a) in terms of the configuration shown in (24b):

- (24) a. (Tavolta) parlo islandese.
 (sometimes) speak.1SG Icelandic
 ‘Sometimes I speak Icelandic.’
- b. $[_{CP} \dots \{CL_n\} \dots (X) \dots [_{TP} \emptyset - T\Phi \dots]]]$
- 

Assuming that the Italian agreement morpheme is a pronoun realized as \emptyset , Sigurðsson proposes that, regardless of whether or not there is an element occupying the Spec of CP, the composite $\emptyset - T\emptyset$ must be interpreted by associating it with a C/edge-linked feature, which can be 1st, 2nd, or 3rd person.

As for Mandarin Chinese, Sigurðsson proposes that a null referential argument is interpretable as long as it can find an appropriate C/edge-linking feature to associate with.

- (25) a. ____ kanjian ta le.
 see him PERF
 ‘[He/She] saw him.’
- b. Zhangsan_i shuo [_____i hen xihuan Lisi].
 Zhangsan say very like Lisi
 ‘Zhangsan said that he liked Lisi.’

$$(26) \quad [_{CP} \dots \{CLn\} \dots [_{TP} \dots [_{vP} \dots \emptyset \dots]]]$$

The null subject in (25a) connects with the topic feature through distant Agree, while the null subject in the embedded clause in (25b) is related to a more local constituent, the matrix subject in the higher CP domain.

According to Sigurðsson, associating referential null arguments with a CLn feature accomplishes two goals: first, it eliminates the need to postulate different X-drop parameters cross-linguistically (where X may be *pro*, topic, discourse); second, it allows us to dispense with unjustified elements such as indices, whose existence is said to violate the Inclusiveness Condition (Chomsky 1995). Such a mechanism seems desirable, since it is less complex and also more powerful in terms of explanatory force. Nevertheless, we still need to evaluate the effectiveness of this mechanism by looking at its predictions.

Notice that both Sigurðsson (2011) and Huang (1984) identify the contents of null arguments by linking empty categories to a topic. This kind of analysis makes a prediction: as long as a prominent topic has been established in discourse, either the subject or the object position in subsequent sentences can be left empty. The following section examines this prediction.

2.3 Re-thinking the topic-variable analysis

Since Huang (1984, 1989), Mandarin Chinese is considered a radical *pro*-drop language, meaning that subjects and objects in this language can be easily dropped in sentences, as long as their content can be recovered from the discourse. Therefore, when we are presented with the following sentences alone, we tend to assume that these sentences contain empty categories in argument position.

(27) (In)transitive sentences:

a. \emptyset V object

b. \emptyset V

For instance, if nothing precedes the main verb in a transitive or intransitive sentence, such sentences as (27a) and (27b) are dubbed null subject sentences, which means that these sentences have empty subject positions.

(28) Transitive sentences:

Subject V \emptyset

Likewise, if the main verb in a transitive sentence is not followed by a nominal phrase, such sentences are taken to have an empty object position.

Since understanding sentences without arguments in Mandarin Chinese requires co-operation with discourse, linguists usually directly assume that sentences like (27) and (28) have pre-verbal or post-verbal empty argument position, and analyze these positions as being co-referential with a person or an entity that is prominent in the previous discourse context.

This type of analysis works well in some cases, but it does not in others. Discourse does play an important role in helping speakers of Mandarin Chinese interpret ‘argumentless’ sentences, since Mandarin Chinese does not have rich inflectional morphology. But, this fact does not mean that discourse is so powerful that it can license every ‘argumentless’ sentence in Mandarin Chinese. As we will see shortly, relying too much on discourse often results in a situation in which some sentences that are predicted to be grammatical turn out to be unacceptable in real language-use contexts.

Conceptually, discourse can be divided into two types: contextual discourse and linguistic discourse. The former refers to a non-linguistic discourse setting surrounding speakers of a conversation, which

might consist of speakers' world knowledge or what they have perceived visually, while the latter is constituted by linguistic utterances from at least one speaker. In the remaining of this chapter, I direct my focus towards sentences without overt topics, and consider whether or not it is always appropriate to use 'subjectless' or 'objectless' sentences in linguistic discourse contexts. If the answer is positive, we will need to find out if there is any restriction on the use of such sentences, and determine the properties of covert topics that bind empty categories; if the answer is negative, then we have to come up with an alternative analysis to account for how 'argumentless' sentences are formed in Mandarin Chinese.

2.3.1 Different types of topics

Since Huang's (1984) analysis largely depends on topic-hood, it is important to understand what a topic is. The simplest definition of topic is proposed in Reinhart (1981): a topic is 'what the sentence is about.' As I mentioned earlier, Mandarin Chinese has long been viewed as a topic-comment language—see Huang (1982), Li and Thompspon (1976), Ning (1993), Shi (1989, 2000), Shyu (1995), and Tsao (1979, 1990). Tsao (1979, 1990) posits that Chinese topics possess the following characteristics:

(29) Properties of topics:

- a. Topic invariably occupies the S-initial position of the first clause in a topic chain.
- b. Topic can optionally be overtly separated from the rest of the sentence in which it occurs by one of the four particles, *a* (*ya*), *ne*, *me*, and *ba*.
- c. Topic is always definite.
- d. Topic is a discourse notion; it may, and often does, extend its semantic domain to more than one clause.
- e. Topic is in control of the pronominalization or deletion of all the co-referential NPs in a topic chain.

- f. Topic, except in clauses in which it is also subject, plays no role in such processes as true reflexivization, Equi-NP deletion, and imperativization.

Putting aside the debate over whether all topics are truly endowed with these properties (Jiang 1991, Qu 1994, and Shi 2010), at the moment three points are salient: (i) topics must be definite, (ii) topics are derived from discourse, and (iii) in Mandarin Chinese, a topic can be followed by a particle.

Frascarelli (2007) and Frascarelli & Hinterhölzl (2007) summarize work from Büring (1999), Givón (1983), Kuno (1976), Pesetsky (1987), and Reinhart (1981) to arrive at three main types of topics:

- (30) a. *Aboutness(-shift) topic*: an element that is ‘what the sentence is about’ and ‘is newly introduced, newly changed or newly returned to.’
- b. *Contrastive topic*: an element that ‘induces alternatives which have no impact on the focus value and creates oppositional pairs with respect to other topics.’
- c. *Familiar topic*: a given or accessible constituent, which is typically destressed and realized in a pronominal form; or when a familiar topic is textually given and d-linked with a pre-established Aboutness topic, it is defined as a continuing topic.

Frascarelli and Hinterhölzl (2007) provide three examples to demonstrate how each of these topics is derived from discourse.

- (31) a. Aboutness topic:

*Il materiale era tentissimo quindi all’inizio l’ho fatto tutto di corsa cercando di
impiegarci il tempo che dicevate voi magari facendolo un po’ superficialmente pur di
prendere tutto-**l’ultima unit** la sto facendo l’ho lasciata un po’da parte perché ho
ricominciato il ripasso....*

‘The material was quite a lot, so at the beginning I did it in a rush, trying to do it all in the time that you had fixed, maybe a little superficially, so as to do everything- I’m doing the last unit now, I put it aside before because I had started to go through the program again.....’

b. Contrastive topic:

*Le lingue in particolare non c’ho un metodo particolare perché ho avuto una storia travagliata soprattutto con ‘**inglese** [...] con francese benissimo: ho fatto tre anni di medie avevo raggiunto un buon liello secondo me riuscivo a vedere un film – in inglese ho avuto sempre problemi con i professori.*

‘I don’t have a particular method with languages because I had a troubled story, especially with English [...] with French, it was perfect: I studied it for three years at school, I reached a good level I think, I could also see movies in original version- while in English I always had problems with professors.’

c. Familiar topic:

*B: io dovevo studiare le regole qui e lì fare solo esercizio, invece mi aspettavo di trovare dei punti a cui far riferimento ogni volta per vedere la regola, questo mi è mancato praticamente per avere **la conferma** di ricordare tutto insomma; A: comunque quelle domande ti davano **la conferma** che avevi capito; B: ma... magari non me la- non riesco a darmela da sola la conferma.*

‘B: I was supposed to study rules here and do the exercises there, while I expected to find some outlines I could refer to, at any point, to check the relevant rule, this is what I missed, to check that I could remember everything; A: however those questions gave you the possibility to check your understanding; B: well, maybe I cannot make this check on my own.’

In the beginning of (31a), the speaker expresses what (s)he thinks about the material, and explains how (s)he worked on it. When the speaker later turns to talk about a particular element, *l'ultima unit* ‘the last unit’, the authors claim that the topicalized element bears the complex tone L*+H. Since this constituent is not present in the earlier utterance, Frascarelli and Hinterhölzl consider it an Aboutness(-shift) topic: *l'ultima unit* becomes the new focus of the speaker’s discourse. In (31b), the speaker talks about his/her experiences of learning foreign languages, and describes how (s)he is comfortable in French. Then, suddenly, the speaker shifts the topic of conversation to the language *inglese* ‘English’, and points out that (s)he has problems learning it. The presence of *inglese* ‘English’ signals a clear contrast between the speaker’s experiences of learning that language and learning French. As a result, Frascarelli and Hinterhölzl think of the H* tone accompanying *inglese* ‘English’ as marking a contrastive topic. Finally, in (31c), we can clearly see that the NP *la conferma* ‘the check’ remains present through the utterance, which suggests that *la conferma* ‘the check’ in the last sentence can be viewed as a familiar topic. Phonetically, this type of topic bears an L* tone.

2.3.2 First concern

Let us now attempt to apply these topic classifications to examples from Mandarin Chinese. Huang (1984) proposes that the presence of a prominent topic plays a role in licensing empty categories in Chinese:

Huang (1984):

‘...an object EC may not be bound by a matrix argument, though it may be bound by some NP whose reference is fixed in discourse. Its reference must, in other words, be the discourse topic, someone or something that a given discourse is about.’

Assuming (i) that empty categories in Mandarin Chinese can be bound by a discourse topic, and (ii) that there are three different types of topics, I anticipate six contexts in which topics of different kinds may bind either a null subject or a null object. Examples are given below.

(32) Context yielding an Aboutness(-shift) topic:

Speaker A: You know what! When I was shopping downtown with my boyfriend yesterday, I saw Mary having lunch with John in the food court. The T-shirts that they wore had similar colors and patterns. It looks like they're dating. Do you know which John I am talking about? The John_i who plays basketball very well in my class.

Speaker B: *Shenme! e_i renshi Mali?!
 what know Mary
 'What! [John] knows Mary?!'

Speaker B: *Shenme! Mali renshi e?!
 what Mary know
 'What! Mary knows [John]?!'

In this context, Speaker A describes what she saw yesterday, and tells Speaker B what she thinks about the relationship between John and Mary. When Speaker A's utterance is about to end, she shifts the topic of utterance to *John* to ensure that Speaker B understands who she is referring to. In this case, *John* counts as an Aboutness(-shift) topic, since it is the topic that Speaker A turns to address. Given the presence of a clear discourse topic, we should predict, based on Huang's analysis, that Speaker B can utter a sentence in which either the subject or the object position is left empty. However, as we can see in the responses shown above, such responses are not acceptable. In addition, sentences containing an embedded clause with an empty category are not acceptable either.

(33) Speaker C: *Keshi, Jieke shuo-guo [e_i bu renshi Mali].

but Jack say-ASP not know Mary

‘But, Jack said that [John] does not know Mary.’

Speaker C: *Keshi, Jieke shuo-guo [Mali bu renshi e_i].

but Jack say-ASP Mary not know

‘But, Jack said that Mary does not know [John].’

The unacceptability of both sentences in (33) demonstrates that the subject and object positions in an embedded clause cannot be left empty even when one of these positions is co-referential with the discourse topic. On the contrary, these positions have to be filled with either the overt pronoun *ta* ‘he’ or the proper name *Yuehan* ‘John.’

A context that derives a Contrastive topic is given below:

(34) Context giving rise to a Contrastive topic:

Speaker A: Mary’s current boyfriend is Bill, and she lives happily with him, since Bill loves Mary very much and works hard to please her. On the other hand, Mary’s ex-boyfriend, John, is not only lazy but also irresponsible.

Speaker B: *Nanguai e_i meitian chi paomian.

no-wonder everyday eat instant-noodle

‘No wonder [John] eats instant noodles everyday.’

Speaker B: *Nanguai Mali bu xihuan e_i.

No-wonder Mary not like

‘No wonder Mary does not like [John].’

Speaker A talks about what has happened to Mary recently, and expresses the belief that her current boyfriend, *Bill*, can bring happiness to her. At the end of the utterance, Speaker A turns to discuss Mary’s

ex-boyfriend, John, and describes what kind of a person John is. The utterance provided by Speaker A reveals that, compared to Bill, John does not seem like an ideal partner. Given the fact that John's personality is different from Bill's, *John* can be understood as a Contrastive topic. Again, however, as we saw in (32), the availability of a discourse topic does not guarantee the legitimacy of a null subject or a null object. Moreover, similar to what we have in (33), using empty categories in an embedded clause is also forbidden in this context.

- (35) Speaker C: *Suoyi Jieke renwei [e_i mai-bu-qi yi-liang che].
 so Jack think buy-not-rise one-CL car

‘So, Jack thinks that [John] cannot afford a car.’

- Speaker C: *Suoyi Jieke renwei [mei-ren gan guyong e_i].
 so Jack think no-person dare hire

‘So, Jack thinks that no one dares to hire [John].’

The subject and object positions in the embedded clauses in (35) are co-referential with the discourse topic *John*, but they are not allowed to be phonetically null, which is contra the prediction.

Finally, let us look at the last type of topic mentioned in Frascarelli & Hinterhölzl (2007):

- (36) Context containing a Familiar topic:

Speaker A: John_i not only always comes to class on time, but also gets an A in every subject.

Most importantly, he is very humble.

- Speaker B: *Suoyi e_i chang dang ban-zhang.
 so often serve-as class-president

‘So, [he] often serves as the class president.’

- Speaker B: *Suoyi laoshi hen xihuan e_i.
 so teacher very like

‘So, the teacher likes [him]_i very much.’

In this context, Speaker A continues talking about John, and (s)he not only uses the proper name *John* but also the pronoun *he* at the end. Since the pronoun *he* refers to the same person as the previous discourse, this pronoun can be dubbed a Familiar topic, as suggested by Frascarelli & Hinterhölzl (2007) and Pesetsky (1987). Since a Familiar topic is available, we predict that Speaker B should be able to utter sentences containing an empty category that is co-referential with this topic. However, as we can see above, neither null subjects nor null objects are acceptable in this context. In addition, the following sentences show that even when these empty categories appear in an embedded clause, they are still unacceptable.

- (37) Speaker C: *Suoyi Jieke renwei [e_i yiding keyi shenqing-shang hao daxue].
so Jack think definitely can apply-on good university
‘So, Jack thinks that [John] definitely can enter a good university.’
- Speaker C: *Suoyi dajia dou renwei [laoshi hen xihuan e_i].
So everyone all think teacher very like
‘So, everyone thinks that the teacher likes [John] very much.’

The null subject and null object in (37) appear in embedded clauses, and they both refer to the discourse topic, *John*. If we follow Huang’s (1984) topic-variable analysis for (5a) and (5b), we should expect to be able to use (37). However, neither of these two sentences can be uttered in this context.⁴

⁴ I don’t mean to say that it is 100% impossible to drop subjects or objects in conversations in Mandarin Chinese. On the contrary, I believe that dropping arguments across speakers is still likely to happen, but the possibility varies from person to person, from region to region, and from register to register. All I want to show is that a prominent discourse topic is not as powerful as we might think in licensing the use of sentences containing missing arguments in Mandarin Chinese.

(38) Connecting an argument position in the main clause to a discourse topic:

- (39) Connecting an argument position in the embedded clause to a discourse topic:

- In fact, Huang (1984) also suggests another possible analysis for empty categories in Mandarin Chinese: an empty object position may be derived by deleting the topicalized object. In other words, the null object that we see in (5b), repeated below as (40), is a trace created by movement.

*[Him_i], Zhangsan said that Lisi didn't know e_i.'

The examples in (32)~(37) above consisted of conversations between two speakers. In those examples, the first speaker's utterance was contextually richer than the second speaker's. If the situation is reversed, and the second speaker's utterance is richer, can we then use sentences that leave empty either the subject position or the object position? Some examples are given below.

(41) Speaker A: Do you know what happened to John_i last week?


Speaker B: *e_i zuotian lingdao-le yi da-bi nian-zhong jiangjin. Buguo,
yesterday get-ASP one big-CL year-end bonus but
yinwei ta_i gaoshu tai duo ren le, suoyi xianzai
because he tell too many people SFP so now
yi-dui ren xiang jiao ta_i qingke.
one-pile people want ask him treat-meal

‘[John] got a great year-end bonus yesterday. But, since he told too many people about this news, now a lot of them ask him to buy them free meals.’

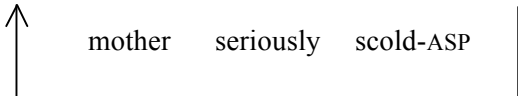
Speaker B: *Mama yanlidi chufa-le e_i, yingwei ta you qifu
mother severely punish-ASP because he again bully
gebi-de xiao meimei le.
neighbor-DE little girl SFP

‘Mother punished [him] severely, because he bullied the neighbor's little girl again.’

In this example, Speaker A aims to gather more information about John by asking a question. The focus on *John* in Speaker B's two responses clearly identifies *John* as the topic of the utterances. Huang's alternative (1984) analysis predicts that Speaker B will be able to use an empty argument in this context by first topicalizing *John* to the sentence-initial position and then deleting it. This process is shown below:

- (42) a. *_[TOP John] t_i lingdao-le yi da-bi nian-zhong jiangjin.....
 get-ASP one big-CL year-end bonus
- 

‘[John] got a great year-end bonus’

- b. *_[TOP John] Mama yanlidi ma-le t_i, yingwei ta you
 mother seriously scold-ASP because he again
- 

‘Mother scolded him seriously, because he bullied our neighbor’s little girl again.’

As we can see here, the topic *John* moves from either the subject position (42a) or the object position (42b), and then drops. Since the sentences containing a null argument in (41) are not grammatical, I conclude that we cannot use the mechanism of topicalization followed by deletion to derive sentences that contain neither arguments nor their antecedents; otherwise, Speaker B’s utterances should be acceptable.

Sentences containing an embedded clause in which the subject or the object position is left empty are not acceptable either.

- (43) Speaker A: Tell me more about John_i.

Speaker B: *Jieke juede [e_i bu xihuan banzhu tongxue]. Chucizhiwai, ta_i
 Jack feel not like help classmate in-addition he
 hai hen zifu, suoyi ban-shang mei-ge ren dou bu
 also very arrogant so class-on every-cl person all not
 xiang gen ta_i shuohua.
 want with him talk

‘Jack feels that [John] does not like to help his classmates. In addition, he is also arrogant, so everyone in the class does not want to talk with him.’

2.3.3 Second concern

There is another concern raised by the topic-variable analysis. Recall that, according to Huang (1984), a topic can be ‘zero’ if it undergoes a deletion process after moving to sentence-initial position. Since this analysis does not specify when we should and should not omit the moved topic, it predicts that sentences with and without overt topics should be equally grammatical. However, a grammaticality contrast does exist between these two types of sentences, as the following examples illustrate.

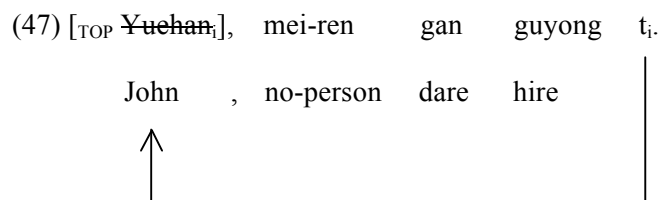
- (45) Speaker B’: Nanguai *Yuehan_i* a, e_i meitian chi paomian.
no-wonder John TOP everyday eat instant-noodle
‘No wonder John_i, he_i eats instant noodles everyday.’

Speaker B’: Nanguai *Yuehan_i* a, Mali bu xihuan e_i.
No-wonder John TOP Mary not like
‘No wonder John_i, Mary does not like him_i.’

- (46) Speaker C’: Suoyi Jieke renwei *Yuehan_i* a, [e_i mai-bu-qi yi-liang che].
so Jack think John TOP buy-not-rise one-CL car
‘So, Jack thinks that John_i, he_i cannot afford a car.’

Speaker C’: Suoyi Jieke renwei *Yuehan_i* a, [mei-ren gan guyong e_i].
so Jack think John TOP no-person dare hire
‘So, Jack thinks that John_i, no one dares to hire him_i.’

(45) and (46) are derived from (34) and (35) by the insertion of an overt topic, the italicized nominal phrase *Yuehan* ‘John’, in the position preceding the clause containing the empty category. The fact that (45) and (46) are acceptable while (34) and (35) are not casts doubt on the analysis, shown in (47), that empty topic sentences are derived by deleting overt topics in corresponding sentences.



Therefore, we need to tease apart sentences with overt topics from those without them, and develop different analyses for each sentence type.

2.4 ‘Subjectless’ sentences and TP-ellipsis

The ungrammatical sentences shown in the previous section seem to suggest that the appearance of null arguments is not directly tied to discourse: even in rich discourse contexts, the subject and object positions in these sentences still cannot be left empty. However, this conclusion is problematic, since we know that arguments can indeed disappear in Chinese sentences. I suggest that, rather than discourse alone, it is the interaction of discourse *content* and another (as yet unidentified) factor that permits the generation of sentences without arguments in Mandarin Chinese.⁶

As I have shown, richer discourse contexts do not increase the likelihood that the subjects of the following sentences will be omitted. Thus, it appears that it is only the presence of an ‘appropriate’ discourse context that permits the use of a ‘subjectless’ sentence. The following two subsections will illustrate what kinds of sentences produce ‘appropriate’ contexts.

Second, when it comes to sentences that do not contain subjects, our attention is often directed to the subject position that is supposed to host a nominal phrase. If this nominal phrase is not present, we tend to assume that there is an empty subject position, which might be treated as *pro*, a variable, a parasitic gap, or a result of NP/DP-ellipsis. As the discussion in the section proceeds, however, I will show that it is also possible to associate the absence of a sentential subject with a structural-level mechanism, rather than

⁶ The discussion in this chapter will focus on sentences without subjects; I will return to a discussion of sentences with empty objects to the next chapter.

a true empty argument category. The following two subsections will demonstrate how Mandarin Chinese relies heavily on this sentence-level mechanism to derive at least one category of ‘subjectless’ sentences.

2.4.1 Apparent null subject sentences (I): Yes-no replies

The subject position in Mandarin Chinese, like the object position, is likely to be left empty. In Section 2.2.1, I illustrated how Huang (1984, 1989) deals with sentences containing empty argument categories. One representative sentence pertinent to our current discussion is repeated below.

(48) *e* lai-le.

come-ASP

‘[He/She] has come.’

According to Huang (1984), when a null subject refers to a person whose reference cannot be fixed within the same sentence, it must be interpreted as a variable bound by a zero topic. However, I have shown above that certain subjects must remain overt even when the relevant topic is recoverable from previous discourse. We therefore have to account for the grammaticality of sentences like (48) in a different way.

The relevant question for the current discussion is: when can speakers of Mandarin Chinese use (48)? First, we need to determine the discourse contexts in which using (48) is legitimate, so that we can explain how such sentences are formed. The following example shows that (48) can serve as the follow-up to a yes-no question.⁷

⁷ Speakers of Mandarin Chinese frequently use pronouns to refer to people, and are more likely to leave the argument position empty when this position is co-referential with an inanimate entity. In this dissertation, in order not to arouse unnecessary confusion about the use of Chinese sentences that do not contain subjects, I exclude cases in which argument positions refer to inanimate objects, and focus on sentences whose missing arguments are animate, like human beings.

- (49) a. Yuehan_i lai-le ma?
 John come-ASP Q
 ‘Has John come?’
- b. e_i lai-le.
 come-ASP
 [John] has come.

When (49b) serves as the affirmative answer to a yes-no question, it need not necessarily contain the subject. In this case, the missing subject in (49b) is interpreted as referring to the person denoted by the matrix subject in (49a). Two more examples are provided below.

- (50) a. Yuehan_i qi-chuang-le ma?
 John arise-bed-ASP Q
 ‘Has John got up?’
- b. e_i qi-chuang-le.
 arise-bed-ASP
 ‘[John] has got up.’

- (51) a. Bier_i biye-le ma?
 Bill graduate-ASP Q
 ‘Did Bill graduate?’
- b. e_i biye-le.
 graduate-ASP
 ‘[Bill] graduated.’

As in (49), the subjects are not overtly realized in (50b) and (51b); even so, the addressees of these sentences will have no problem identifying the persons who got up and graduated.

The facts illustrated above seem to suggest that subjects in yes-no answers can always be ‘dropped.’ However, the following example indicates that the disappearance of subjects is constrained:

- (52) a. Yuehan_i kanjian Bier_j le ma?
 John see Bill SFP Q
 ‘Did John see Bill?’
- b. ??*e_i kanjian Bier/ta le.
 see Bill/him SFP
 ‘[John] saw Bill/him.’

(52a) is like (50a) and (51a) in that it is also a yes-no question that seeks to confirm whether or not the subject conducted the action denoted by the VP of the sentence. Nevertheless, using subjectless (52b) to answer (52a) is prohibited in Mandarin Chinese. Two more similar examples are provided below.

- (53) a. Mali_i renshi Bier ma?
 Mary know Bill Q
 ‘Does Mary know Bill?’
- b. *e_i renshi Bier.
 know Bill
 ‘[Mary] knows Bill.’
- (54) a. Yuehan_i xihuan Mali ma?
 John like Mary Q
 ‘Does John like Mary?’

- b. *e_i xihuan Mali.
 like Mary
 ‘[John] likes Mary.’

(53) and (54) jointly demonstrate that subjects cannot always disappear in yes-no answers.

The discrepancy between the acceptability of (49)~(51)(b) and the unacceptability of (52)~(54)(b) raises a question: why can the response sentences in (52)~(54) not contain an empty subject position, while those in (49)~(51) can? Notice that these two sets of sentences differ from each other only in that the verbs in the earlier set are transitive, while those in the latter set are intransitive. Of course, it would be ad-hoc to propose that only intransitive sentences allow null subjects. In order to account for the asymmetrical behavior between transitive and intransitive verbs with respect to Chinese empty subject positions, we need to see one more set of examples.

The asymmetry just mentioned can be approached from a different angle. Let us consider a new set of replies to (52) to (54). It turns out that these replies can contain a null subject, *provided that the object is also null*.⁸

- (55) a. Yuehan_i kanjian Bier_j le ma?
 John see Bill SFP Q
 ‘Did John see Bill?’
 b. e_i kanjian-le e_j.
 see-ASP
 ‘[John] saw [Bill].’

⁸ As the discussion proceeds, I will illustrate that the argument positions in these sentences, both subjects and objects, are in fact not ‘null’ at all. For the sake of terminological consistency, however, I will continue to describe these as null subjects and null objects for the time being.

The contrast between (52b) and (55b) illustrates that a transitive yes-no response can lack one of its arguments if and only if it lacks both of its arguments. Further evidence for this claim is provided in the following two examples.

- (56) a. Mali_i renshi Bier ma?
 Mary know Bill Q
 ‘Does Mary know Bill?’
- b. e_i renshi e_j.
 know
 ‘[Mary] knows [Bill].’

- (57) a. Yuehan_i xihuan Mali_j ma?
 John like Mary Q
 ‘Does John like Mary?’
- b. e_i xihuan e_j.
 like
 ‘[John] likes [Mary].’

When both arguments of the transitive verbs in (55)~(57) are simultaneously phonetically suppressed, the resulting one-word responses are acceptable. This fact seems to suggest that transitive sentences can be analyzed on a par with intransitive sentences if and only if speakers use the verb alone to respond to a query. However, an important question remains: why must both the external and internal arguments of a transitive verb be dropped simultaneously — why cannot the external argument alone be dropped, as shown in (52)~(54)? To answer this question, let us consider in more detail what type of constituent is actually elided in these constructions.

The acceptable answers to yes-no questions in (55)~(57) share one property: they consist of only the finite verbs from the original question. This type of one-word construction is what Holmberg (2001) calls a *simple yes/no reply*.

In Finnish, a yes-no question can be answered by simply repeating the auxiliary, the modal verb, or the main verb from the original question sentence:

(58) Q: Onko Liisa kotona?
is-Q Liisa at-home
'Is Liisa home?'

A: On
is
'Yes, she is.'

(59) Q: Osaako Liisa puhua ranskaa?
can-Q Liisa speak French
'Can Liisa speak French?'

A: Osaa.
can
'Yes, she can.'

(60) Q: Vihaako Liisa puhua ranskaa?
hates-Q Liisa speak French
'Does Liisa hate to speak French?'

A: Vihaa.
hates
'Yes, she does.'

According to Holmberg (2001, 2005, 2007), 3rd person subject pronouns, unlike 1st and 2nd person subject pronouns, cannot be dropped in Finnish sentences. Therefore, the fact that 3rd person subject pronouns are not present in the answers in (58)~(60) implies that these answers must be derived by some mechanism other than argument drop. Holmberg (2001) proposes that the crucial factor in deriving such answers is polarity focus.

Inspired by Chomsky (1972), which deals with contrastive focus, Holmberg (2001) claims that (i) polarity focus is derived by overt movement to the CP domain, and (ii) a polarity-focus operator Σ (Laka 1990) takes two arguments: a clause that indicates the presupposition and a clause standing for the assertion. Take the following sentence as an illustration.

(61) On Matti käynyt Pariisissa.

has Matti been to Paris.

‘Matti HAS been to Paris.’

(61) can be viewed as a complex yes-no reply to a corresponding yes-no question, since it contains not only the auxiliary but also other sentential constituents. In addition, the fact that the auxiliary precedes the subject in (61) indicates that the auxiliary has moved out of IP to the CP domain. Holmberg capitalizes on the observation that the auxiliary must move out of IP, combined with the assumed presence of a polarity operator Σ in the CP domain, to analyze (61) as in (62).

(62) a. On+ Σ [Matti Pol_{affirm} Käynyt Pariisissa]

b. [[x is affirmative] [Σ [Matti Pol_x has been to Paris]]]

(62a) is the syntactic construction of (61), in which *on* has combined with the polarity operator Σ in CP;

(62b) is its LF form, which is derived via the movement of Pol_{affirm} to a higher position, giving rise to a

configuration in which the IP domain is the presupposition, the CP domain is the assertion, and both are arguments of the operator Σ .

To summarize, under Holmberg's (2001) account, simple yes-no replies in Finnish are derived by movement of the verb to Σ , followed by IP-ellipsis, which deletes everything within the IP domain, including the matrix subject. The simple yes-no replies in (58)~(60) are thus analyzed as follows:

- (63) a. [_{CP} On+ Σ [_{IP} ~~Liisa~~ ~~kotona~~]]
 b. [_{CP} Osaa+ Σ [_{IP} ~~Liisa~~ ~~puhua~~ ~~ranskaa~~]]
 c. [_{CP} Vihaa+ Σ [_{IP} ~~Liisa~~ ~~puhua~~ ~~ranskaa~~]]

In short, these simple yes-no replies are taken to result from a combination of verbal movement and IP-ellipsis.⁹

Turning back to Mandarin Chinese, it seems promising to apply Holmberg's (2001) analysis to those Chinese argumentless yes-no replies. This is what Simpson (to appear) proposes in his paper.

Simpson (to appear) zeroes in on how speakers of Mandarin Chinese answer yes-no questions with a simple repetition of the finite verb. He notes that, when a yes-no question contains an adverb, the bare verbal answer can be understood as containing the adverbial meaning:

- (64) Context: A gangster-boss has just found out that one of his gang is a police informant.
- | | | | |
|----|---|----|------------------------------|
| a. | Heiban-laoda yongli da-le ta ma? | b. | da-le. |
| | gangster-boss severely beat-asp him Q | | beat-ASP |
| | 'Did the gangster-boss severely beat him?' | | 'Yes.' (<i>lit.</i> 'Hit.') |

⁹ Not every simple YNR in Finnish is dealt with in terms of this verb movement-plus-IP-ellipsis mechanism. For more details, please refer to Holmberg (2001).

In the response to (64a), even though none of the subject, the object, or the adverb is expressed explicitly, we still can understand that each of these elements is part of the meaning of the verbal answer *da-le* ‘hit.’ Another example is provided below:

(65) Context: Helping someone sort out a problem with a computer.

- | | | | |
|----|--|----|---------------------------------|
| a. | Ni an-le liang-ci le ma? | b. | an-le. |
| | you press-ASP two-time ASP Q | | press-ASP |
| | ‘Did you click (on the mouse) twice?’ | | ‘Yes.’(<i>lit.</i> ‘Clicked.’) |

(65a) contains a frequency phrase, *liang ci* ‘two times’, which is typically assumed to enter the structure by adjunction. Although the answer in (65b) only contains a verb, speakers of Mandarin Chinese are aware that this verbal answer signifies more than the meaning of the verb; it actually means ‘Yes, I clicked on the mouse twice.’ One more example is given below.

(66) Context: The speaker asks about the scheduled departure of a plane from Los Angeles which did not yet arrive at its destination, San Francisco.

- | | | | |
|----|---|----|----------------------------------|
| a. | Feiji cong luoshanji qifei-le ma? | b. | qifei-le. |
| | plane from L.A. take-off-ASP Q | | take-off-ASP |
| | ‘Did the plane take off from L.A.?’ | | ‘Yes.’(<i>lit.</i> ‘Took-off.’) |

The question in (66a) explicitly contains a prepositional phrase that specifies the location of departure of the plane. The single-word verbal answer in (66b) can be paraphrased as ‘Yes, the plane took off from L.A.’, which includes not only the meaning of the subject but also that of the locative adverbial phrase.

Given that these verbal answers seem to convey the meaning of a complete sentence, Simpson adopts Holmberg’s (2001) analysis of Finnish verbal answers for Mandarin, proposing that the surface

structure of the Mandarin verbal answers is derived via movement of the verb to the CP domain and deletion of the lower clause, TP.

An analysis built on TP-ellipsis predicts that bare verbal answers in Mandarin Chinese cannot co-occur with any TP-internal constituents. This prediction is borne out by the ungrammaticality of the following example.

(67) Context: Krispy Kreme opened its first store in Taiwan a few months ago. Now, it takes two hours on average to buy their doughnuts.

- a. Yuehan mai-dao tiantianquan le ma?
 John buy-arrive doughnut SFP Q
 ‘Did John buy doughnuts (of Krispy Kreme)?’
- b. *Hen-kuai-di mai-dao-le.
 very-quick-PART. buy-arrive-ASP
 Intended meaning: ‘John quickly bought the doughnuts.’
- c. Yuehan hen-kuai-di mai-dao-le tiantianquan.
 John very-quick- PART. buy-arrive-ASP doughnut
 ‘John quickly bought the doughnuts.’

(67a) can be answered by the matrix verb, *mai-dao-le* ‘bought.’ However, if we need to describe the manner in which John bought the doughnuts, we have to use the complete sentence (67c), rather than (67b). The ungrammaticality of (67b) can be attributed to the fact that the adverb *hen-kuai-di* ‘quickly’ is a vP-level adjunct, so it cannot appear in a sentence deriving by TP-ellipsis. Such adjuncts can only survive if TP-ellipsis does not take place, as in the sentence shown in (67c).

On the other hand, given the present analysis, we should expect that verbal answers *can* co-occur with CP-level adverbs, since TP-ellipsis will not have any effects on them. The following example illustrates that, indeed, verbal answers in Mandarin Chinese can be accompanied by such high adverbs.

(68) Context: John is a big fan of Michael Jordan. One day, he went to a department store to buy the

Air Jordan 1 Retro High shoes, which are limited edition.

a. Yuehan mai-dao na shuang xie le ma?

John buy-arrive that pair shoe SFP Q

‘Did John buy that pair of shoes?’

b. ?Hen-xingyun-di mai-dao-le.

very-lucky-PART. buy-arrive-ASP

Intended meaning: ‘Luckily, John bought them.’

The fact that the adverb *hen-xingyun-di* ‘luckily’ can appear with the verbal answer in (68b) demonstrates that this adverb adjoins to a position higher than TP. Therefore, the appearance of such adverbs is not subject to TP-ellipsis, and is compatible with a moved verb landing in C.

Although I have listed several pieces of evidence in favor of an analysis built on verb movement followed by TP-ellipsis, two important questions remain to be addressed. First, does the bare verb in the verbal response move to the head of CP through each intermediate head, or does it cross them all in one step? We can answer this question by looking at the following examples.

(69) Q: Yuehan mingnian neng biye ma?

John next-year can graduate Q

‘Can John graduate next year?’

A: Neng.

can

‘Yes, he can.’

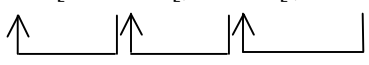
A’: *Biye.

graduate

‘Yes, he can.’

- (70) Q: Yuehan mingtian hui yu-dao Mali ma?
 John tomorrow will meet-arrive Mary Q
 ‘Will John see Mary tomorrow?’
- A: Hui.
 will
- A’: *Yu-dao.
 meet-arrive
 ‘Yes, he will.’

The yes-no questions in (69) and (70) each contain a modal—*neng* ‘can’ and *hui* ‘will’, respectively. If the addressee wants to answer one of these yes-no questions succinctly, (s)he must use the modal rather than the action verb as the verbal answer. On the assumption that modals occupy the head of TP, the acceptable replies to these questions can be understood to derive from movement of the modal to the CP domain followed by deletion of TP. This being the case, it follows that, in sentences like (49)~(51) and (55)~(57) that do not contain modals, the verb also moves to the CP domain via head-to-head movement. This amounts to saying that the verb must travel through every intermediate head between its base position and its final landing site; otherwise, there would be no principled way for us to account for the unacceptable verbal replies in (69) and (70). Given this consideration, the derivation of Mandarin Chinese verbal answers is illustrated below:

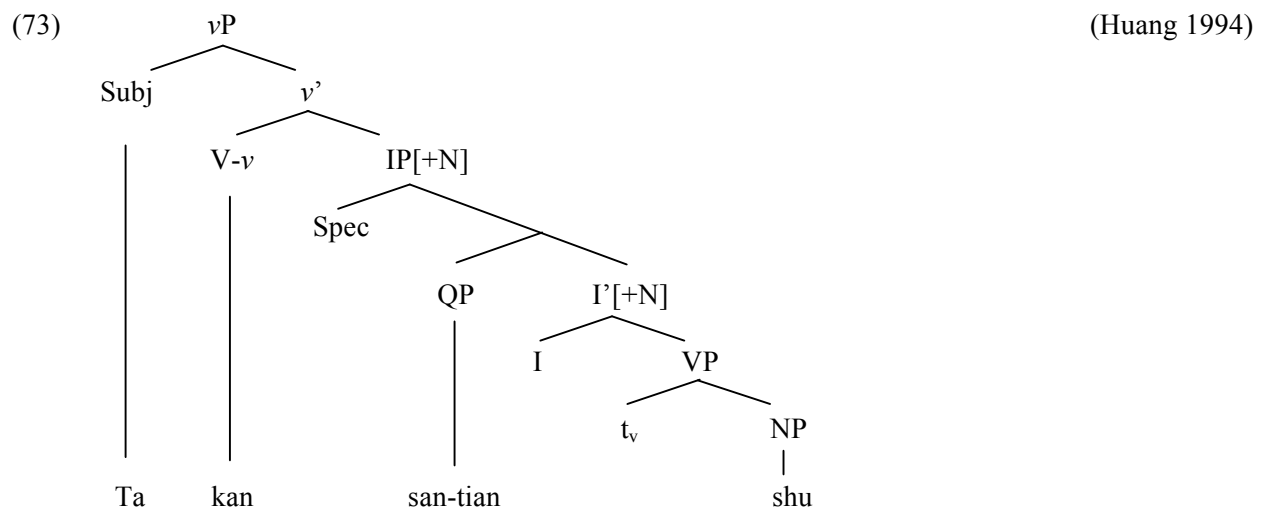
- (71) [CP C [TP T [vP v [vP V]]]]]
- 

In (71), we see that verb movement and TP-ellipsis together conspire to derive verbal answers in Mandarin Chinese; (71) also illustrates that verb movement in Mandarin Chinese has to respect Travis’s (1984) Head Movement Constraint.

A second question concerning this analysis arises from the solution to the first question. The claim made immediately above, that the verb undergoes movement to the CP domain in the formation of verbal responses, does not comply with the well-established fact that verbs in Mandarin Chinese do not move out of *vP*. Huang (1994, 1997) proposes that verb movement in Mandarin Chinese only takes place from within VP to the head of *vP*. Two examples involving such V-to-*v* movement are represented below.

- (72) Ta kan-le san-tian (de) shu. (Huang 1994)
 he read-asp three-day GEN book
 ‘He read (books) for three days.’

In this sentence, the matrix verb is separated from its complement *shu* ‘book’ by a temporal expression, which describes how long the action denoted by the matrix verb has lasted. In order to account for the surface order of sentences like (72) without failing to characterize the syntactic relationship between a verb and its complement, Huang proposes that the separation of a verb from its complement is derived by movement of the verb from its base position, which is linearly adjacent to the complement, to a higher position. Therefore, the derivation of (72) should look like (73).



(73) involves two mechanisms: gerundive nominalization, and verb movement. The former is accomplished in the IP domain below ν P, and the latter is implemented by V-to- ν movement. As we can see in this construction, the matrix verb is originally base-generated in V, and takes the NP *shu* ‘book’ as its complement. Once the derivation reaches ν P, the verb raises to the head of ν P and lands in a higher position. It is this movement that results in the separation of the verb from its argument.

Another piece of evidence demonstrating V-to- ν movement in Mandarin Chinese comes from Lin (2001, 2012). Lin notes that there is a difference between the use of the English verb *put* and its Mandarin Chinese counterpart *fang* ‘put.’

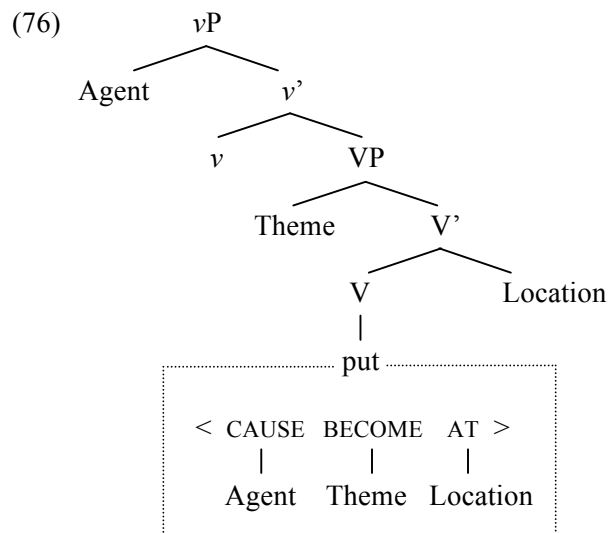
- (74) a. John put a book on the table.
 b. *John is putting a book.
 c. *The book put on the table.

- (75) a. Zhangsan fang yi-ben shu zai zhuo-shang.
 Zhangsan put one-cl book at table-on
 ‘Zhangsan put a book on the table.’
 b. Zhangsan zai fang xingli, (mashang guo-lai).
 Zhangsan PROG put luggage right-away come-over
 ‘(Lit.) Zhangsan is putting his luggage; he will come over right away.’
 c. Shu fang zai zhuoshang, (conglai mei ren dong-guo).
 book put at table-on ever no person touch-EXP
 ‘(Lit.) The book puts on the table, and no one has ever touched it.’

In English, use of the verb *put* requires the presence of an agent, a theme, and a locative phrase in the same sentence; as a result, the NP bearing the role of theme cannot occupy the subject position of an active sentence. However, the Chinese verb *fang*, translated as ‘put’, seems to impose a relatively loose

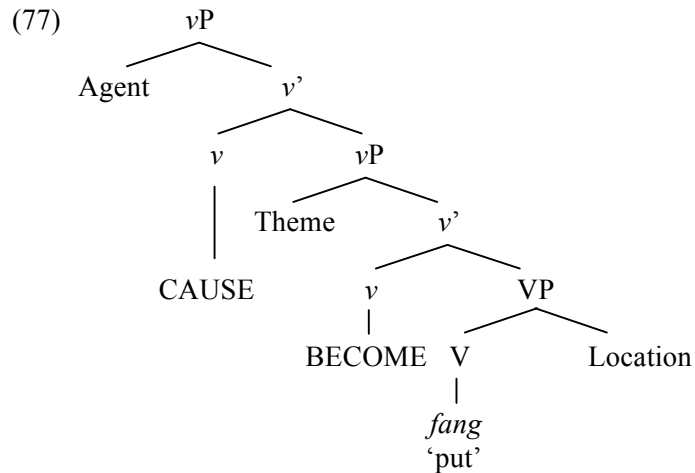
syntactic restriction on the sentence containing it. (75b) shows that the locative phrase can be excluded from the sentence, and the theme *shu* ‘book’ can appear as the subject of an active sentence, as shown in (75c).

Lin (2001, 2012) concludes that English incorporates event information into lexical items, while Mandarin Chinese does not. This idea is represented in the following configurations:

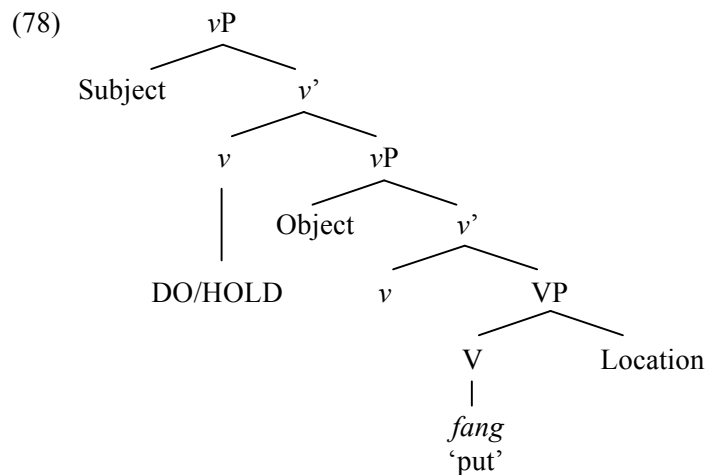


According to (76), the verb *put* encodes three eventuality predicates: CAUSE, BECOME, and AT; each of these predicates selects a constituent bearing a corresponding thematic role. Based on this configuration, Lin claims that, in order to fulfill the semantic requirement of the verb *put*, three constituents must be inserted into the structure. In other words, the surface form of an English sentence can be thought of as the reflex of the semantic content of the matrix verb.

In contrast, Lin (2001, 2012) proposes that a Chinese verb such as *fang* ‘put’ is less ‘informative’ than its English counterpart *put*, in that it does not encode any event information. Instead, all the event information is realized by light verbs in narrow syntax.



If the verb raises to merge with the particular light verbs (CAUSE and BECOME) shown in (77), then the resultant sentence expresses accomplishment. On the other hand, if *fang* ‘put’ merges with the light verbs DO or HOLD, then the outcome will yield an event of activity or state, respectively. This accounts for the ability of Mandarin Chinese speakers to use (75b) and (75c).



Analyzing English and Mandarin Chinese this way gives us an account of why these two languages differ with respect to the use of their verbs meaning *put*.

Although verb movement does take place in Mandarin Chinese, it is generally accepted that Mandarin verbs cannot move further than vP. The first piece of evidence against verb movement out of

vP in Chinese comes from sentences in which verbs and adverbs like *often* and *usually* appear simultaneously.

(79) a. Yuehan changchang chi binggan.

John often eat crackers

‘John often eats crackers.’

b. *Yuehan chi changchang binggan.

John eat often crackers

‘John often eats crackers.’

(80) a. Yuehan tongchang mei-zhou kan yi-bu dianying.

John usually every-week watch one-CL movie

‘John usually watches a movie every week.’

b. *Yuehan kan tongchang mei-zhou yi-bu dianying.

John watch usually every-week one-CL movie

‘John usually watches a movie every week.’

(79) and (80) show that placing the verb in front of the frequency adverb renders the resulting sentence ungrammatical (see relevant diagnostics in Pollock 1989).

Another piece of evidence against this movement stems from the fact that verbs cannot precede locative adverbial phrases.

(81) a. Feiji cong Taibei qifei le.

plane from Taipei take-off SFP

‘The plane has taken off from Taipei.’

- b. *Feiji *qifei* cong Taibei le.
 plane take-off from Taipei SFP
 ‘The plane has taken off from Taipei’

As we can see in (81), switching the order of a verb and a locative adverbial phrase results in ungrammaticality.

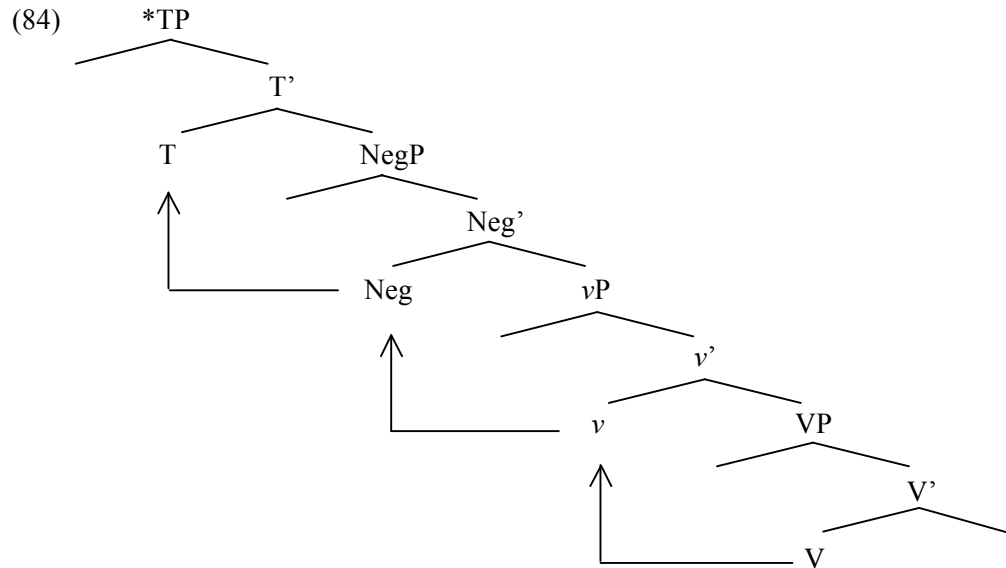
Finally, verbs are not allowed to precede negation markers in Mandarin Chinese.

- (82) a. Yuehan zuotian mei-you chi shucai.
 John yesterday not-have eat vegetable
 ‘John did not eat vegetables yesterday.’
 b. *Yuehan zuotian chi mei-you shucai.
 John yesterday eat not-have vegetable
 ‘John did not eat vegetables yesterday.’

- (83) a. Yuehan mingtian bu hui da diandong.
 John tomorrow not will play video-game
 ‘John will not play video games tomorrow.’
 b. *Yuehan mingtian da bu hui diandong.
 John tomorrow play not will video-game
 ‘John will not play video games tomorrow.’

There are two negation markers in Mandarin Chinese, *bu* and *meiyou*. As we can see in (82) and (83), no matter which negation marker is used in these sentences, the verb cannot precede it.

Thus, it appears that raising a verb out of vP is prohibited in Mandarin Chinese. In other words, the following derivation cannot take place:



Taking the case involving negation markers (82 and 83) as an example, and assuming that Mandarin negation markers occupy the specifier of NegP, we can see that a verb cannot move across NegP to the TP domain to land in a position structurally higher than the negation marker.

If a verb cannot move into the TP domain, how can it move into the CP domain in verbal-answer constructions? I propose to solve this problem by relying on Merchant's (2001, 2004) discussion of sluicing and fragment answers. Let us look at fragment answers first.

(85) a. Who did she see? (Merchant 2004)

b. John.

c. She saw John.

(86) a. What's that? (Merchant 2004)

b. A dish.

c. It's a dish.

- (87) a. What's left for me to eat? (Merchant 2004)
- b. Some turkey.
- c. There's some turkey.

The answers to the questions in (85)~(87) may take two possible forms. One is a complete sentence containing the main predicate and the argument(s); the other is a bare nominal phrase, called a *fragment answer* in Merchant's paper. Contra Barton (1990), Ginzburg and Sag (2000), and Stainton (1998), Merchant (2004) claims that fragment answers should be analyzed as moving from inside the clause in which they are base-generated. Some pieces of evidence based on connectivity effects are given below.

- (88) Greek: (Merchant 2004)

Q: Pjon idhe i Maria?

who.ACC saw the Maria

'Who did Maria see?'

- a. A: *O Giannis.

the Giannis. NOM

- b. A: Ton Gianni.

the Gianni. ACC

- (89) Russian: (Merchant 2004)

Q: Komu pomogla Anna?

who.DAT helped Anna

'Who did Anna help?'

- a. A: Ivanu.

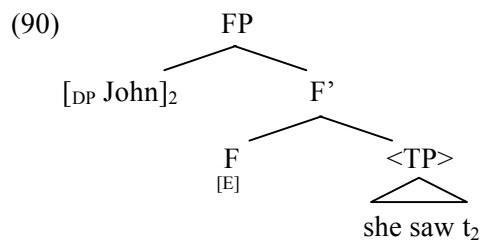
Ivan. DAT

- b. A: *Ivan/Ivana.

Ivan.NOM/Ivan.ACC

Note that, in (88) and (89) above, the choice of Case marker on each fragment answer depends on the grammatical function of the host nominal phrase. This agreement behavior suggests that the nominal phrases serving as fragment answers were originally base-generated in full-fledged sentences. As a result, Merchant proposes that fragment answers are derived by a process of movement and deletion.

(90) shows how (85b) is derived: due to the appearance of the [E] feature on the head F, the whole TP gets deleted after the object *John* moves to the Spec of FP.¹⁰



The analysis that Merchant proposes for fragment answers is similar to his analysis for sluicing constructions. Some sluicing examples are given below.

- (91) a. Jack bought something, but I don't know what.
 b. A: Someone called. B: Really? Who?
 c. Sally's out hunting—guess what?

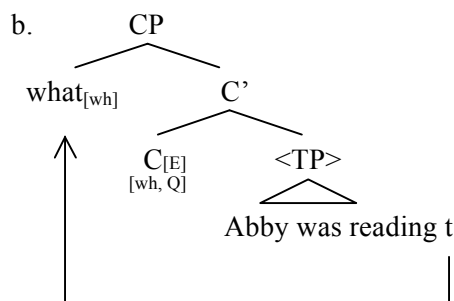
¹⁰ Strictly speaking, the complement of a head bearing a [E] feature is not really 'deleted.' Merchant (2004) states: 'In essence, E instructs the post-PF phonological interpretative component not to parse its complement.' In other words, the disappearance of a particular constituent is treated as an effect of phonetic suppression. However, for descriptive convenience, I continue to use the word 'delete' throughout this dissertation.

Ross (1969) noticed that the Case marker on a sluiced *wh*-phrase has to match the one attached to the same *wh*-phrase in a non-sluicing construction.

- (92) a. Er will jemandem schmeicheln, aber sie wissen nicht,
 he wants someone.DAT flatter but they know not
 { *wer /*wen /wem }.
 who.NOM who.ACC who.DAT
 ‘He wants to flatter someone, but they don’t know who.’
- b. Sie wissen nicht, { *wer /*wen /wem } er schmeicheln will.
 they know not who.NOM who.ACC who.DAT he praise wants
 ‘They don’t know who he wants to praise.’

(92b) is the complete form of the sentence following *aber* ‘but’ in (92a). As we can see here, the Case of the sluiced *wh*-phrase *who* in (92a) is the same as the one in (92b). This fact suggests that the second sentence of (92a) is derived via movement of the *wh*-phrase and deletion of the following constituents. Based on these observations, Merchant (2001, 2004) derives the following analysis for sluicing constructions:¹¹

- (93) a. Abby was reading something, but I don’t know what < Abby was reading *t* >.



¹¹ For other discussions on sluicing constructions, please refer to Chao (1987), Chung et al. (1995), Ginzburg and Sag (2000), Lasnik (2001), Lobeck (1995), and van Riemsdijk (1978).

Simply put, Merchant proposes that the *wh*-phrase *what* moves out of the TP domain, and an [E] feature on C provides the PF component with the opportunity not to pronounce the complement of C—a TP, in this case.¹²

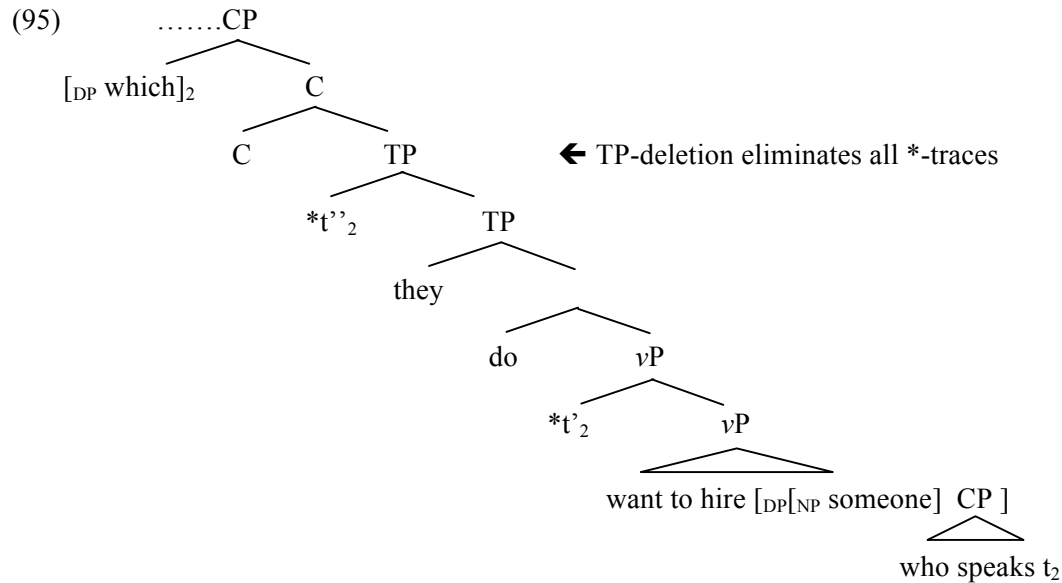
Although fragment answers and sluicing constructions pattern alike with respect to their derivation, there is one fundamental difference between them: sluicing constructions are not subject to island boundaries, while fragment answers are.

(94) They want to hire someone who speaks a Balkan language, but I don't remember *which*.

The sentence in (94) ends with the sluiced *wh*-phrase *which*, which is assumed to move from its base position under Merchant's framework. However, we expect Subjacency effects to interact with the *wh*-phrase *which* during its movement to a higher position, since *which* has moved out of a complex NP. Thus, the grammaticality of this sentence seems to pose a challenge to the well-known fact that sentences that incur Subjacency violations are ungrammatical.

Based on work by Fox and Lasnik (2003), Johnson (2002), Kennedy and Merchant (2000), Merchant (to appear), Nunes and Uriagereka (2000), and Uriagereka (1999), Merchant (2004) obviates this problem by assuming that "island violations are due to properties of pronounced syntactic structure, not to constraints on derivations or LF representations themselves" (Merchant 2004:706). In other words, incurring island violations during the derivation does not necessarily yield ungrammatical results; only island violations that are still detectable in the final pronounced structure lead to ungrammaticality. Given this assumption, Merchant (2004) accounts for the derivation of the sluicing construction in (94) in the following way:

¹² Merchant (2001, 2004) assumes that the [E] feature is syntactically composed of [*uwh**, *u* Q*], and must be checked by an element that also bears the [wh, Q] features. In the case under discussion here, the head C is the most ideal candidate to check off the [*uwh**, *u* Q*] features on [E], so [E] combines with C.

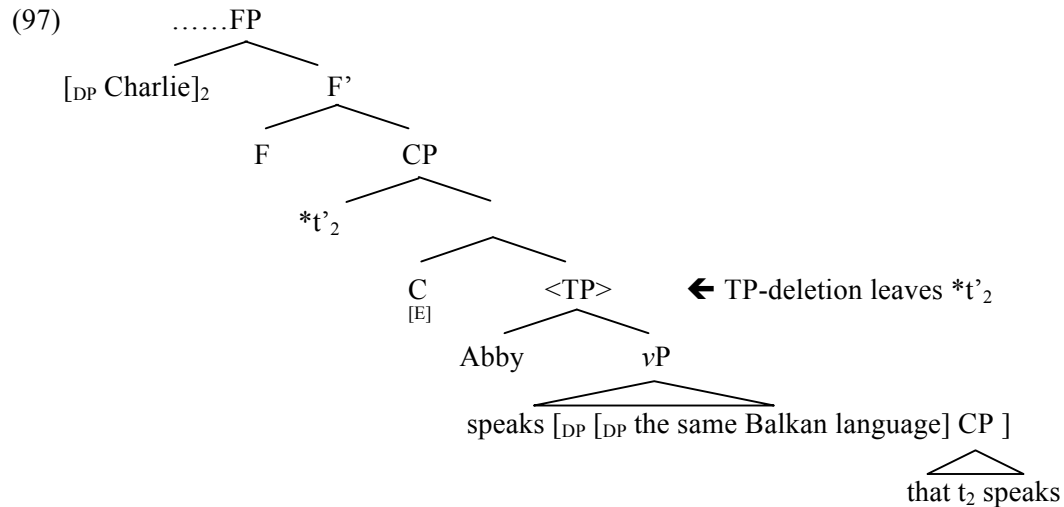


Adopting Fox's (1999) assumption that *wh*-movement has to go through each intermediate maximal projection, Merchant (2004) attributes the grammaticality of (94) to the idea that all offending island traces are erased with the application of TP-deletion, shown in (95).

Consider the ungrammatical fragment answer illustrated in the following example:

- (96) a. Does Abby speak the same Balkan language that *Ben* speaks?
- b. *No, Charlie.

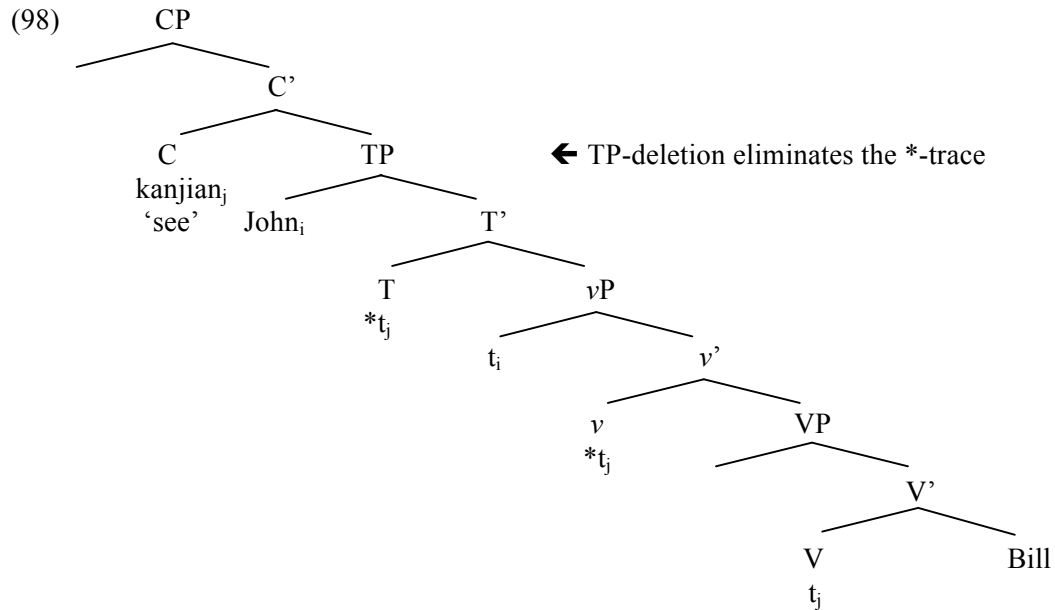
If the grammaticality of a sentence relies on whether or not an offending trace appears in the pronounced structure, the ungrammaticality of (96b) seems to imply that there is some unwanted trace remaining within the fragment answer. This is indeed what Merchant (2004) proposes.



As we can see in (97), *Charlie* moves from within a complex-NP island to a domain higher than CP, and leaves a trace behind. Since fragment answers are derived by the deletion of TP only, the offending trace *t'₂ in the CP domain still remains in the structure. This is why (96b) is unacceptable.

Let us now turn to Chinese verbal answers. Recall that verbs in Mandarin Chinese cannot move to a domain higher than vP, yet single, 'argumentless' verbs can appear as grammatical responses to yes/no questions. Assuming that illicit movement of a verb to a higher domain triggers island-violation-like effects, and following Merchant's (2004) solution to the problem of offending traces, I propose that verbs can move upwards in verbal answers without causing any ungrammaticality because offending traces have disappeared along with the deletion of TP. Take (55), repeated below, as an illustration:

- (55) a. Yuehan_i kanjian Bier_j le ma? b. kanjian-le.
- John see Bill SFP Q see-ASP
- 'Did John see Bill?' '[John] saw [Bill].'



Movement of the verb *kanjian* ‘see’ to the CP domain leaves offending traces on T and *v*, respectively, since this movement is supposed to be unacceptable.¹³ However, thanks to clausal ellipsis that deletes everything within TP, the offending traces are eliminated, and the resulting pronounced structure is rendered acceptable. Based on this analysis, an accurate representation of sentences like (55b) is not the one in (99a), but the one in (99b).

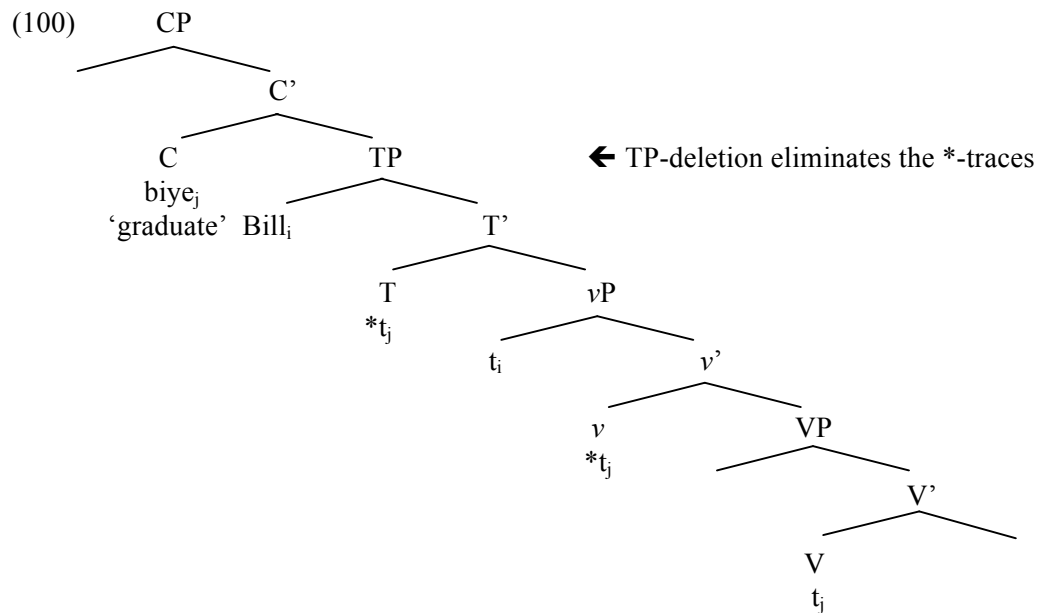
- (99) a. $[_{TP} e_i [_{vP} \text{kanjian}_K [_{VP} t_K e_j]]$
 b. $[_{CP} \text{Kanjian}_K [_{TP} \text{John} t_K [_{vP} t_K [_{VP} t_K \text{Bill}]]]]$

The analysis laid out above indicates that the surface structure of ‘sentences’ like (55b) does not consist of a verb sandwiched between two empty argument positions (99a); instead, the argument positions are filled with overt nominal phrases throughout the derivation, and the apparent empty subject and object positions are derived by movement of the verb to the CP domain followed by TP-ellipsis (99b).

¹³ I simply use C rather than Σ to represent the landing site of the moved verb in this section, but semantically C and Σ are the same in this case in the sense that both of them indicate the existence of polarity focus.

This analysis can also be applied to intransitive verbal answers, such as the one in (51b):

- (51) a. Bier biye-le ma?
 Bill graduate-ASP Q
 ‘Did Bill graduate?’
- b. biye-le.
 graduate-ASP
 ‘[Bill] graduated.’



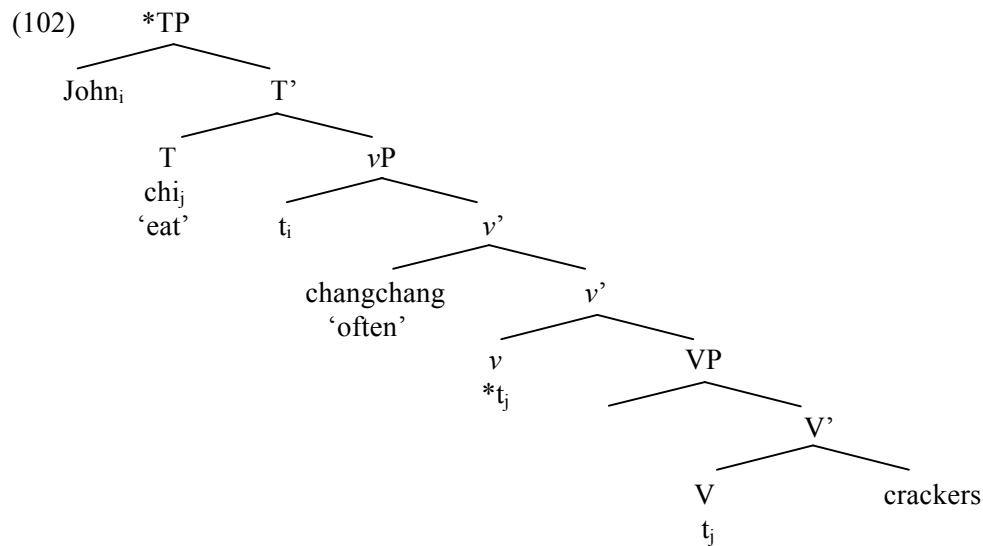
The traces left by the movement of the verb *biye* ‘graduate’ are eliminated by the deletion of TP, and the main verb surfaces in the CP domain. Under this analysis, the apparent disappearance of subjects in intransitive verbal answers like those in (49)~(51) is the result of clausal ellipsis that deletes not only the subject but also other constituents within TP. The syntactic analysis in (101a), in which the verb itself is preceded by an empty subject position, is therefore an inappropriate analysis for (51b). Rather, (51b) should be analyzed as shown in (101b): the subject position is in fact full, but clausal ellipsis yields the illusion that it is empty.

- (101) a. $[_{TP} e_i [_{vP} biye_K-v [_{VP} t_K]]$
 b. $[_{CP} biye_K [_{TP} \text{Bier} t_K [_{vP} t_K [_{VP} t_K]]]]$

Based on these observations, we can attribute the ungrammaticality of a fronted verb preceding a frequency adverb to the fact that the offending trace is not eliminated and remains in the pronounced structure. Take (79b) as an illustration:

- (79) b. *Yuehan chi changchang binggan.
 John eat often crackers
 ‘John often eats crackers.’

The derivation of this sentence is shown below.



Since clausal ellipsis does not take place, the offending trace on v survives, rendering this sentence ungrammatical.

After settling down all relevant issues, I would like to add one more piece of evidence in favor of the analysis built on verb movement and TP-ellipsis.

Indefinites can appear in object position of a declarative or an interrogative sentence in Mandarin Chinese. Given the discussion laid out above, it is not surprising to see a context in which a (compound) verb is used to answer a yes-no question containing an indefinite.

- (103) Context: Before going to a party, John told his friends that he was going to finish 10 bottles of beer in the party. When the party was going to be over, one of John's friends asked:

Speaker A: Yuehan he-wan shi-guan pijiu le ma?

John drink-finish ten-CL beer SFP Q

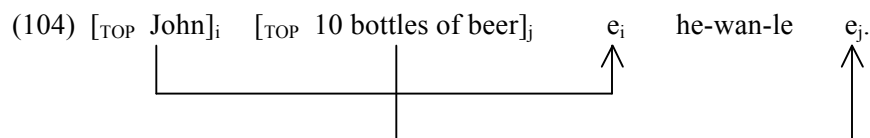
‘Has John finished 10 bottles of beer?’

Speaker B: he-wan-le.

drink-finish-ASP

‘John has finished 10 bottles of beer.’

One possibility to analyze Speaker B's response is given below:



The problem facing the analysis shown in (104) is that there is an indefinite topic that binds an empty object position. However, given the fact that topics have to be definite (see the discussion in subsection 2.3.1), such an analysis is not adequate. Therefore, we should abandon this analysis and embrace the mechanism composed of verb movement and TP-ellipsis, which deletes not only the referential subject but also the indefinite object, shown below.

(105) [_{CP} He-wan-le_K [_{TP} ~~John~~ ~~t_K~~ [_{VP} ~~t_K~~ [_{VP} ~~t_K~~ 10 bottles of beer]]]]

I have shown in this section that the subject position in Mandarin Chinese cannot be left empty on its own, as evidenced by the fact that transitive sentences become unacceptable when only the subject is deleted. Following Simpson's (to appear) analysis that verbal answers in Mandarin Chinese are derived through clausal ellipsis, I propose that the reason that movement of verbs out of *vP* does not cause problems is because the ungrammaticality-triggering traces are deleted along with the clausal ellipsis that elides TP.

2.4.2 Apparent null subject sentences (II): answers to *wh*-questions

In earlier subsections, I argued extensively that the use of 'subjectless' sentences in Mandarin Chinese must be constrained, since (i) speakers of Mandarin Chinese cannot drop subjects at random, and (ii) sentences with no subjects are acceptable only when they serve as follow-ups for particular types of sentences. In the previous subsection, we saw that speakers of Mandarin Chinese can use bare verbs to answer yes-no questions, resulting in 'subjectless' sentences. In fact, absence of subjects is observed not only in answers to yes-no questions, but also in answers to *wh*-questions in Mandarin Chinese.

(106) Shuijiao. / Kan dianshi. / Shang wang.
 sleep watch TV use internet
 '(S)he is sleeping. / (S)he is watching TV. / (S)he is using the Internet.'

As I argued at length in previous sections, when 'subjectless' sentences are presented to us, we cannot directly jump into the conclusion that these sentences are null subject sentences, unless we know in what context speakers of Mandarin Chinese use these sentences. Therefore, we need to think about what can

count as appropriate antecedent sentences for these ‘subjectless’ sentences. Sentences in (106), repeated as (107c) below, can serve as the answers to *wh*-questions in (107a).

- (107) a. Yuehan_i zheng-zai zuo shenme?
 John PROG. do what
 ‘What is John doing now?’
- b. Ta_i zheng-zai shuijiao / kan dianshi / shang wang.
 he PROG. sleep / watch TV / use internet
 ‘He is sleeping. / He is watching TV. / He is using the Internet.’
- c. Shuijiao. / Kan dianshi. / Shang wang.
 sleep watch TV use internet
 ‘He is sleeping. / He is watching TV. / He is using the Internet.’

Another example is given below.

- (108) a. Ni_i mingtian yao gan má?¹⁴
 you tomorrow will do what
 ‘What will you do tomorrow?’
- b. Wo_i mingtian yao zai jia xie zuoye / kan xiaoshuo.
 I tomorrow will at home write homework read novel
 ‘I will do homework at home tomorrow. / I will read a novel at home tomorrow.’
- c. Zai jia xie zuoye / kan xiaoshuo.
 at home write homework read novel
 ‘I will do homework at home tomorrow. / I will read a novel at home tomorrow.’

¹⁴ This is a very colloquial way to ask ‘What will you do tomorrow?’ in Mandarin Chinese, and the sentence-final *ma* in this case is different from the *ma* in yes-no questions.

(107) and (108) together show that there are two ways to answer *wh*-questions: one is the complete-sentence form that contains almost every constituent present in the question; the other is a shorter form, consisting exclusively of the VP that denotes the action, which can be transitive or intransitive, as well as optional additional constituents like locative phrases.

The short answers shown in (107)~(108) are similar to the verbal answers to yes-no questions in that they do not contain subjects, but different in that they are allowed to contain VP-internal objects. This disparity suggests that we cannot rely on verb movement to derive these short-answer sentences. In addition, given the fact that the availability of a prominent topic from discourse is not sufficient to license a null subject in the sentence uttered later, the short-answer sentences in (107)~(108) cannot be analyzed as topic-drop constructions; in other words, the ‘subjectless’ sentences in (107c) and (108c) cannot be taken to contain a topic-bound variable in subject position.

The impossibility of analyzing the pre-verbal empty subject positions in (107c) and (108c) as topic-bound variables can be approached from a different angle. If these ‘empty’ subject positions were topic-bound variables, the following sentences should be acceptable.

(109) a. #Ta_i, ec_i shuijiao.

he sleep

Intended reading: ‘He is sleeping.’

b. #Wo_i, ec_i zai jia xie zuoye.

I at home write homework

Intended reading: ‘I will do homework at home tomorrow.’

Contra this prediction, we find that (109a) and (109b) cannot serve as felicitous answers to (107a) and (108a). This fact indicates that short answers to *wh*-questions like those in (107c) and (108c) do not contain topic-bound variables; if they did, we could not account for the unacceptability of (109), in which the topics are overtly present.

The superficially empty pre-verbal subject position cannot be treated as *pro*, either; if it were *pro*, the following sentences should be as grammatical as the short answers in (107) and (108).

- (110) *Ta shuijiao. / *Ta kan dianshi. / *Ta shang wang.
 he sleep he watch TV he use internet
 ‘He is sleeping. / He is watching TV. / He is using the Internet.’

- (111) *Wo zai jia xie zuoye. / *Wo zai jia kan xiaoshuo.
 I at home write homework I at home read novel
 ‘I will do homework at home tomorrow. / I will read a novel at home tomorrow.’

Inserting an overt pronoun *ta* ‘he’ or *wo* ‘I’ in the sentence-initial position of the short answers in (107) and (108) yields ungrammaticality, which suggests that the verbs in these cases are not preceded by *pro*.

Nevertheless, the short-answer sentences in (107) and (108) can be analyzed on a par with the fragment answers discussed in Merchant (2004). One of the fragment-answer examples is repeated below.

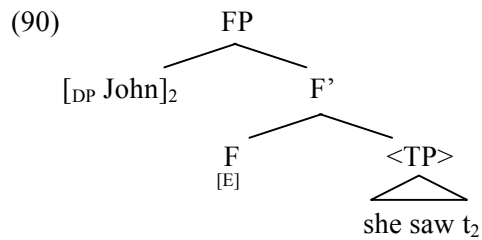
- (85) a. Who did she see? (Merchant 2004)
 b. John.
 c. She saw John.

As we can see in (85), the fragment answer, *John*, can constitute a complete answer to the *wh*-question (85a); it is also possible to use a complete sentence (85c). Although Mandarin Chinese is a *wh*-in-situ language whereas English is not, if we compare examples like (85) with (107) and (108), we find that both types of question-answer pairs have the following properties in common:

(112) The properties of answers to *wh*-questions in English and Mandarin Chinese:¹⁵

- (i) There are two different ways to answer such types of *wh*-questions: a simple one and a complex one.
- (ii) The subject is not overtly present in the simple answer.
- (iii) The simple answer is part of the complex answer.

Recall that Merchant (2004) proposes to derive nominal fragment answers via a two-step process. (90), which illustrates this derivation, is repeated below:



According to Merchant (2004), the E feature in fragment-answer sentences differs from the E feature in sluicing constructions in that the strong uninterpretable feature that it bears is not [*uwh**, *uQ**] but *uF**, a Focus feature that can only be checked by a focused element. Therefore, the nominal fragment answer *John* must be attracted to the Spec of FP from its base-generated position, after which the E feature on the head of FP instructs the post-PF component not to pronounce its complement, TP.

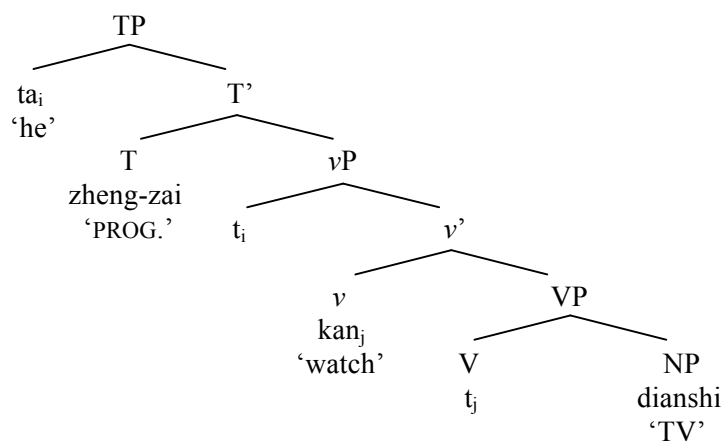
The fact that (i) Chinese sentence pairs like (107) and (108) share several properties with English sentence pairs like (85), and (ii) the short answers in (107) and (108) are like the one in (85) in that they serve as foci for the answer suggests that these two types of answers can receive a parallel analysis. Therefore, I propose that the Chinese short answers in (107) and (108), which I call *vP-fragment answers*, should be derived as follows (see also Holmberg 2003). Take (107) as an illustration.

¹⁵ The *wh*-questions mentioned here only include questions involving the *wh*-phrases *who* and *what* and excluding *how*, *why*, *when*, and *where*.

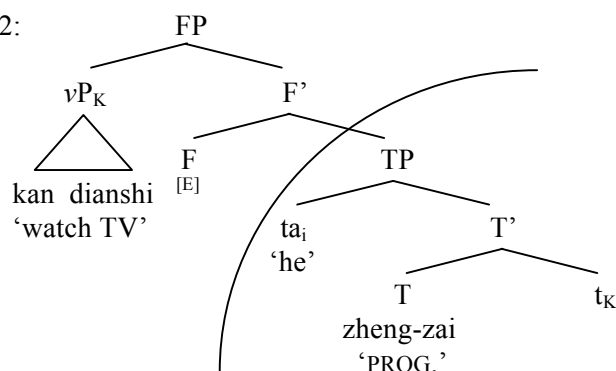
- (107) b. Ta_i *zheng-zai* *shuijiao* / *kan* *dianshi* / *shang* *wang*.
 he PROG. sleep / watch TV / use internet
 ‘He is sleeping. / He is watching TV. / He is using the Internet.’
- c. *Shuijiao.* / *Kan* *dianshi.* / *Shang* *wang.*
 sleep watch TV use internet
 ‘He is sleeping. / He is watching TV. / He is using the Internet.’

The derivation of the vP-fragment answer, *kan dianshi* ‘watch TV’, is demonstrated below:

(113) Step 1:



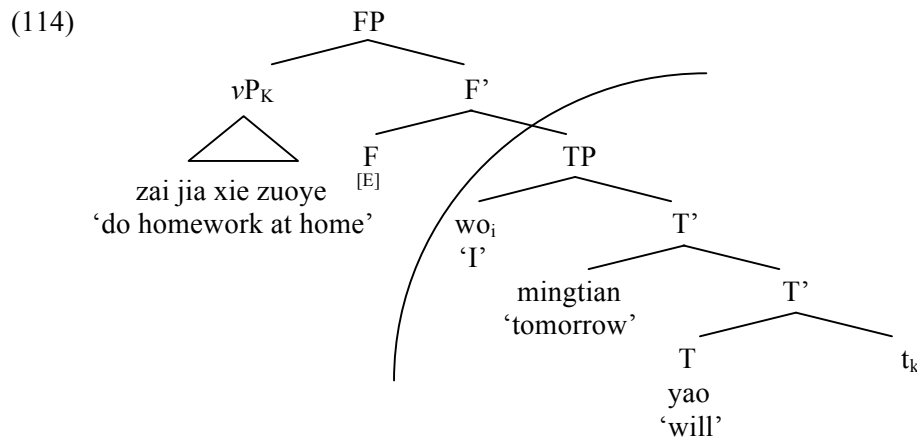
Step 2:



Step 1 derives the complete answer as it is given in (107b): the subject is base-generated in the Spec of ν P (Kratzer 1996), and then raises to the Spec of TP; as for the verb, I simply follow Huang's (1994, 1997) and Lin's (2001) analysis of V-to- ν movement in Mandarin Chinese, where the head of VP is the original position for the verb and the head of ν P is its final landing site.¹⁶

I propose that ν P movement, like nominal-fragment-answer movement, is motivated by the need to check uF^* on the E feature. More specifically, in English fragment-answer constructions, the focused nominal is responsible for checking uF^* ; in Mandarin Chinese ν P-fragment answers, it is the ν P part of the entire sentence that is focused, so it is that segment that must be fronted to check the uF^* feature of [E] on F.¹⁷ After the uninterpretable focus feature is checked, TP-ellipsis applies and deletes everything within the TP domain, including the subject; this is Step 2 shown above. This analysis, like the one proposed earlier for verbal answers, shows that the sentential subject position is filled with an overt nominal phrase throughout the derivation, suggesting that this kind of sentence cannot be considered a genuine null-subject sentence.

Along these lines, the short answer in (108c) is derived as follows.



¹⁶ Since this dissertation does not zero in on whether Mandarin Chinese has tense or not, I simply use TP for the sake of explanatory simplicity (please see Li 1985, 1990; J. Lin 2003, 2006, 2010; Sybesma 2007); likewise, since the location of aspectual markers is not the focus of this dissertation, I just insert the aspectual marker *zheng-zai* into the head of TP. For more discussion on aspectual markers in Mandarin Chinese, please refer to Liao (2004), Lin (2001), Sybesma (1997, 1999), and others.

¹⁷ Semantically, the focus head F in ν P-fragment answers can be considered a kind of exhaustive focus. Please see Kiss (1998).

Since it is usually assumed that locative phrases, like *zai jia* ‘at home’, are ν P-level adjuncts, it is not surprising to see this locative phrase pied-piped with the fronted ν P to the sentence-initial position during the derivation of the ν P-fragment answer. In (114), after ν P moves to the FP domain, TP-ellipsis takes place and deletes the overt pronoun *wo* ‘I’, the temporal adverb *mingtian* ‘tomorrow’, and the modal *yao* ‘will.’

The analysis built on ν P-preposing predicts that ν P-fragment answers cannot appear with other non- ν P-level constituents. This prediction is borne out by the unacceptability of the following sentence.

- (115) # *Mingtian zai jia xie zuoye.*
 tomorrow at home write homework
 Intended meaning: ‘I will do homework at home tomorrow.’

(115) cannot serve as an appropriate reply to the question in (108a). We can attribute the infelicity of (115) in this case to the fact that only constituents belonging to the same projection can move altogether. Since *mingtian* ‘tomorrow’ is a TP-level element, it cannot get fronted with ν P. Therefore, answers like (115) are not licit, thus offering indirect support for the analysis that I propose.

Another piece of evidence supporting this analysis can be found in the interpretation of the preposed ν P. As we saw in (107) and (108), although ν P-fragment answers contain fewer constituents than complete answers, these short answers are semantically equivalent to their complete-sentence counterparts. This fact suggests that these short answers must be derived from full-fledged sentences.

Binding Theory can provide us with several pieces of evidence in favor of the movement-plus-ellipsis analysis. Consider first Binding Principle A:

- (116) a. *Yuehan_i zuowan zai jia zuo shenme?*
 John last-night at home do what
 ‘What did John do at home last night?’

b. Ta_i zuowan zai jia kan ziji_i mai-de xiaoshuo.

he last-night at home read self buy-DE novel

‘He read a novel that he bought at home last night.’

c. Kan ziji mai-de xiaoshuo.

read self buy-DE novel

‘He read a novel that he bought at home last night.’

Ziji ‘self’ is a reflexive that requires the presence of an appropriate antecedent in the same sentence, as illustrated in (116b). Notice, however, that although the *vP*-fragment answer in (116c) does not contain an antecedent for the reflexive *ziji* ‘self’, speakers of Mandarin Chinese have no problem understanding who this reflexive refers to. We can account for the co-referentiality between the reflexive and its antecedent in terms of the mechanism proposed in this subsection:

(117) a. [_{TP} ta_i zuowan zai jia [_{vP} kan ziji_i mai-de xiaoshuo]].

he last-night at home read self buy-de novel

‘He read the novel he bought at home last night.’

b. [_{FP} [_{vP} Kan ziji_i mai-de xiaoshuo]_j F [_{TP} ~~ta_i~~ ~~zuowan~~ ~~zai~~ ~~jia~~ ~~t_j~~]]]

read self buy-DE novel he last-night at home



According to Binding Principle A, the reflexive *ziji* has to be bound by its antecedent in the same governing category. As we can see in (117a), this condition is satisfied when *vP* remains in-situ, in which case the reflexive *ziji* is bound by the matrix subject *ta* ‘he’; on the other hand, the absence of an antecedent for *ziji* in (116c) can be attributed to *vP*-preposing followed by TP-ellipsis, as shown in (117b).

Evidence from Binding Principle B also lends support to the movement-plus-ellipsis analysis.

- (118) a. Yeuhan zuowan zai jia zuo shenme?
 John last-night at home do what
 ‘What did John do at home last night?’
- b. Ta zuowan zai jia chi ta(de) mama zuo-de binggan.
 he last-night at home eat his mother make-DE cookies
 ‘He ate the cookies that his mother made at home last night.’
- c. Chi ta(de) mama zuo-de binggan.
 eat his mother make-DE cookies
 ‘He ate the cookies that his mother made at home last night.’

When preceded by the question shown in (118a), the pronoun *ta(de)* ‘his’ in both answers can only refer to the matrix subject. The interpretation of the pronoun in the short answer results from respecting Binding Principle B, since the *vP* containing this pronoun has not moved to the clause-peripheral position yet. (118c), thus, can be said to derive from (118b) via (i) movement of the *vP* part of the sentence to a higher position, and (ii) dropping of the TP.

Binding Principle C likewise provides evidence in favor of the present analysis.

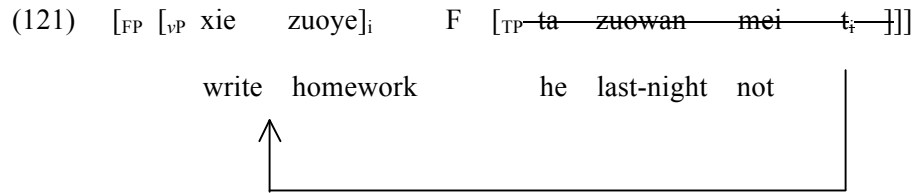
- (119) a. Ta zuowan zai jia zuo shenme?
 he last-night at home do what
 ‘What did he do at home last night?’
- b. Ta_i zuowan zai jia wan Yuehan_j jielai-de diannao.
 he last-night at home play John borrow-DE computer
 ‘He played on the computer that John borrowed at home last night.’
- c. Wan Yuehan_j jielai-de diannao.
 play John borrow-DE computer
 ‘He played on the computer that John borrowed at home last night.’

As in the complete-sentence answer (119b), the person conducting the action mentioned in the ν P-fragment answer in (119c) cannot be understood as *John*. This limitation is an effect of Binding Principle C, which applies to the pre-focus-movement and pre-TP-ellipsis sentence, thus preventing the proper name *John* from being co-indexed with the matrix subject that c-commands it.

The last piece of evidence demonstrating the semantic equivalence between the ν P-fragment answer and its non-elliptical counterpart concerns a *wh*-question containing a negative marker.

- (120) a. Yuehan zuowan mei zuo shenme shi ?
 John last-night not do what thing
 ‘What did John not do last night?’
- b. Ta mei xie zuoye.
 he not write homework
 ‘He did not do homework.’
- c. Xie zuoye.
 write homework
 Intended meaning: ‘He did not do homework.’

The *wh*-question in this example contains a negative marker, *mei* ‘not.’ As with other similar *wh*-questions, speakers of Mandarin Chinese can respond to this question by simply repeating the ν P part of the question. A point worth mentioning in this case is that, although this short ν P-fragment does not appear with a negative marker, the meaning of this sentence is the same as that of its complete counterpart, (120b), in which *mei* ‘not’ is overtly present. This fact suggests that the ν P-fragment answer is derived from focus movement followed by TP-ellipsis.



The example in (120c) also shows that there is no *pro* preceding the vP, *xie zuoye* ‘do homework’; if there were, its meaning would be the one shown below.

- (122) Ta xie zuoye.
 he write homework
 ‘He did his homework.’

Inserting the overt pronoun *ta* ‘he’ in front of the vP-fragment answer makes the negative reading unavailable; (122) can only mean *He did his homework*, and thus cannot serve as an answer to the question in (120a).

To summarize, the analysis that I propose to deal with vP-fragment answers in Mandarin Chinese has the following merits: (i) it accounts for the absence of an overt subject in vP-fragment answers more accurately than previous analyses, and (ii) it captures the interpretation of vP-fragment answers more precisely.

2.4.3 Further discussion

The discussion in the previous two subsections demonstrates that it is possible, and even desirable, to analyze the same sequence of words in multiple different ways in different environments. The following pair of examples illustrates this fact.

(123) Yes-no question

a. Yuehan shuijiao-le ma?

John sleep-ASP Q

‘Has John fallen asleep?’

b. Shuijiao-le.

sleep-ASP

‘Yes, he has fallen asleep.’

(124) *Wh*-question

a. Yuehan zai jia zuo shenme?

John at home do what

‘What is John doing at home?’

b. Shuijiao.

sleep

‘He is sleeping.’

Setting aside the question of the verb’s aspect or tense property, the answers to the yes-no question (123a) and the *wh*-question (124a) consist of the same intransitive verb, *shuijiao* ‘sleep.’¹⁸ As I have argued extensively, these two short answers cannot be considered to contain subject *pro* or topic-bound variables. Instead, they should be taken to involve the following two mechanisms:

(125) a. Derivation of (123b): Verb movement + TP-ellipsis

[_{CP} shuijiao_i-le C [_{TP} ~~John_j~~ [_{E'} ~~t_i~~] [_{VP} ~~t_j~~ [_{v'} ~~t_i~~] [_{VP} [_{v'} ~~t_i~~]]]]]

¹⁸ Strictly speaking, *shuijiao* is not a pure intransitive verb, since it consists of the verb *shui* ‘sleep’ and the nominal *jiao*, which also means *sleep*. Given the fact that the meaning of this Chinese compound verb corresponds to that of *sleep* in English, I simply call *shuijiao* an intransitive verb for convenience.

- b. Derivation of (124b): ν P movement + TP-ellipsis

[_{FP} [_{ν P} shuijiao]_i F [_{TP} ~~John~~ t_i]]

Assuming that Holmberg's (2001) Σ corresponds to the head of FP, the bare verbal answer to a yes-no question like the one in (123b) is understood to involve successive cyclical verb movement followed by TP-ellipsis, while the answer to a *wh*-question, such as (124b), is derived via ν P movement plus TP-ellipsis. Thus, the similarity between the surface structures of (123b) and (124b) is only apparent; their derivations are not the same.

The discussion in the previous two subsections also demonstrates an important point that I have emphasized throughout this chapter: we cannot analyze sentences that do not contain overt subjects accurately without access to sufficient information about the discourse context. To put it differently, although I acknowledge that discourse plays an important role in helping us understand the meaning of 'subjectless' sentences in Mandarin Chinese, I propose that we also need a more fine-grained analysis of discourse, so that we can determine what sorts of sentences can or cannot legitimately precede 'subjectless' sentences.

I also show that there are at least two types of 'subjectless' sentences in Mandarin Chinese that should not be treated as containing null subjects: answers to yes-no questions and answers to *wh*-questions, whose apparent empty pre-verbal subject positions are derived via movement and TP-ellipsis.

2.5 Conclusion

In this chapter, I have shown that TP-ellipsis plays an important role in the construction of Mandarin Chinese. Huang (1984, 1989) proposes that null objects in Mandarin Chinese are variables bound by discourse topics. While I agree with Huang (1984, 1989) that discourse context is a crucial factor in determining when a sentence can contain an empty argument position, I propose that discourse is not

always ‘omnipotent’ in licensing the use of sentences lacking overt arguments. Instead, I attribute the formation of sentences that contain ‘missing’ subjects to the joined effect of movement and TP-ellipsis.

More specifically, I have argued that the apparent vacancy of a subject position in (in)transitive sentences that serve as answers to yes-no questions is in fact the result of movement of the verb into CP, followed by clausal ellipsis. Therefore, we should describe the presence of an empty subject position in (in)transitive sentences as a side effect of the deletion of TP, rather than a deletion of the subject itself. This analysis gains support from the fact that (i) the bare verbal replies can express a greater richness of meaning than what is manifested in the surface structure, and (ii) such answers are compatible with high (CP) adverbs but not with lower (TP, *v*P, or VP) adverbs.

Another construction that seems to readily host empty subject positions is that of responses to *wh*-questions. I propose that such constructions should be analyzed on a par with English nominal fragment answers, which are derived by focus movement that attracts the *v*P-part of the sentence to CP, followed by TP-ellipsis. In other words, this analysis considers *wh*-question responses to derive from full-fledged sentences, since their semantic and syntactic properties pattern alike. Thus, as with *yes/no* responses, I argue that the answers to Mandarin *wh*-questions cannot be treated as genuine null-subject sentences, since the subject position remains filled with a nominal phrase throughout the derivation; instead, I attribute the apparent empty subject position in these sentences to the deletion of TP, which elides the subject.

In the next chapter, I will turn my attention to the phenomenon of missing objects, and compare two possible analyses: argument ellipsis and VP ellipsis.

CHAPTER 3

‘OBJECTLESS’ SENTENCES AND V-STRANDING VP-ELLIPSIS

3.1 Introduction

In Chapter 2, I demonstrated the importance of discourse in regulating the use of ‘subjectless’ sentences in Mandarin Chinese. I argued that the subject position cannot generally be left empty in Mandarin sentences, and propose that the apparent vacancy of subject positions in some sentences (in particular, those serving as answers to yes-no and *wh*-questions) is in fact derived by a combination of verb/*v*P movement and TP-ellipsis. Under the analysis that I propose, these sentences cannot be taken to contain an empty category in the canonical subject position, the Spec of TP, since this position remains filled with a nominal phrase throughout the derivation.

The present chapter turns from subjects to an analysis of Mandarin ‘objectless’ sentences. As I mentioned in the previous chapter, dropping objects is not as straightforward as dropping subjects in Mandarin Chinese, even when the discourse context provides a salient topic. In this chapter, I zero in on when speakers of Mandarin Chinese can use sentences that do not contain overt objects, and discuss how such sentences are derived. Based on the analysis laid out in Chapter 2, there are two possible ways to analyze ‘objectless’ sentences: (i) to treat the object position in these sentence as null, which amounts to saying that these object positions are empty or are occupied by empty categories, or (ii) to propose that the formation of such sentences involves an ellipsis mechanism that deletes a constituent larger than NP/DP, in which case it would follow that the object position itself is not empty at all. This chapter is not dedicated to exhaustively discussing all ‘objectless’ sentences in Mandarin Chinese; my aim is mainly to show that the influence exerted by the second analysis mentioned above is greater than what is typically

perceived. This, in turn, suggests that the object positions in some ‘objectless’ sentences are never left empty, and the absence of an object in these sentences should be attributed to the elision of a larger constituent. This conclusion will lead me to consider whether these ‘objectless’ sentences are VP-ellipsis constructions or not.

Since Huang (1991), the VP-ellipsis analysis has been used to account for the formation of null object constructions cross-linguistically (see Otani and Whitman 1991, for example). However, during the past twenty years, more and more scholars have questioned the legitimacy of applying the VP-ellipsis analysis to null object constructions in Japanese and Korean (Hoji 1998, Kim 1999, and Oku 1998, among others). This trend is carried over into Mandarin Chinese by Cheng (2013 and earlier work), who argues against VP-ellipsis as the origin of the null object construction, and accounts for such constructions in terms of argument ellipsis.

This chapter is organized as follows. I begin by picking up the thread of my argument from Chapter 2 that the richness of a discourse context is not the crucial factor determining the use of null argument sentences in Mandarin Chinese. At the beginning of Section 3.2, I provide a number of examples illustrating the contexts in which speakers of Mandarin Chinese can use ‘objectless’ sentences, and draw the generalization that objects can only disappear from sentences that bear a certain degree of structural similarity to the sentence preceding them. Since a similar observation has been made for VP-ellipsis (henceforth, *VPE*) constructions in English, I set the stage with a discussion of previous work on VPE. I draw particular attention to Merchant’s (2001) analysis, in which he accounts for English VPE constructions in terms of a concept called *e-GIVENNESS*. In Section 3.3, I briefly discuss ways in which the VPE-analysis has been used to account for null object sentences in East Asian languages, such as Mandarin Chinese and Japanese. I first review Huang (1991), and then discuss Otani and Whitman’s (1991) application of Huang’s idea to Japanese. In Section 3.4, I turn to the anti-VPE camp, which includes Oku (1998) and Kim (1999), and illustrate their view that Japanese and Korean null object positions should be considered empty positions rather than a result of VPE. I then discuss Cheng (2013) in detail, showing how he was influenced by Oku and Kim’s work, and reveal the assumptions he

capitalizes on in building his analysis of null object constructions in Mandarin Chinese. In Section 3.5, I argue that Cheng's (2013) analysis is not tenable, since it fails to accurately characterize the use of 'objectless' sentences in Mandarin Chinese, and turn to a defense of the V-stranding VPE analysis developed in G. Li (2002), in which the author proposes that Chinese null object sentences are derived by V-to-*v* movement followed by VP-ellipsis. I demonstrate that the V-stranding VPE-analysis is superior to Cheng's argument-ellipsis analysis on both syntactic and semantic grounds. Given (i) that some 'objectless' sentences in Mandarin Chinese are derived by V-stranding VPE, and (ii) that it is nevertheless necessary to take into account the context in which 'objectless' sentences are used, in this section I also give a couple of examples to show that the same sequence of lexical items can be analyzed differently, depending on what precedes them. Section 3.6 concludes.

3.2 Structural Parallelism

3.2.1 Dropping objects in Mandarin Chinese

The ungrammatical null-argument sentences discussed in the previous chapter seemed to suggest that the appearance of null arguments is not directly tied to discourse: there exist many examples of rich discourse contexts in which the subject and object positions of Mandarin sentences still cannot be left empty. Nevertheless, it is undeniable that arguments can indeed disappear in Chinese sentences. In order to extract ourselves from this dilemma, in Chapter 2, I suggested that we pay attention to the specific environments that surround sentences containing missing arguments. I demonstrated that sentences serving as answers to yes-no questions and *wh*-questions undergo verb movement or *v*P movement followed by TP-ellipsis, which consequently creates an illusion that the subject position is left empty. Given this discussion, it is inevitable for us to apply the same set of questions to the topic of Mandarin 'objectless' sentences. In other words, we want to know when speakers of Mandarin Chinese can use such sentences as the following one:

(1) Yuehan kanjian-le e.

John see-ASP

‘John saw [him/her].’

(1) is a transitive sentence that lacks an overt object. Uttering this sentence out of the blue would cause a lot of confusion, since no appropriate antecedent for the null object is apparent. But, even if a discourse context that gives rise to a prominent topic is provided, this sentence will not necessarily be acceptable. What, then, can count as appropriate antecedent for this sentence? To begin with, (1) is acceptable when it serves as an answer to (2):

(2) Yuehan kanjian Bier le ma?

John see Bill SFP Q

‘Did John see Bill?’

(2) is a yes-no question that seeks an answer to confirm a possible scenario (John saw Bill). If (1) is preceded by the question shown in (2), then (1) is felicitous, and is interpreted with the meaning ‘John saw Bill.’ In this example, although the object position in (1) is left empty, it is automatically understood to refer to the object *Bill* in the question-sentence. Dropping objects also occurs felicitously in embedded clauses.

(3) Mali shuo Yuehan kanjian-le e.

Mary say John see-ASP

‘Mary said that John saw [him].’

(3) is slightly more complex than (1) in that it embeds one more clause, but (3) shares with (1) the property that the empty object position can only refer to *Bill* when it is used to answer the antecedent yes-no question in (2).

These facts indicate that discourse does play a role in licensing empty categories, and thus support Huang's (1984, 1989) proposal that the use of empty categories requires cooperation with the preceding discourse. Taking (1)~(3) and the unacceptable cases from Chapter 2 into consideration, it seems reasonable to say that only certain types of sentences can constitute legitimate licensors for null objects. Based on the information we currently have at our disposal, there are a number of possible ways to account for the discrepancy in the use of null objects in Mandarin Chinese: through a syntactic, semantic, or even pragmatic explanation. In order to draw a generalization about the use of null objects in Mandarin sentences, we need to look at more examples.

- (4) a. Yuehan zuotian kan-dao Ma Yo-Yo le.
 John yesterday see-arrive Yo-Yo Ma SFP
 'John saw Yo-Yo Ma yesterday.'
- b. Ni kan-dao e le ma?
 you see-arrive SFP Q
 'Did you see [Yo-Yo Ma]?'

- (5) a. Yuehan xihuan Meryl Streep.
 John like
 'John likes Meryl Streep.'
- b. Mali ye xihuan e ma?
 Mary also like Q
 'Does Mary also like [Meryl Streep]?'

The distribution of null objects in Mandarin Chinese is not merely restricted to declarative sentences, as in (1) and (3). In (4) and (5), by contrast, it is the yes-no questions themselves that contain null objects, while the preceding sentences are declarative. Thus, we can conclude that the force of a sentence is not the relevant factor determining the distribution of empty objects.

Although the sentence types in (1,3) and (4,5) are different, these pairs of sentences share a common property: each null object sentence is preceded by a structurally similar sentence, and the null object in the second sentence can only refer to the overt object in the same position of the preceding sentence. In other words, the null object in (4b) can only mean *Yo-Yo Ma*, and the null object in (5b) can only stand for *Meryl Streep*. The tentative assumption that syntactic resemblance between sentences is implicated in the licensing of null objects gains further support from the following examples.

Yes-no questions are not the only constructions that produce pairs of sentences containing null objects. *Wh*-questions can do so as well:

- (6) a. Shei kanjian Bier le?
 who see Bill SFP
 ‘Who saw Bill?’
 b. Yuehan kanjian e le.
 John saw SFP
 ‘John saw [Bill].’

- (7) a. Shei xihuan Yuehan?
 who like John
 ‘Who likes John?’
 b. Mali xihuan e.
 Mary like
 ‘Mary likes [John].’

As with responses to yes-no questions, speakers of Mandarin Chinese can choose to leave the object position empty in sentences uttered in response to a *wh*-question. In (6) and (7), the null objects can only be understood as *Bill* and *John*, respectively.

An empty object position can also appear in a *wh*-question itself, if an appropriate context is provided.

- (8) a. Yuehan zuotian qu yiyuan tanwang nainai le.
 John yesterday go-to hospital visit Grandmother SFP
 ‘John went to the hospital to visit Grandmother yesterday.’

- b. Ni shenme shihou qu tanwang e?
 you when time go-to visit
 ‘When will you go to visit [Grandmother]?’

- (9) a. Mali xiwang neng zai shu-dian yu-dao Yuehan.
 Mary hope can at book-store run-arrive John
 ‘Mary hopes that she can run into John in the book store.’

- b. Ni xiang zai nali yu-dao e?
 you want in where run-arrive
 ‘Where do you want to run into [John]?’

The declarative sentence in (8a) describes a particular event that John has experienced: the event of going to the hospital to visit his grandmother. Although the sentence in (8b) is a *wh*-question, it is like those shown above in that it can also contain an empty object position whose reference corresponds to the object of the immediately preceding sentence. Again, the null object in (9b) can only refer to the overt object appearing in (9a). In other words, we can claim that although the object positions in (8b) and (9b) are vacant, their interpretations are restricted to the corresponding object positions in the preceding

declarative sentences: the null object in (8b) can only mean *Grandmother*, and the one in (9b) can only signify *John*.

All of the examples discussed so far consist of a pair of sentences, one declarative and one interrogative, though their ordering is subject to change. In fact, empty object positions can also be observed in contexts in which one declarative sentence is preceded by another:

(10) a. Yuehan xihuan Adele.
John like Adele
'John likes Adele.'

b. Mali ye xihuan e.
Mary also like
'Mary also likes [Adele].'

(11) a. Yeuhan jian-guo zhe-ge ren.
John see-ASP this-CL person
'John used to see this person.'

b. Mali ye jian-guo e.
Mary also see-ASP
'Mary also used to see [this person].'

(10) and (11) each contain a pair of declarative sentences; the second sentence in each pair contains a null object whose reference is tied to the overt object in the first sentence. In other words, the object in (10b) can only refer to *Adele*, and the one in (11b) *this person*.

We can summarize what we have discussed above as follows:

(12)	Type of preceding sentence	Type of following sentence with null object
a.	Yes-no question	Declarative sentence
b.	Declarative sentence	Yes-no question
c.	<i>Wh</i> -question	Declarative sentence
d.	Declarative sentence	<i>Wh</i> -question
e.	Declarative sentence	Declarative sentence

The fact that null objects can appear in a wide variety of sentence-type pairs gives the impression that Mandarin Chinese allows objects to drop relatively freely. However, the question remains: why can object drop take place in the examples shown here, but not in those illustrated in Chapter 2? If we put all of the acceptable examples under scrutiny, we find that object drop is constrained by one condition: the dropped object must appear in a sentence that bears a structural resemblance to the preceding sentence; that is to say, only a sentence that is structurally parallel to an immediate prior sentence can contain an empty object position. This pattern for licensing a null object is schematized as in (13):

- (13) a. Subject₁ verb object
 b. Subject₂ verb ~~object~~

This structural-resemblance prerequisite for empty object positions seems tied to verbal identity: as long as the verbs in the preceding and following sentences are identical, the object in the second sentence is allowed to be elided.

Putting aside a detailed analysis of this phenomenon for the moment, I posit that a null object cannot pick up its reference directly from the discourse context, but instead must have an appropriate linguistic antecedent meeting appropriate configurational constraints. This situation is reminiscent of a proposal first articulated in Hankamer & Sag (1976) that some empty categories cannot be pragmatically controlled, but must be linguistically controlled.

Hankamer & Sag (1976) draw a famous distinction between two types of anaphora: surface anaphora and deep anaphora.

(14) a. Deep Anaphora:

[Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]

Sag: I'm not sure you'll be able to do it.

Sag: #It's not clear that you'll be able to.

b. Surface Anaphora:

Hankamer: I'm going to stuff this ball through this hoop.

Sag: It's not clear that you'll be able to.

(15) a. Deep Anaphora:

[Sag produces a cleaver and prepares to hack off his left hand]

Hankamer: Don't be alarmed, ladies and gentlemen, we've rehearsed this act several times
and he never actually *does it*.

Hankamer: #Don't be alarmed, ladies and gentlemen, we've rehearsed this act several times
and he never actually *does*.

b. Surface Anaphora:

Sag: I'm going to hack my hand off.

Hankamer:he never actually does.

As we can see in these two sets of examples, deep anaphora like *do it* can be used whenever the general environment provides an easily accessible context (the element appearing in the square bracket), whereas surface anaphora, derived by VPE, can only be used in a sentence preceded by another sentence which is spoken aloud. Therefore, in (14a), Sag can use *do it* to describe what Hankamer is attempting to do, and if Sag's intended utterance has a linguistic antecedent in earlier utterances, he can omit the repetitive VP

constituent, *stuff this ball through this hoop*, as shown in (14b). (15) makes the same point: the use of deep anaphora requires pragmatic information, while surface anaphora must be fed by a linguistic antecedent. In a nutshell, Hankamer and Sag (1976) claim that deep anaphora can be pragmatically controlled, while surface anaphora like VPE must be linguistically controlled.

Since the presence of a linguistic antecedent is the prerequisite for licensing null objects in Mandarin Chinese, it seems reasonable to analyze these empty categories as surface anaphora. Under such an analysis, all the Mandarin sentences containing null objects shown above would be considered instances of VPE rather than object drop, since their appearance is contingent upon the presence of a prior linguistic antecedent. A problem arises, however: unlike their English VPE counterparts, the verb in Mandarin ‘objectless’ sentences remains overt:

- (16) a. He never actually does [_{VP} Ø].
 b. Yuehan kanjian-le [_{DP} Ø].
 John see-ASP
 ‘John saw [him].’

Given that the verb in (16b) above has clearly not been elided, it seems natural to assume that Mandarin Chinese derives null object sentences not via VPE, but via NP/DP ellipsis. This assumption, however, encounters challenges from Huang (1991), who maintains that null object constructions in Mandarin Chinese do, in fact, arise through VPE.

- (17) John kanjian-le tade mama, Mary ye kanjian-le e. (Huang 1991)
 John see-ASP his mother. Mary also see-ASP
 ‘John saw his mother, and Mary did too.’

According to Huang (1991), the null object in the second conjunct is derived by movement of the verb to a higher position, followed by VP-ellipsis. If we can apply this analysis to the sentences seen above, we will have a unified analysis for null object constructions in Mandarin Chinese.

Based on the discussion to this point, three salient facts about Mandarin Chinese ‘objectless’ sentences emerge: (i) objects in Chinese sentences cannot be randomly omitted; (ii) the role of discourse is to provide an appropriate linguistic antecedent for sentences that contain null objects: not every sentence uttered in discourse can serve as such an antecedent; (iii) acceptable null object sentences behave like surface anaphora, indicating that they might be derived via VPE. In the next section, we will shift our focus away from Mandarin Chinese, first considering relevant analyses of VPE in English, and then examining this construction in other languages.

3.2.2 VP-ellipsis in English

VP-ellipsis constructions are much discussed in the literature. Among various proposals, Merchant’s (2001) analysis has drawn considerable attention. Some VPE examples are given below.

- (18)
- a. Abby was reading the book while BEN was.
 - b. Abby ate a sandwich after BEN did.
 - c. Abby left the party because BEN did.
 - d. Abby sang her hymn louder than BEN did.
 - e. Abby called Chuck an idiot after BEN did.

The sentences in (18) all share one property: although the verb phrase only appears once (in the main clause of the sentence), its meaning is also understood to be part of the meaning of the subordinate clause.

(18b), for example, means *Abby ate a sandwich after BEN ate a sandwich*. In order to account for VP-ellipsis constructions in English, Merchant (2001) proposes the following two conditions:

(19) **e-GIVENNESS**

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting,

- (i) A entails F-clo(E), and
- (ii) E entails F-clo(A).

(20) **Focus condition on VP-ellipsis**

A VP α can be deleted only if α is e-GIVEN.

Under this analysis, (18e) means *Abby called Chuck an idiot after BEN did call Chuck an idiot*. In this case, the elided VP has as its antecedent the VP in the first clause [_{VP} call Chuck an idiot]. In order to satisfy e-GIVENNESS, the antecedent VP and the elided VP have to entail each other semantically. Since there is one open variable in the subject position of the antecedent VP, it turns into (21) after the application of \exists -type shifting.

$$(21) \quad VP_A' = \exists x.x \text{ called Chuck an idiot}$$

As for the elided VP, since it contains an F-marked trace left by the movement of the subject, it turns into (22) after that F-marked trace is replaced by an \exists -bound variable.

$$(22) \quad F\text{-clo}(VP_E) = \exists x.x \text{ called Chuck an idiot}$$

Given (21) and (22), it is obvious that VP_A' entails $F\text{-clo}(VP_E)$. The semantics of the F-clo. counterpart of VP_A is shown in (23).

$$(23) \quad F\text{-clo}(VP_A) = \exists x.x \text{ called Chuck an idiot}$$

Since the denotation of VP_E' is also ' $\exists x.x$ called Chuck an idiot', VP_E' can be taken to entail $F\text{-clo}(VP_A)$. Based on the fact that VP_A' entails $F\text{-clo}(VP_E)$ and VP_E' entails $F\text{-clo}(VP_A)$, the second VP, VP_E , is interpreted as e-GIVEN, which consequently renders it subject to deletion.¹

Merchant's analysis is largely built on the assumption that semantic isomorphism plays an important role in determining whether a particular constituent can be elided or not; if semantic isomorphism obtains, ellipsis can take place; if not, ellipsis cannot happen. Although it is controversial to say that semantic isomorphism is the only factor relevant for ellipsis (see Chung 2013, Fiengo and May 1994, Merchant 2013, Rooth 1992, Ross 1969), Merchant's analysis does capture the relationship between the elided constituent and its antecedent. In the next section, I turn to null object sentences in East Asian languages, such as Japanese, Korean, and Mandarin Chinese.

3.3 Null object sentences in East Asian languages

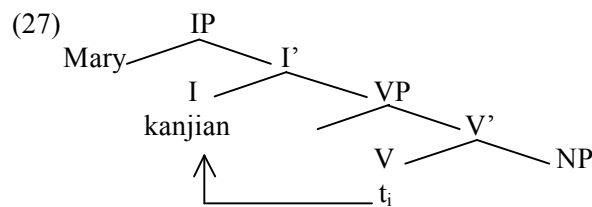
3.3.1 Mandarin Chinese: Huang (1991)

The salient property of English VPE constructions is that the verb itself (and its complement) is not overtly present in the (subordinate) sentence; instead, the element following the subject is the dummy auxiliary *do*, as shown in (18). In fact, elements other than the auxiliary *do* can also appear in English VPE constructions.

¹ Merchant's (2001) analysis of VPE to some extent is derived from Fiengo and May (1994), Rooth (1992), and Schwarzschild (1999).

‘John saw his mother, and Mary did, too’ (*lit. John saw his mother, and Mary saw, too*)

The meaning of the Chinese sentence in (26) is the same as that of its English gloss, but there is one difference between them: the missing element in the Chinese sentence is a nominal phrase, while the missing element in the English gloss is a VP. In order to account for the similarity between Mandarin Chinese and English, Huang (1991) proposes that the repeated verb in the second conjunct of the Chinese sentence in (26) has moved to INFL, which in turn L-marks the lower VP, rendering it null. In other words, the repeated verb in the Chinese sentence functions like the auxiliary *do* in English. This idea is illustrated in the following diagram:



There are two factors that motivate Huang (1991) to assimilate sentences like (26) to their English VPE counterparts. First, Chinese sentences that contain a repeated verb are semantically ambiguous in the same manner as English VPE sentences are: the interpretation of the second conjunct in (26), for example, can be *Mary also saw John's mother* or *Mary also saw Mary's mother*; the former is called the ‘strict reading’, and the latter is called the ‘sloppy reading.’

Second, it has been observed that English VPE constructions exhibit locality effects:

(28) John saw his mother, and Mary knew that Bill did, too.

(28) differs from the English VPE constructions we saw earlier in that the VPE takes place in the embedded clause. Importantly, this sentence lacks a reading in which the object in the missing VP co-

refers with the matrix subject in the same clause. That is, (28) has a strict reading in which Bill saw John's mother and a sloppy reading in which Bill saw Bill's mother, but it lacks another sloppy reading in which Bill saw Mary's mother. Huang (1991) notes that Mandarin Chinese has a similar phenomenon:

- (29) John kanjian-le tade mama, Mary zhidao Bill ye kanjian-le e.
 John see-PERF his mother, Mary know Bill also see-PERF
 'John saw his mother, and Mary knew that Bill did too.'

According to Huang (1991), (29) lacks a reading in which Bill saw Mary's mother. Given the fact that Mandarin Chinese and English both display such locality effects, Huang (1991) analyzes Chinese sentences containing a second-conjunct repeated verb on a par with English VPE constructions; that is, what is missing in (29) on Huang's account is a VP rather than an NP.

Huang's (1991) analysis is appealing in its ability to account for the semantic properties of the Mandarin 'objectless' sentences. Based on Sag (1976), Huang (1991) derives the strict and sloppy readings of sentences like (26) by assuming that the empty VP in the second conjunct has to be interpreted in the same way as its antecedent VP. That is, if the antecedent VP is interpreted as $\lambda x (x \text{ saw } his \text{ mother})$, the empty VP has to have the same denotation, giving rise to the strict reading; on the other hand, if the antecedent VP is interpreted as $\lambda x (x \text{ saw } x's \text{ mother})$, then the sloppy reading will be generated.

3.3.2 Japanese: Otani and Whitman (1991)

Huang's verb-movement analysis of null object sentences in Mandarin Chinese, originally presented in Huang (1987b, c), prompted Otani and Whitman (1991) to apply the same method to equivalent sentences

in Japanese, which exhibit similar semantic properties. Let us look at a representative English sentence first:

- (30) John threw out his letters, and Mary did $[[e]_V [e]_{NP}]_{VP}$ too. (Otani and Whitman 1991)

The second conjunct of (30) is a VPE construction containing an empty VP, and it has both a strict and a sloppy reading. The Japanese counterpart of (30), shown in (31), also has two interpretations, according to Otani and Whitman (1991). They derive the sloppy reading of (31) by the interpretive rules proposed in Williams (1977):

- (31) John-wa zibun-no tegami-o sute-ta. Mary-mo sute-ta.
 John-TOP self-of letter-ACC discard-PAST. Mary-also discard-PAST
 ‘John_i threw out self_i’s letter, and Mary_j also threw out John’s letter/self_j’s letter.’

(32) The derivation of the sloppy reading of (31):

- a. John wa $[[zibun-no\ tegami-o]_{NP} [sute-]_V]_{VP-ta}$. Mary mo $[[e]_{NP} [sute-]_V]_{VP-ta}$.
 \downarrow V-Raising (S-Structure)
 b. John wa $[[zibun-no\ tegami-o]_{NP} t_V]_{VP} [sute]_V-ta$. Mary mo $[[e]_{NP} t_V]_{VP} [sute]_V-ta$.
 \downarrow Derived VP Rule (LF)
 c. John wa $[\lambda x [x [zibun-no\ tegami-o]_{NP} t_V]]_{VP} [sute]_V-ta$. Mary mo $[[e]_{NP} t_V]_{VP} [sute]_V-ta$.
 \downarrow Reflexive Rule (LF)
 d. John wa $[\lambda x [x [x-no\ tegami-o]_{NP} t_V]]_{VP} [sute]_V-ta$. Mary mo $[[e]_{NP} t_V]_{VP} [sute]_V-ta$.
 \downarrow VP Rule (LF)
 e. John wa $[\lambda x [x [x-no\ tegami-o]_{NP} t_V]]_{VP} sute-ta$. Mary mo $[\lambda x [x [x-no\ tegami-o]_{NP} t_V]]_{VP} sute_V-ta$.

In Step 1 of (32), the verbs in the antecedent and target clauses move out of the VP to a higher position, and leave a trace, shown in (32b); in Step 2, the Derived VP Rule converts the VP containing the trace of the moved verb from the antecedent clause into a lambda predicate; in Step 3, the Reflexive Rule turns *zibun* ‘self’ in the antecedent clause into a variable *x*; in Step 4, the most important part of the derivation, the entire lambda predicate in the antecedent clause is copied into the empty VP in the target clause that contains the raised verb *sute-* ‘discard’. This process yields a configuration in which the two variable *x*s are bound by *John* and *Mary*, respectively, resulting in a sloppy reading. These steps cannot be accomplished without a vacant VP.

In addition, Otani and Whitman (1991) note that null object sentences in Japanese also display locality effects:

(33) a. *John_i-wa* [[*NY Times-ga* *zibun_i-no* *kizi-o* *inyoosi-te* *i-ru* *to*]_{CP} *kik-*]_{VP-ta}.

John-TOP *NY Times-NOM* *self-GEN* *article-ACC* *quote-ing* *be-IMP* *C* *hear-PERF*

‘*John_i* heard that the *NY Times* is quoting *self_i*’s article.’

b. *Bill-mo* [[*NY Times-ga* [*e*] *inyoosi-te* *i-ru* *to*]_{CP} *kik-*]_{VP-ta}.

Bill-also *NY Times-NOM* *quote-ing* *be-IMP* *C* *hear-PERT*

= ‘*Bill* also heard that the *NY Times* is quoting [*e*] = *John*’s article.’

≠ ‘*Bill_j* also heard that the *NY Times* is quoting [*e*] = *self_j*’s article.’

The interpretation of the second sentence in (33b) shows that the missing object cannot refer to the matrix subject in the same sentence across the embedded subject. This restriction on co-referentiality strengthens Otani and Whitman’s proposal that null object constructions in Japanese should be analyzed on a par with English VPE constructions. Otani and Whitman (1991) account for the locality effect in (33b) in terms of the following mechanisms:

(34) a. John-wa[[[*NYT*-ga[[zibun-no kizi-o] [inyoosi-te i-]_V]_{VP1}-ru]_{IP} to]_{CP} [kik-]_V]_{VP2}-ta.

Bill-mo [[[[*NYT*-ga [[e] [inyoosi-te i-]_V]_{VP1}-ru]_{IP} to]_{CP} [kik-]_V]_{VP2}-ta.

↓ V-Raising

b. John-wa[[[*NYT*-ga [[zibun-no kizi-o]_{t_V}] [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]_{VP2}[kik-]_V-ta.

Bill-mo[[[*NYT*-ga [[e]_{t_V}] [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]_{VP2} [kik-]_V-ta.

↓ Derived VP Rule

c. John-wa[λx[x [[*NYT*-ga [[zibun-no kizi-o] t_V]_{VP1} [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

Bill-mo [λy[y [[*NYT*-ga [[e] t_V]_{VP} [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

↓ Reflexive Rule

d. John-wa[λx[x [[*NYT*-ga[[x-no kizi-o]_{t_V}] [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

Bill-mo [λy[y [[*NYT*-ga [[e] t_V]_{VP} [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

↓ VP Rule

e. John-wa[λx[x [[*NYT*-ga[[x-no kizi-o] t_V]_{VP1} [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

Bill-mo [λy [y [[*NYT*-ga[[x-no kizi-o] t_V]_{VP1} [inyoosi-te i-]_V-ru]_{IP} to]_{CP} t_V]]_{VP2} [kik-]_V-ta.

The first three steps do not yield any abnormality: the verb moves out of the VP, the VP in the antecedent clause is converted into a lambda predicate, and a subsequent transformation converts *zibun* ‘self’ into a variable *x*. However, an unwelcome result is generated in the last step: copying the lambda predicate in the antecedent into the empty VP in the target clause causes a free unbound variable *x* to appear, which is not allowed. As a result, the sloppy reading *Bill_j also heard that the NY Times is quoting Bill’s article* is not available.

In a nutshell, the fact that null object constructions in Japanese and their Chinese counterparts pattern alike with respect to interpretive possibilities leads Otani and Whitman (1991) to propose that these Japanese sentences are instances of VPE.

3.4 Argument ellipsis

In the previous section, we saw how earlier work uses VPE to deal with null object sentences in Mandarin Chinese and Japanese. However, during the past fifteen years, a number of linguists have begun to question the appropriateness of applying such mechanism to East Asian languages such as Japanese, Korean, and Mandarin Chinese. Two facts in particular are used to call this analysis into question: first, compared to English, these languages permit more flexibility in the omission of sentential arguments; second, null object sentences in these languages display distinct syntactic and semantic properties that VPE constructions in English do not possess. I begin my discussion of these issues with Hoji (1998), Kim (1999), and Oku (1998), and then turn to see how Cheng (2013) argues against the application of VPE to Mandarin Chinese.

3.4.1 Japanese and Korean: Hoji (1998), Kim (1999), and Oku (1998)

Hoji (1998), Kim (1999), and Oku (1998) point out that null object constructions in Japanese and Korean exhibit a number of properties that their English counterparts lack. As a result, they argue that these constructions cannot be analyzed as instances of VPE.²

First, Oku (1998) notes that if the target clause in a relevant pair of sentences is analyzed in terms of VPE, we should be able to detect the ‘trace’ of a deleted adverb.

(35) Oku (1998)

Bill-wa kuruma-o teineini arat-ta. John-wa arawa-nakat-ta.

Bill-TOP car-ACC carefully wash-PAST John-TOP wash-not-PAST

‘Bill washed the car carefully. John didn’t wash (the car).’

² Since detailed discussions of these papers would consume too much space, I limit myself to a few key pieces of evidence from each paper. For more information and argumentation, please refer to each of the papers mentioned in this section.

*‘Bill washed the car carefully. John didn’t wash ~~(the car carefully)~~.’

Since the interpretation of the target clause in (35) does not include the adverbial meaning *carefully*, Oku (1998) argues that VPE does not take place in this case; otherwise, the adverbial reading should be available in the second sentence, since the adverb is part of the elided VP.

Recall that Huang (1991) and Otani & Whitman (1991) attribute the availability of a sloppy reading of null object constructions in Mandarin Chinese and Japanese to VPE, which requires the VP projection to be empty. A natural extension of this argument is that, as long as a sentence is a VPE construction, it should always have a sloppy reading, and vice versa. Hoji (1998) points out that some null object sentences in Japanese lack the sloppy readings that are available to their English counterparts.

(36) a: John_i-wa zibun(zisin)_i-o nagusameta.

John-TOP self-ACC consoled

‘John consoled himself.’

b: Bill-mo *ec* nagusameta.

Bill-also consoled

‘Bill consoled *ec* too.’

b’: Bill_i-mo zibun(zisin)_i-o nagusameta.

Bill-also self-ACC consoled

‘Bill_i consoled himself_i too.’

(37) a: John consoled himself.

b: Bill did too.

The English VPE sentence in (37b) has a sloppy reading, which means *Bill also consoled himself*. According to the VPE analysis proposed for null object constructions, the Japanese counterpart of (37b),

(36b), should also have a sloppy reading available, (36b’). However, Hoji (1998) claims that this reading does not exist. The absence of this reading casts doubt on the analysis of Japanese null object sentences as VPE constructions.

Hoji notices an additional context in which Japanese does not pattern with English.

- (38) a. John_i-wa zibun_i-no gakusai-o suisensita.
 John-TOP self-GEN student-ACC recommended
 ‘John_i recommended self_i’s student.’
 b. Mary-wa [_{CP} Bill-ga *ec* suisensita to] onotteita.
 Mary-TOP Bill-NOM recommended that thought
 ‘Mary_i thought that Bill recommended *ec* (= her_i student).’

As I have mentioned earlier, when VPE takes place in an embedded clause, the resulting reading has to obey a locality condition, which means that the matrix subject cannot be connected to the pronominal constituent located within the missing part of the clause. However, the fact that the second sentence in (38) has a nonlocal reading in which the pronominal is co-indexed with the matrix subject across the embedded subject seems to suggest that the null object sentence (38b) is not an instance of VPE.

For Korean, Kim (1999) observes that sentences in which the object position is left empty have more interpretive possibilities than their counterparts in English.

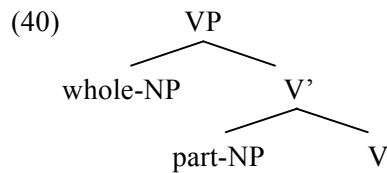
- (39) a. Mike-ka [caki-uy ai]-lul ttayli-ess-ta.
 Mike-NOM self-GEN child-ACC hit-PAST-Ind
 ‘Mike hit his/her child.’
 b. Kuleca Jeanne-to ttohan [_{NP} e] ttayli-ess-ta.
 then Jeanne-also too hit-PAST-Ind
 i) And then, Jeanne also hit her (=Jeanne’s) child too.

ii) And then, Jeanne also hit his (Mike's) child too.

iii) And then, Jeanne hit Mike too.

Kim claims that the null object sentence in (39b) not only has strict and sloppy readings, but also possesses a pragmatic reading in which the null object refers to the matrix subject in the preceding sentence, (39a). Since VPE constructions in English do not permit such a reading, Kim (1999) argues that the null object sentence in (39b) should be dealt with in a different way.

Another piece of evidence that Kim (1999) relies on is the part-whole construction. According to Yoon (1989), part-whole constructions in Korean have the following structure:



Yoon (1989) proposes that the part-NP is the complement of V and locates the whole-NP in the specifier position of VP, which is tantamount to saying that the whole-NP and the part-NP do not form a constituent. In this context, consider the following part-whole construction, which contains an empty category:

(41) a. Jerry-nun [caki-uy ai]-lul phal-ul ttayli-ess-ta.

Jerry-TOP self-Gen child-Acc arm-Acc hit-Past-Ind

‘Jerry hit his child on the arm.’

b. Kulena Sally-nun [_{NP} e] tali-lul ttayli-ess-ta.

but Sally-Top leg-Acc hit-Past-Ind

i) But Sally hit her (= Sally's) child on the leg.

ii) But Sally hit his (= Jerry's) child on the leg.

The empty position in (41b) corresponds to the whole-NP in (41a). If we adopt the mechanism that Otani and Whitman (1991) use to account for null object constructions in Japanese, we have to postulate that VP-reconstruction, which employs a λ -abstracted trace of the subject and the whole-NP, has to apply to the VP of the second conjunct. Since the part-NP remains overt in the sentence, the reconstructed VP can only consist of the verb itself and the whole-NP. However, such a reconstruction is impossible: the verb and the whole-NP are not a single constituent. This fact, in conjunction with the interpretive possibilities of (41b), constitutes further evidence that null object constructions in Korean cannot be viewed as VPE constructions.

After examining arguments against the VPE analysis for Korean and Japanese, I now return to Mandarin Chinese to see if there is any contrast between null object sentences and English VPE constructions.

3.4.2 Mandarin Chinese: Cheng (2011, 2013)

The arguments that we saw in the previous subsection are based on an important assumption: if a null object sentence is an instance of VPE, then it must have every property that a VPE construction has; if not, it should exhibit some properties that are absent in corresponding VPE sentences.

In Cheng (2013) and earlier papers, the author uses this line of reasoning to argue that null object sentences in Mandarin Chinese, like their counterparts in Japanese and Korean, should not be treated as instances of VPE, since they do not behave like English VPE constructions in semantic interpretation.

Recall that Huang (1991) proposes that VP-ellipsis is the source of the sloppy reading available to null object constructions in Mandarin Chinese. If the construction under discussion is generated via VPE, we should not be able to get any interpretation other than the strict and the sloppy readings.

- (42) a. Zhangsan da-le [_{NP} san-ge xuesheng] zhihou.....
 Zhangsan hit-ASP three-CL student after
 ‘After Zhangsan hit three students.....’
- b. Lisi haishi bu-gan da [_{NP} e].
 Lisi still not-dare hit
 ‘Lisi still does not dare to hit (the students that Zhangsan hit).’ (strict reading)
 ‘Lisi still does not dare to hit (other 3 students).’ (sloppy reading)
 ‘Lisi still does not dare to hit Zhangsan.’ (third reading)

Cheng (2013) claims that, in addition to the strict and sloppy reading, (42b) has a pragmatic reading, in which the null object refers to *Zhangsan*. This reading is available under the following scenario: “Zhangsan has always been really mean to his students and Lisi really hates that. Lisi wanted to hit Zhangsan to show his anger. The more he saw how mean Zhangsan is to his students, the more he wanted to hit Zhangsan. However, he does not dare to do that because Zhangsan is big and strong (Cheng 2013:130).” Given that VPE is unlikely to give rise to the third reading, Cheng (2013) proposes that (42b) should not be analyzed as a VPE construction.

Cheng also uses evidence from the part-whole construction to argue against a VPE analysis of the Mandarin null object construction:

- (43) a. Zhangsan ba [san-ke juzi] bo-le [shang-cheng-de pi].
 Zhangsan BA three-CL orange peel-ASP upper-rim-gen skin
 ‘Zhangsan peeled the skin of the upper rim of three oranges.’
- b. Lisi zeshi [e] bo-le [xia-cheng-de pi].
 Lisi whereas peel-ASP lower-rim-GEN skin
 ‘lit. whereas Lisi peeled the skin of the lower rim.’ (√quantificational reading)

Following Kuo (2009), Cheng assumes that in the so-called *ba*-construction in (43a), the whole-NP *san-ke juzi* ‘three oranges’ raises to a position preceding the main verb. Since VP-ellipsis requires an empty VP, the verb and its internal arguments must move to a higher position in order to derive the sloppy reading shown in (44a).

- (44) a. Lisi zeshi bo₁-le [xia-cheng-de pi]₂ [VP t_i [NP e] t₂].
 Lisi whereas peel-ASP lower-rim-gen skin
 b. *Lisi (zeshi) bo-le [xia-cheng-de pi] [san-ke juzi].
 Lisi whereas peel-ASP lower-rim-gen skin three-CL orange
 ‘*lit.* whereas Lisi peeled the lower rim of the skin (of three oranges).’

However, as shown in (44b), moving the part-phrase in front of the whole-phrase in a complete sentence is prohibited. Therefore, Cheng suggests that the sloppy reading of (43b) cannot be derived by VPE.

In addition, Cheng notes that the second sentence in the following pair is not interpreted as containing the adverbial reading:

- (45) a. Zhangsan henkuaide du-wan-le san-ben shu.
 Zhangsan quickly read-finish-ASP three-CL book
 ‘Zhangsan finished reading three books quickly.’
 b. Lisi ye du-wan-le [NP e].
 Lisi also read-finish-ASP
 ‘*lit.* Lisi also finished [e] = three books.’
 ≠ ‘Lisi also finished three books quickly.’

That the meaning of the manner adverb *henquaide* ‘quickly’ is not contained in the interpretation of (45b) leads Cheng to suspect that VPE is not applied to (45b); otherwise, this sentence should pattern with its English counterpart *Lisi did, too* in containing the meaning of the adverb.

Given these facts, Cheng (2013) proposes that null object sentences in Mandarin Chinese should be analyzed in terms of argument ellipsis (AE) rather than VPE.

AE differs from VPE in that it involves only deletion of a nominal phrase, whereas VPE involves deletion of both the verb and its internal argument(s). Cheng (2013) provides a series of examples to demonstrate that an AE analysis of Mandarin null object sentences is preferable to the VPE analysis.

The first piece of evidence showing the contrast between AE and VPE concerns locality effects.

- (46) a. Mali wei-guo ziji-de haizi le. Sushan yiwei Wu ma ye wei-guo e le.
 Mary feed-ASP self-GEN child ASP Susan think Wu nanny also feed-ASP ASP
 ‘Mary fed her own child, and Susan thought that Nanny Wu fed her child, too.’
 b. Susan thought that Nanny Wu fed Susan’s child, too.

The locality effect observed in English sentences is absent in (46), since the null object following *wei-guo* ‘feed-ASP’ in the second sentence can ‘cross’ the embedded subject *Wu ma* ‘Nanny Wu’ to refer to someone associated with *Sushan* ‘Susan’, yielding the interpretation, “Mary fed her own child, and Susan thought that Nanny Wu fed Susan’s child, too.” Given the unavailability of such a reading in English VPE sentences, Cheng claims that we should rely on AE to account for this construction in Mandarin Chinese.

Now let us consider another discrepancy between Mandarin null object constructions and English VPE sentences, as illustrated below from Cheng (2013).

- (47) a. John punished John’s students, and Bill did [_{VP} e], too.
 b. #Bill punished Bill’s students.

In (47a), the sloppy reading, that Bill punished Bill's students, is not available. But such a reading is observable in Mandarin Chinese:

(48) a. Zhangsan chufa-le Zhangsan-de xuesheng. Lisi ye chufa-le [_{NP} e]. (Cheng 2013)

Zhangsan punish-ASP Zhangsan-GEN student Lisi also punish-ASP

'*lit.* Zhangsan punished Zhangsan's students. Lisi also punished e.'

b. Lisi also punished Lisi's students.

According to Cheng's intuition, the sentence in (48a) has a reading in which the null object refers to Lisi's students. If (48a) is analyzed on a par with (47a), it is unclear why the sloppy reading is available in (48a). This fact suggests that the second sentence in (48a) should not be construed as a VPE construction.

The source of the sloppy reading in English VPE constructions is the empty VP itself. There is a relationship of mutual entailment here: the presence of an empty VP in a sentence feeds the availability of a sloppy reading, and the presence of a sloppy reading guarantees the emptiness of a VP. Thus, in order to demonstrate definitively that the null object construction in Mandarin Chinese is not a VPE construction, Cheng (2013) proposes that we need to look for cases in which some VP-internal constituent remains overt, yet a sloppy reading is still generated. One such piece of evidence is provided below:

(49) a. Zhangsan da-le san-ge xuesheng san ci.

Zhangsan hit-asp three-CL student three time

'Zhangsan hit three students three times.'

b. Lisi zeshi da-le e liang ci.

Lisi whereas hit-asp two time

'*lit.* Whereas Lisi hit *e* two times.'

= ‘Whereas Lisi hit three students two times.’

(^{OK}2>>3, ^{OK}3>>2)

The difference between this pair of sentences and the previous set is that a frequency phrase appears at the end of each sentence in (49), indicating the number of times the subject hit the object. Cheng (2013) claims that, if the frequency phrase can be proven to be part of the VP, we will have strong evidence against the analysis that the sloppy reading must be associated with VPE.

Soh (1998) proposes that post-verbal duration and frequency phrases should indeed be analyzed as VP-internal elements. Her argumentation goes as follows.

- (50) a. Zhangsan qing-guo mei-ge xuesheng liang-ci.
 Zhangsan invite-asp every-cl student 2-time
 ‘Zhangsan invited every student twice.’ every > 2, 2 > every
- b. Zhangsan qing-guo liang-ci mei-ge xuesheng.
 Zhangsan invite-asp 2-time every-cl student
 ‘Zhangsan invited every student twice.’ *every > 2, 2 > every

In (50a), the object *mei-ge xuesheng* ‘every student’ precedes the frequency phrase *liang-ci* ‘two times’, whereas in (50b), the ordering of these two constituents is reversed. According to Soh (1998), (50a) has two interpretations, while (50b) has only a reading in which the frequency phrase takes wide scope. Soh (1998) attributes the ambiguity of (50a) to the mutual c-commanding relation between the object and the frequency phrase. She analyzes (50a) as (51a), in which the frequency phrase adjoins to VP:

- (51) a. [_{VP} DP_{subject} v_{V+F+v} [_{FP} DP_{1-object} t_{V+F} [_{VP} DFP [_{VP} t_V t_I]]]]
-
- b. [_{VP} DP_{subject} v_{V+F+v} [_{FP} t_{V+F} [_{VP} DFP [_{VP} t_V DP_{object}]]]]
-

As we can see in (51a), the wide scope reading of the object results from movement of this object to a higher position, so that it c-commands the frequency phrase. However, such movement does not take place in (51b), which gives rise to a situation in which the object only takes narrow scope. If the frequency phrase were to adjoin to νP , then the object wide scope reading should not arise, since the object would always be c-commanded by the frequency phrase at the νP -level. The existence of two interpretations of (50a) therefore suggests that viewing the frequency phrase as a VP-level constituent is more appropriate.

Based on Soh's analysis of the adjunction site of frequency phrases, Cheng (2013) claims that VPE cannot be involved in the formation of (49); otherwise, there would be no principled way to account for the co-existence of a sloppy reading and an overt frequency phrase at the VP-level.

Another piece of evidence showing that the sloppy reading does not necessarily result from an empty VP is drawn from double object and dative constructions.

(52) a. Zhangsan song ziji-de xiaohai Mali-de zhaopian. (Cheng 2011)

Zhangsan send self-gen child Mary-gen picture

'Zhangsan sent his child Mary's picture.'

b. Lisi zeshi song e Xiaomei-de zhaopian. (^{OK}strict, ^{OK}sloppy)

Lisi whereas send Xiaomei-gen picture

'lit. whereas Lisi sent e Xiaomei's picture.'

(53) a. Zhangsan song ziji-de zhaopian gei Mali. (Cheng 2011)

Zhangsan send self-gen picture to Mary

'Zhangsan sent his picture to Mary.'

b. Lisi zeshi song e gei Xiaomei. (^{OK}strict, ^{OK}sloppy)

Lisi whereas send to Xiaomei

'lit. Whereas Lisi sent e to Xiaomei.'

In (52b), the omitted constituent is the indirect object *ziji-de xiaohai* ‘self’s child’, which refers to either Zhangsan’s child or Lisi’s child; in (53b), the empty position corresponds to the direct object *ziji-de zhaopian* ‘self’s picture’, which could be Zhangsan’s picture or Lisi’s picture.³ As we can see in both pairs of sentences, one of the verb’s internal arguments remains in each of (52b) and (53b), yet both of these sentences have sloppy readings. Based on this fact, Cheng (2011) concludes that it is AE rather than VPE that produces these sentences, and proposes that (52b) should be derived by simply deleting the argument, *ziji-de xiaohai* ‘self’s child.’

- (54) Lisi zeshi [VP [V' [V' song [NP ~~ziji-de xiaohai~~]] Xiaomei-de zhaopian]].
 Lisi whereas send self-gen child Xiaomei-gen picture
 ‘lit. whereas Lisi sent e Xiaomei’s picture.’

Given these considerations, Cheng (2011) concludes that Mandarin Chinese, like other East Asian languages such as Japanese and Korean, has AE.

After establishing the case for AE in Mandarin Chinese, Cheng (2013) turns to an account for the fact that dropping objects is acceptable in languages like Japanese and Mandarin Chinese but not in languages like English. He arrives at the following distinction based on a number of work:

- (55) a. Languages that allow AE:
 Japanese: Oku (1998), Takahashi (2007, 2008, 2010), Saito (2007), Otaki (2011)
 Korean: Kim (1999)
 Turkish: Şener & Takahashi (2009)
 Mandarin Chinese: Cheng (2010)
 American sign language: Koulidobrova (2012)

³ In Cheng (2013), he uses *three students* and *three books* to replace *his child* and *his picture* in (52) and (53), respectively.

- b. Languages that DO NOT allow AE:

English, French, German, Dutch, Spanish, Italian, Serbo-Croatian.....

Inspired by Bošković's (2012) analysis that radical pro-drop only takes place in NP languages, Cheng (2013) relates the possibility of AE in a language to the properties of nominal phrases themselves. More specifically, taking into consideration the unacceptable and acceptable 'objectless' sentences in these languages, Cheng attributes the unelidability of nominal phrases in languages like English to the fact that they are phases, and claims that the elidability of Chinese nominal phrases stems from the fact that they are not phases. Therefore, a generalization about AE capitalizing on the distinction between NP-languages (like Mandarin Chinese) and DP-languages (like English) is yielded:

- (56) AE is only possible in languages without DPs (i.e. NP languages).

In order to implement the idea that only non-phases can be elided, Cheng relies on the following assumptions regarding syntactic derivation.

- (57) a. Derivations proceed successive cyclically, and cycle is defined by phase. (cf. Chomsky 2000, 2001, 2008).
- b. The operation Transfer sends the complement of a designated phase head to the PF component (Chomsky 2000, 2001, Hiraira 2005).⁴
- c. Argument ellipsis, being one of the elliptic constructions, should be characterized as a PF phenomenon, implemented by PF deletion.
- d. When an element is sent to Spell-out, the PF component can decide either to spell out the element **properly** or spell it out as **null** (does not realize it phonologically) (cf. Holmberg

⁴ "Transfer is sometimes also called Spell-out. While the latter emphasizes the mapping to the audio sensory (PF) component, the former is a neutral term for the mapping to the interfaces, including PF and LF Cheng (2013:203)."

2001).

- e. No scattered deletion: in a single spell-out domain (SOD), all the elements are either realized properly or realized as null.

Another important assumption in Cheng (2013) is represented below:

- (58) vP is a phase in English (and, more generally, DP languages), while VP is a phase in Japanese, Korean, and Mandarin Chinese.

Given (57) and (58), Cheng (2013) uses an example of VPE to show how AE is ruled out in DP languages.

- (59) John saw three students, and Bill did [$_{VP}$ e], too.

In the beginning of the derivation of the second conjunct, the object *three students* is merged with the matrix verb, forming a VP. Later, the VP merges with v to construct an intermediate projection v' . Once the subject *Bill* comes into the structure, the features on v are checked off and the complement of v will be sent to Spell-out. As long as something is sent to the Spell-out domain, the PF component can choose to spell out the element *properly* or pronounce it as null. These derivations are represented below:

- (60) a. [$_{VP}$ Bill [v [$_{VP}$ saw three students]]] sent to Spell-out
 b. [$_{VP}$ Bill [v [$_{VP}$ Δ]]] VP realized as null

Simply put, because vP is a phase, the VP can be sent to Spell-out and then realized as null at PF.

As for why English lacks AE, Cheng (2013) uses (61) as an illustration.

(61) *John saw three students yesterday, and Bill also saw [_{DP} e] (= three students).

[illegible]

Cheng (2013) claims that English DPs in object position are complements of V, which is not a phase head. As a result, they cannot be sent to Spell-out to become phonologically null. If DP were elided, the no-scattered-deletion condition in (57e) would be violated, since one part of the complement of vP, *saw* in this case, is realized overtly, while the other, the DP part, is not.

As for Japanese and Mandarin Chinese, given the assumption that VP is a phase in these languages, the nominal phrase that is the complement of a phase head V is subject to deletion, since it can be sent to Spell-out and realized as null.

(63) Japanese and Mandarin Chinese

a. $[_{VP} \text{ saw}_V [_{NP} \text{ three students }]]$
→sent to Spell-out

b. $[_{VP} \text{ saw}_V [_{NP} \Delta]]$
→realized as null

The analysis built on phase-hood raises a question: how can we determine whether a particular head is phase or not? Based on Takahashi (2011), Cheng (2013) proposes that a constituent can be considered a phase as long as the following condition is met:

(64) XP is a phase iff the head X bears uninterpretable Case features and the features are checked off.

For the difference between English and languages like Japanese and Mandarin Chinese with respect to Case assignment, Cheng (2013) further makes the following two assumptions:

(65) Parallelism of Case Feature Checking:

Structural Case must be checked by a functional head; inherent Case must be checked by a lexical head.

- (66) a. Case features in English (and, more generally, other DP languages) are structural and are located in D.
b. Case features in Japanese and Mandarin Chinese are inherent/contextual and are located in N.

Given the assumptions in (65) and (66), Cheng (2013) accounts for the cross-linguistic difference regarding how a phase-hood is formed as follows. In English, Case features are structural and are located in D, which can only be checked off by the functional head ν . Once the feature-checking is done via Agree (Chomsky 2000), ν becomes a phase head, which consequently gives rise to a construction in which DP alone cannot be elided. On the other hand, Case features are inherent/contextual in Japanese and Mandarin Chinese, and are located in N. Based on Saito's (2007) idea that some Case features can be checked off through Merge, Cheng (2013) proposes that once NP merges with V, the feature-checking is completed. As a result, the NP is in the complement domain of a phase head V, which means that it can be sent to Spell-out and realized as null later. This is how AE is possible in Mandarin Chinese.

To sum up, Cheng's (2013) analysis can be boiled down to the following two points:

- (67) a. An elided nominal phrase is an NP.
b. An elided nominal phrase is selected by a phase head.

Although Cheng's (2013) analysis seems to capture properties of null object constructions in Mandarin Chinese on theoretical grounds, it faces a significant problem: it fails to explain the fact, illustrated at length above, that object drop in Mandarin is subject to structural parallelism. In the following section, I will introduce another account of the Chinese null object constructions—G. Li's (2002) V-stranding

VPE—and demonstrate that G. Li’s V-stranding VPE is superior to Cheng’s (2013) AE in accounting for null object sentences in Mandarin Chinese.

3.5 V-stranding VP-ellipsis

Recall that Merchant’s (2001) analysis of English VPE constructions relies on a semantic requirement—mutual entailment—to capture the relation between a preceding sentence and a following one. Any pair of sentences that fail to semantically entail one another are prohibited from participating in VPE. In Chapter 2 and the beginning of this chapter, I gave a number of pieces of evidence showing that the object position can only be left empty in a sentence that bears a particular structural resemblance to the one that precedes it. Cheng’s (2013) analysis does not capture this structural parallelism, and seems to suggest that any object position in Mandarin Chinese sentences is eligible to be elided, since nominal phrases are NPs and they are complements of a phase head V in Mandarin Chinese. This prediction, as we now know, is not borne out. Before providing a more fine-grained analysis for null object constructions in Mandarin Chinese, let us first look at G. Li (2002) first.

3.5.1 G. Li (2002)

Unlike Cheng (2013), G. Li (2002) sides with Huang’s (1991) original conclusion that Mandarin null object constructions involve VPE; however, she disagrees with Huang’s contention that the first step in this process is verb movement to INFL. The first piece of evidence she provides is given in (68).

- (68) John piping-le tade laoshi, Bill ye piping [e] le.
criticize-ASP his teacher also criticize ASP
‘John criticized John’s teacher, and Bill criticized John’s teacher.’

‘John criticized John’s teacher, and Bill criticized Bill’s teacher.’

‘John criticized John’s teacher, and Bill criticized someone.’

(69) John criticized his teacher, and Bill did too.

‘John criticized John’s teacher, and Bill also criticized John’s teacher.’

‘John criticized John’s teacher, and Bill also criticized Bill’s teacher.’

G. Li points out that, unlike its English counterpart in (69), the null object sentence in (68) has an additional reading in which the person criticized by Bill is unspecified. Thus, she claims that it is not licit to account for the null object constructions in Mandarin Chinese in terms of V-to-I movement/VP-ellipsis.

Second, G. Li (2002) notes that locality effects are not always present in null object sentences in Mandarin Chinese.

(70) a. John piping-le tade laoshi.
 criticize-ASP his teacher

‘John criticized John’s teacher.’

b. Bill zhidao Mark ye piping [e] le.
 know also criticize ASP

‘Bill knew that Mark criticized John’s teacher.’

‘Bill knew that Mark criticized Mark’s teacher.’

‘Bill knew that Mark criticized someone (that could be Bill’s teacher).’

(70b) shows that, contra Huang (1991), a nonlocal sloppy reading is available in which the null object is co-referential with the matrix subject in the same sentence.

The third piece of evidence concerns sentences that contain a modal auxiliary:

(71) (At tomorrow's school reunion.....)

John hui kandao tade laoshi, Bill ye hui kandao [e].

will see his teacher also will see

‘John will see John’s teacher, and Bill will see John’s teacher.’

‘John will see John’s teacher, and Bill will see Bill’s teacher.’

It is usually assumed that auxiliary verbs occupy the INFL position in a sentence, so the appearance of the modal in (71) must prevent the verb *kanjian* ‘see’ from moving to INFL. Based on this evidence, it seems that the type of VPE proposed by Huang (1991) cannot take place; if it did, the verb in the second conjunct of (71) could not exist. However, the existence of the sloppy reading for (71) raises a question: if VPE is not involved in the formation of the second clause of (71), why is this sentence ambiguous?

Fourth, G. Li (2002) notes that in English VPE constructions, if the first conjunct contains an adverb, the second conjunct must be interpreted as also containing the meaning of this adverb, even though the adverb is not phonetically realized in the sentence:

(72) John clearly saw his mother, and Mary did, too.

‘John clearly saw John’s mother, and Mary also clearly saw John’s mother.’

‘John clearly saw John’s mother, and Mary also clearly saw Mary’s mother.’

The fact that both the strict and sloppy readings of this sentence embed the adverbial meaning in (72) suggests that the adverb in the second conjunct is elided along with the VP. However, Mandarin Chinese behaves differently from English with respect to the availability of an adverbial meaning in a null object sentence.

(73) John *qingchude* kanjian-le tade mama, Mary ye kanjian [e] le.

clearly see-ASP his mother also see ASP

‘John clearly saw John’s mother, and Mary saw John’s mother.’

‘John clearly saw John’s mother, and Mary saw Mary’s mother.’

The adverb *qingchude* ‘clearly’ is overtly present in the first conjunct, so it is not surprising that the first conjunct contains the meaning of this adverb. If VPE is involved in the formation of the second conjunct, the second conjunct should also be interpreted as containing the meaning ‘clearly’, given the assumption that adverbs adjoin to VP. But, as we can see in (73), neither the strict nor the sloppy reading of the second conjunct contains the meaning of the adverb.

G. Li’s final argument concerns Huang’s justification for V-to-INFL movement in Mandarin Chinese. Recall that Huang (1991) builds his VPE analysis on the assumption that the V in the second conjunct has to raise to INFL so that VPE can apply to the remaining VP.

Pollock (1989) demonstrates that adverbs and negation markers in French can intervene between a verb and its object, and takes this fact to show that verbs undergo movement in French.

(74) a. Jean embrasse souvent Marie.

kiss often

‘John often kisses Mary.’

b. Jean (n’) aime pas Marie.

like not

‘John does not like Mary.’

The fact that the verbs *embrasse* ‘kisses’ and *aime* ‘likes’ precede the adverb *souvent* ‘often’ and the negative marker *pas* ‘not’ in (74) indicates that these verbs have raised from their base-generated positions to a higher one. Contrastively, Mandarin Chinese only allows verbs to follow the adverb *changchang* ‘often’ and the negation marker *meiyou* ‘not.’ .

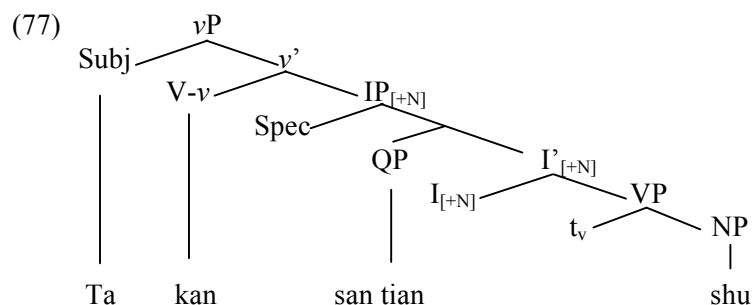
- (75) a. John yinggai changchang wen Mary.
 should often kiss
 ‘John should often kiss Mary.’
- b. John mei(you) kanjian Mary.
 not see
 ‘John did not see Mary.’

These facts suggest that verbs in Mandarin Chinese do not raise to a position as high as INFL.

In order to solve the problems that she highlights, G. Li turns to Huang (1994, 1997), in which the mechanism of V-to-*v* movement is proposed to account for the grammaticality of sentences like the following:

- (76) Ta kan-le san tian (de) shu.
 he read-ASP three day de book
 ‘He read (books) for three days.’

shu ‘book’ is the direct object of the verb *kan* ‘read.’ As we can see in (76), however, Mandarin Chinese allows an additional phrase to intervene between the verb and its object. This phrase, *san tian* ‘three days’, indicates the duration of the book-reading action. In order to account for this phenomenon, Huang proposes that this sentence not only involves gerundive nominalization but is also derived by movement of the verb to a higher *v* position.



Putting details aside, the formation of (76) requires that the verb *kan* ‘read’ move from a position adjacent to its object *shu* ‘book’ to land in the head of *vP*, thus allowing it to end up in a position higher than its base-generated position, *V*.

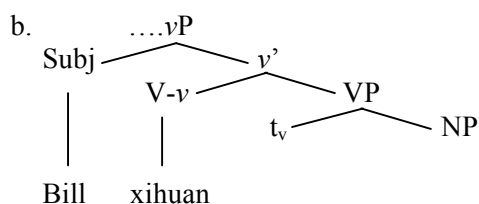
With the help of the mechanism of *V-to-v* movement, G. Li (2002) proposes that Mandarin null object sentences like (78a) should be analyzed as in (78b):

(78) a. John xihuan tade laoshi, Bill ye xihuan [e].

like his teacher also like

‘John likes his teacher, and Bill also likes (John’s teacher).’

‘John likes his teacher, and Bill also likes (Bill’s teacher).’



The syntactic configuration that G. Li adopts consists of two layers of *VP*: the lower *VP* is the birthplace of the main verb as well as its internal argument, and the higher *vP* is the maximal projection where the subject is base-generated. G. Li claims that after the main verb *xihuan* ‘like’ in the second conjunct

moves from its original position to v , an empty VP is yielded.⁵ In addition, she derives the interpretation of the empty VP in the following way:

- (79) a. John [_{VP} [_V xihuan] [_{NP} tade laoshi]]
 Bill ye [_{VP} [_V xihuan] [_{NP} e]]
 ↓ *V-to-v raising (at Spell-out)*
 b. John [_{V-v} xihuan] [_{VP} t_V [_{NP} tade laoshi]]
 Bill ye [_{V-v} xihuan] [_{VP} t_V [_{NP} e]]
 ↓ *Derived VP Rule (at LF)*
 c. John [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} tade laoshi]]]
 Bill ye [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} e]]]
 ↓ *Pronoun Rule (at LF)*
 d. John [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} x-de laoshi]]]
 Bill ye [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} e]]]
 ↓ *VP Rule (at LF)*
 e. John [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} x-de laoshi]]]
 Bill ye [_{V-v} xihuan] [_{VP} λ_X [_X t_V [_{NP} x-de laoshi]]]

In essence, G. Li follows Otani and Whitman (1991) in deriving the sloppy reading of the null object construction via the Pronoun Rule and the VP rule.⁶

⁵ Since the mechanism that G. Li (2002) proposes involves not only VPE but also the stranding of the verb in a higher position, I will refer to her analysis as *V-stranding VPE* from now on.

⁶ Although G. Li's V-stranding VPE differs from Huang's (1991) VPE in the landing site of the verb, they share an important property in common: both analyses assume an empty VP, whose meaning is derived by LF-copying of the semantics of the antecedent VP into the empty part of the sentence. Therefore, strictly speaking, neither version of VPE elides any overt constituents. As the discussion proceeds, I will show that my analysis does involve deletion of phonetically realized lexical items.

The merit of this analysis, which implicates that *v* rather than INFL as the landing site of the verb, is that it allows us to account for the unavailability of an adverbial meaning in a null object sentence without jeopardizing the spirit of the VPE account. A relevant example is repeated here.

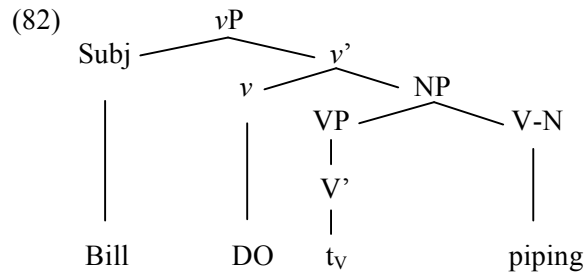
- (80) John qingchude kanjian-le tade mama, Mary ye kanjian [e] le.
 clearly see-ASP his mother also see ASP
 ‘John clearly saw John’s mother, and Mary saw John’s mother.’
 ‘John clearly saw John’s mother, and Mary saw Mary’s mother.’

G. Li attributes the unavailability of the adverbial meaning in the second conjunct to the fact that the adverb is adjoined to *v*P rather than VP (Tang 1998). When the VP Rule comes into play, the constituent VP that it applies to does not contain the adverb. Consequently, the adverbial reading is not available in the second conjunct, unless the adverb itself is overtly present.

Another problem that G. Li needs to solve is the availability of an unspecified reading that refers to a discourse topic in a null object sentence.

- (81) John piping-le tade laoshi, Bill ye piping [e] le.
 criticize-ASP his teacher also criticize ASP
 ‘John criticized John’s teacher, and Bill criticized John’s teacher.’
 ‘John criticized John’s teacher, and Bill criticized Bill’s teacher.’
 ‘John criticized John’s teacher, and Bill criticized someone.’

As we have seen earlier, G. Li (2002) claims that this sentence has a third reading in which the person criticized by Bill is someone other than John’s teacher or Bill’s teacher. She proposes that the unspecified reading is derived by the nominalization of the verb.



The verb *piping* ‘criticize’ undergoes nominalization by moving from V to adjoin to N. Once the process of nominalization is completed, the newly derived form can no longer take an NP as its syntactic object, so the ‘logical’ object of this nominalized verb has to rely on the discourse context for interpretation. This analysis amounts to saying that a single lexical item might end up with different syntactic categories, depending on which interpretation is generated: when the sloppy and strict readings are derived, the verb in the sentence in (81) should be thought of as a verb; when the unspecified reading is favored, the verb should be viewed as a nominalization.

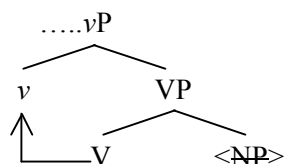
The primary contribution of G. Li’s (2002) paper is her convincing argument that the verb moves to v rather than INFL in Mandarin Chinese. In addition, her analysis provides an explanation for the absence of the adverbial meaning in null object constructions: adverbs are v P-level entities rather than VP-level elements. As a result, if an adverb is not present at the v P-level, and some constituent smaller than v P is elided, it is impossible for the whole sentence to have the adverbial meaning. In the following section, I will argue against Cheng’s (2013) AE analysis, and provide additional evidence in favor of G. Li’s V-stranding VPE analysis for null object sentences in Mandarin Chinese.

3.5.2 Defending V-stranding VPE

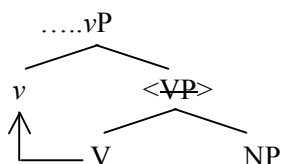
Based on the preceding discussion, two competing analyses for null object sentences in Mandarin Chinese emerge: the argument ellipsis analysis proposed by Cheng (2013), and the V-stranding VP-ellipsis

analysis advocated by G. Li (2002). These two analyses both have the effect of producing a sentence in which no overt object follows a transitive verb. Each analysis is represented configurationally as follows:

(83) a. Argument ellipsis



b. V-stranding VPE



Although the elided constituent is a nominal phrase in AE and a verb phrase in V-stranding VPE, both mechanisms give rise to the same string of lexical items consisting of a single subject and a single verb.

Before laying out my argument in favor of V-stranding VPE, I would like to highlight one important point that is relevant to the current discussion. Notice that most of the papers we have discussed so far focus only on sentences used as conjuncts, and ignore other environments where it is also legitimate to use objectless sentences. However, as I showed in subsection 3.2.1, objectless sentences are allowed in a range of contexts in Mandarin Chinese: they can serve as answers to yes-no questions or *wh*-questions, or as the follow-up for a declarative sentence; they can also be used as yes-no questions or *wh*-questions themselves. A summary of licit environments is repeated below from 3.2.1:

(12)	Type of preceding sentence	Type of following sentence with null object
a.	Yes-no question	Declarative sentence
b.	Declarative sentence	Yes-no question
c.	<i>Wh</i> -question	Declarative sentence
d.	Declarative sentence	<i>Wh</i> -question
e.	Declarative sentence	Declarative sentence

The ultimate goal of this chapter is to present a unified analysis not only for null object sentences of type (12e) but also those of the other types. With this important point in mind, let us consider in more detail the analyses proposed for Mandarin Chinese null object sentences by Cheng (2013) and G. Li (2002).

Recall that Cheng (2011) uses sentences like the one below, in which one of the internal arguments of the verb remains overt in the surface structure, as evidence against VPE.

- (54) Lisi zeshi [VP [V' [V' song [NP ~~ziji-de~~ ~~xiaohai~~]] Xiaomei-de zhaopian]].
 Lisi whereas send self-gen child Xiaomei-gen picture
 ‘lit. whereas Lisi sent e Xiaomei’s picture.’

Since the sloppy reading of (54) is preserved even though the VP contains an overt element, Cheng (2011) concludes that a process of argument ellipsis has taken place. Under this analysis, only a single verbal argument, in this case the indirect object *ziji-de xiaohai* ‘self’s child’, is deleted.

However, sentences with this type of ellipsis are not always acceptable in Mandarin Chinese.

- (84) a. Yuehan song Mali biye liwu le ma?
 John give Mary graduation gift SFP Q
 ‘Did John give Mary a graduation gift?’
 b. Yuehan song-le.
 John give-ASP
 ‘Yes, John gave Mary a graduation gift.’
 c. Yuehan song Mali biye liwu le.
 John give Mary graduation gift SFP
 ‘Yes, John gave Mary a graduation gift.’
 d. ??Yuehan song Mali le.
 John give Mary SFP

‘Yes, John gave Mary a graduation gift.’

- e. *Yuehan song biye liwu le.
John give graduation gift SFP

‘Yes, John gave Mary a graduation gift.’

In addition to the complete sentence in (84c), the other felicitous answer to the yes-no question in (84a) is (84b), in which everything following the main verb *song* ‘give’ disappears. Simply dropping the direct object of the verb, as shown in (84d), or deleting the indirect object, as in (84e), gives rise to infelicitous and unacceptable sentences. A similar phenomenon can also be observed when it is the yes-no question itself that hosts the missing element.

- (85) a. Wo song Mali biye liwu le.
I give Mary graduation gift SFP
‘I gave Mary a graduation gift.’
- b. Ni (ye) song-le ma?
you also give-ASP Q
‘Did you (also) give Mary a graduation gift?’
- c. ?Ni (ye) song Mali le ma?
you also give Mary SFP Q
‘Did you (also) give Mary a graduation gift?’
- d. *Ni (ye) song biye liwu le ma?
you also give graduation gift SFP Q
‘Did you (also) give Mary a graduation gift?’

The sentence containing the missing elements is a yes-no question. Among the three possible structures, only the one that drops every constituent after the verb *song* ‘give’ is truly felicitous; the other two options are either somewhat degraded or totally unacceptable.

I do not intend to suggest that AE cannot take place in Mandarin Chinese. As we can see in (84d,e) and (85c,d), sentences that drop inanimate direct objects are more acceptable than those that delete animate indirect objects. This fact suggests that animacy may be a crucial factor determining which ellipsis mechanism is involved. In fact, cross-linguistically, Mandarin Chinese is not the only language that exhibits such a property.

Goldberg (2005) notices that in Hebrew, animate entities are more resistant to deletion than inanimate objects.

(86) Hebrew: Representative Ungrammatical *Animate* Null Objects: (Goldberg 2005:48)

- a. *Šmu’el hošiv et ha-yeladot al ha-mita, ve-Dina
 Shmuel sit[*Past3Msg*] ACC the-girls on the-bed and-Dina
 hilbiša be-simlot.
 dress[*Past3Fsg*] in-dress
 ‘Shmuel sat the girls on the bed, and Dina dressed (~~them~~) in dresses.’
- b. Q: Eyfo ha-‘iš še-‘amad po lifney rega?
 where the-man that-stand[*Past3Msg*] here before moment
 ‘Where (is) the man who stood here a moment ago?’
- A: *Miryam hovila la-misrad.
 Miryam lead[*Past3Fsg*] to.the-office
 ‘Miryam led (~~him~~) to the office.’
- c. *Hine ha-yeladot šeli. Šošana hisi’a le-Tel-‘Aviv
 here the-girls of.me Shoshana drive[*Past3Fsg*] to-Tel-Aviv

etmol.

yesterday

‘Here (are) my daughters. Shoshana drove (~~them~~) to Tel-Aviv yesterday.’

Goldberg attributes the ungrammaticality of (86) to the fact that animate null objects are not acceptable in Hebrew, and claims that these sentences can become grammatical if corresponding pronouns are inserted into the empty object positions. Contrastively, inanimate objects can be elided in Hebrew sentences.

(87) Hebrew: Representative Grammatical *Inanimate* Null Objects: (Goldberg 2005:50)

- a. Yosef masar et ha-yayin le-Miryam, ve-Sara
Yosef hand[*Past2Msg*] ACC the-wine to-Miryam and-Sara
masra le-Yicxak.
hand[*Past3Fsg*] to-Yitschak.

‘Yosef handed the wine to Miryam, and Sara handed (~~it~~) to Yitschak.’

- b. Q: Ha-memšala sipka et ha-maxbarot la-‘universita?
the-government supply[*Past3Fsg*] ACC the-notebooks to.the-univ.

‘(Did) the government supply the notebooks to the university?’

- A: Lo, anaxnu konim me-ha-xanut.
no we buy[*BniMpl*] from-the-store

‘No, we buy (~~them~~) from the store.’

- c. Ah, hine ha-šamenet. Ten li.
ah here the-cream give[*Imp*] to.me

‘Ah, here (is) the cream. Give (~~it~~) to me, please.’

Given the fact that inanimate objects can be dropped independently, in conjunction with the facts in (87), Goldberg (2005) concludes that Hebrew does have pure null object constructions, but restricts the acceptability of object deletion to inanimate objects.

Meanwhile, Goldberg (2005) notes that, if Hebrew allowed V-stranding VPE, this animacy-related discrepancy should not arise, since every constituent, whether animate or not, disappears with the deletion of VP. This assumption gains support from the following pair of sentences.

(88) Hebrew: Null Animate DO (*Null Object) and *Overt* Indirect Object (*VPE) (Goldberg 2005:53)

Context: Dvora is pregnant and has many errands to do; Miryam, who has a car but is sometimes inconsiderate, is supposed to be helping her.

Q: (Ha-‘im) Miryam hisi’a et Dvora la-makolet?

Q Miryam drive[*Past3Fsg*] ACC Dvora to.the-grocery.store

‘(Did) Miryam drive Dvora to the grocery store?’

A: *Lo, ‘aval hi hisi’a la-DO’AR.

no but she drive[*Past3Fsg*] to.the-post.office

‘No, but she drove (~~her~~) to the post office.’

(89) Hebrew: Null Animate DO (*as Null Object) and *Null* Indirect Object, √ as VPE

Context: Same.

Q: (Ha-‘im) Miryam hisi’a et Dvora la-makolet?

Q Miryam drive[*Past3Fsg*] ACC Dvora to.the-grocery.store

‘(Did) Miryam [drive Dvora to the grocery store]?’

A: Ken, hi hisi’a.

yes she drive[*Past3Fsg*]

‘Yes, she drove [~~Dvora to the grocery store~~].’

As we can see in these two cases, the ungrammaticality of (88), caused by the omission of the animate object, is remedied by the disappearance of both the animate direct object and the inanimate indirect object, as shown in (89). Given the fact that animate direct objects are not subject to the Null Object mechanism in Hebrew, the only explanation left is that V-stranding VPE gives rise to the answer-sentence in (89).

Returning to the Mandarin sentences in (84) and (85), we find that Mandarin Chinese has a similar phenomenon: omitting both inanimate and animate objects gives rise to better results than dropping animate objects alone. This raises the question: if Cheng's (2013) analysis is on the right track, why can we not drop animate objects alone in (84) and (85)? On the other hand, if we assume that deletion of animate objects is prohibited, how can we account for the sentences in (49b) and (52b), in which the animate objects appears to be elided, yet the resulting sentences are still acceptable? (52b) is repeated below.

- (52) b. Lisi zeshi song e Xiaomei-de zhaopian. (^{OK}strict, ^{OK}sloppy)
 Lisi whereas send Xiaomei-gen picture
 'lit. whereas Lisi sent e Xiaomei's picture.'

Comparing (52b) to (84e) as well as (85d) gives rise to a dilemma: dropping animate objects is acceptable in (52b), but it is not in (84e) and (85d). Given these facts, we have the following options for analyzing null object sentences, each of which has an unfortunate set of consequences:

- (90) a. Adopt an AE analysis. Problem: we need to account for (84e), (85d), and other cases in which dropping animate objects gives rise to ungrammaticality.
 b. Embrace a V-stranding VPE analysis. Problem: we need to deal with (49b) and (52b), where animate objects seems subject to deletion.

Each analysis has its own merits and challenges. In the remainder of this chapter, I argue for adopting the V-stranding VPE analysis, since it can account for the most important factor regulating when an (animate) object can disappear from the sentence: such objects are allowed to be absent in sentences that are structurally parallel to those preceding them.

Recall that, in Section 3.2, I pointed out the importance of structural parallelism in constructing environments that can tolerate the absence of objects. Cheng's (2013) AE analysis fails to account for this fact and, as a result, over-generates unacceptable sentences. The following sentence, for instance, is predicted to be acceptable under Cheng's framework.⁷

- (91) *John qunian mai-le fangzi, Bill qunian zeshi mai-le e.
 last-year buy-ASP house last-year whereas sell-ASP
 ‘John bought a house last year, whereas Bill sold [a house] last year.’

The elided phrase in this case is *fangzi* ‘house’, which is a non-phase NP. Based on Cheng's analysis, *fangzi* should be eligible for deletion. However, (91) is not grammatical. This fact suggests that it is not a property of nominal phrases that determines the distribution of null object sentences, but rather a property of verbal phrases.

I have already pointed out that, in all the acceptable sentences illustrated in this chapter, the verb in the second sentence is identical to the one in the preceding sentence. Such parallelism does not exist in (91): the verb in the first clause is *mǎi* ‘buy’ and the one in the second is *mài* ‘sell.’⁸ In order to account for the (un)grammaticality of null object sentences in Mandarin Chinese, therefore, we need a mechanism that is able to capture verbal identity between sentences. I suggest that Merchant's e-GIVENNESS rule can provide us with such a mechanism.

⁷ Although it is relatively easier to drop inanimate objects, sometimes the absence of such objects is still constrained by structural parallelism.

⁸ Phonetically, *mǎi* ‘buy’ bears a falling-plus-rising tone and *mài* ‘sell’ carries a falling tone.

Merchant's (2001) e-GIVENNESS is based on semantic entailment: simply put, the elided part of the sentence has to be semantically identical to its overt counterpart in the preceding sentence. If entailment does not hold between the elided VP and its antecedent, VP-ellipsis should not take place. Based on Merchant's (2001) definitions for e-GIVENNESS, the semantics of the elided VP and its antecedent VP in (91) should appear as follows:

- (92) a. The antecedent VP: $VP_A' = \exists x.x \text{ bought a house}$
 b. The elided VP: $VP_E' = \exists x.x \text{ sold a house}$

Semantically speaking, (92a) reads *there exists a person x such that x bought a house*, and (92b) expresses *there exists a person x such that x sold a house*. The semantics of VP_A' and VP_E' remains the same after the application of F-closure:

- (93) a. $F\text{-clo}(A): \exists x.x \text{ bought a house}$
 b. $F\text{-clo}(E): \exists x.x \text{ sold a house}$

Taking (92) and (93) into consideration, we can observe that VP_A' does not entail $F\text{-clo}(E)$ and VP_E' does not entail $F\text{-clo}(A)$. Consequently, VPE is expected not to take place in (91). The unavailability of VPE in (91), coupled with the fact that dropping objects alone in most sentences in Mandarin Chinese is prohibited, accounts for why this sentence is ungrammatical.

We can extend the concept of Merchant's e-GIVENNESS and the mechanism of V-stranding VPE to the objectless sentences in subsection 3.2.1, ranging from (1) to (11). Take (5) as an illustration:

- (5) a. Yuehan xihuan Meryl Streep.
 John like

‘John likes Meryl Streep.’

b. Mali ye xihuan e ma?

Mary also like Q

‘Does Mary also like [Meryl Streep]?’

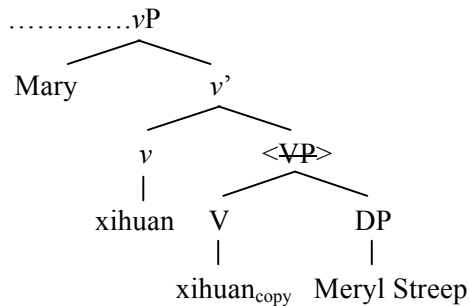
The structural parallelism obtaining between these two sentences can be characterized in terms of Merchant’s (2001) e-GIVENNESS, since the semantics of the antecedent VP entails F.clo(E) and the semantics of the elided VP entails F.clo(A).

- (94) a. The antecedent VP: $VP_A' = \exists x.x \text{ likes Meryl Streep}$
 b. The elided VP: $VP_E' = \exists x.x \text{ likes Meryl Streep}$

- (95) a. F-clo(A): $\exists x.x \text{ likes Meryl Streep}$
 b. F-clo(E): $\exists x.x \text{ likes Meryl Streep}$

Since the VP in (5b) is e-GIVEN, it is allowed to be elided. The derivation is illustrated as follows:⁹

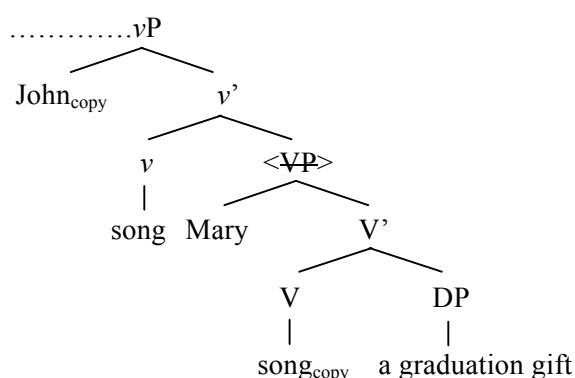
- (96) The derivation of (5b):



⁹ I follow the Copy Theory of Movement proposed in Chomsky (1995), and assume that the lower copy of the verb still can make contributions to the semantic composition of VP.

As we can see in (96), it is the deletion of VP, rather than object drop, that results in apparently ‘objectless’ sentences in Mandarin Chinese. In other words, these are not genuine null object sentences at all, since the object position remains filled with a nominal phrase throughout the derivation. This analysis will apply to any pair of sentences that respects structural parallelism. The derivation of another such as (84b) is illustrated below.

(97) The derivation of (84b):



Since the VP part of the second sentence in (84b) is identical to the one in (84a), it is subject to deletion, causing both internal arguments of the verb to be unpronounced at PF.

We thus arrive at the conclusion that at least some ‘objectless’ sentences in Mandarin Chinese are instances of V-stranding VPE. A problem remains, however: if structural parallelism entails the application of V-stranding VPE, how can we account for the counter-examples that Cheng (2013) notes, such as those shown in (49b), (52b), and (53b), in which some VP-internal constituents remain present in the surface structure?

Notice that these apparently ‘exceptional’ sentences have one property in common: the second sentence in each pair contains a contrast, the existence of which is signaled by the appearance of *zeshi* ‘whereas.’ Take (52) as an example:

- (52) a. Zhangsan song ziji-de xiaohai Mali-de zhaopian. (Cheng 2011)
 Zhangsan send self-gen child Mary-gen picture
 ‘Zhangsan sent his child Mary’s picture.’
- b. Lisi zeshi song e Xiaomei-de zhaopian. (^{OK}strict, ^{OK}sloppy)
 Lisi whereas send Xiaomei-gen picture
 ‘lit. whereas Lisi sent e Xiaomei’s picture.’

Semantically, (52b) is ambiguous between a sloppy and a strict reading; syntactically, the missing constituent corresponds to the animate object of the verb, *ziji-de xiaohai* ‘self’s child.’ This pair of sentences differs from other pairs that we saw earlier in that it specifically indicates the existence of a difference between the entities denoted by the direct objects of the verbs. That is, the object that is given in (52a) is Mary’s picture, whereas its corresponding one in (52b) is Xiaomei’s. This difference is reflected by the use of the coordinating conjunction *zeshi* ‘whereas’, which usually functions to signify the crucial distinction between sentences.

I suggest that we can account for this contrast between (52a) and (52b) by postulating the presence of a focus projection intervening between *vP* and *VP*, the specifier of which hosts contrastive focus. Under this analysis, the constituent marked for contrast will move from its base-generated position within *VP* to the Spec of *FocP*; after this movement takes place, *VPE* will occur, eliding every constituent remaining in the *VP*. This analysis is illustrated as follows:

- (98) [_{VP} [_{v'} song_i [_{FocP} [Xiaomei-de zhaopian]_j [_{Foc'} [_{VP} ~~ziji-de xiaohai~~ [_{v'} ~~t_i~~ ~~t_j~~]]]]]]]
 give Xiaomei-DE picture self-DE child

(98) is the derivation of (52b), in which the verb moves from *V* to *v*, and the direct object lands in the specifier of *FocP*. As for the indirect object, it still remains in its original position. As we can see in this configuration, the disappearance of the indirect object alone from the surface structure in (52b) is an

illusion resulting from the joined effect of the movement of the direct object to a higher position and the deletion of VP. Since the driving force for this movement is the presence of a contrast, no movement will take place in a ‘regular’ sentence where no contrastive indicator is employed. Thus, in these ‘regular’ cases, the direct object will disappear along with the VP. This prediction is borne out by the following question-answer pair of sentences.

- (99) a. Zhangsan song ziji-de xiaohai Mali-de zhaopian le ma?
 Zhangsan send self-GEN child Mary-GEN picture SFP Q
 ‘Did Zhangsan send his child Mary’s picture?’
- b. Ta song_i-le [_{VP} ~~ziji-de xiaohai~~ [_{V'} ~~song_j~~ ~~Mali-de zhaopian~~]].
 he send-ASP self-GEN child send Mary-GEN picture
 ‘Yes, he did.’

Since no contrast between the answer sentence and the question sentence is indicated, FocP is not triggered. As a result, both direct object and indirect object remain in situ, and are elided via VPE.

The derivation of (49b) and (53b) under this analysis proceed as follows:

- (100) The derivation of (49b):

.....[_{VP} [_{V'} da-le_i [_{FocP} [liang ci]_j [_{Foc'} [_{VP} ~~t_j~~ [_{VP} [_{V'} ~~t_i~~ ~~ziji-de xiaohai~~]]]]]]]]]
 hit-ASP two time self-DE child

The contrastive focus in this case is the frequency phrase, *liang ci* ‘two times’, which moves from the adjunction site to VP to the specifier of FocP. After this movement, VPE takes place and deletes everything remaining within VP.

(101) The derivation of (53b):

.....[_{VP} [_{V'} song_i [_{FocP} [_{PP} gei Xiaomei]_j [_{Foc'} [_{VP} ~~ziji-de~~ ~~zhaopian~~ [_{V'} ~~t_i~~ ~~t_j~~]]]]]]]
 send to Xiaomei self-DE picture

The difference between (53a) and (53b) lies in the prepositional phrase that indicates the person who receives the picture. The prepositional phrase in (53b) is a focus of contrast, and must therefore move to the spec of FocP. In addition, since this sentence respects structural parallelism, V-stranding VPE applies, causing the deletion of the verbal argument, *ziji-de zhaopian* ‘self’s picture.’¹⁰

Although Cheng’s (2013) ‘counter-examples’ turn out to support V-stranding VPE under the current analysis, another problem remains to be resolved. This problem concerns semantic isomorphism. Recall that Merchant’s e-GIVENNESS principle relies on semantic isomorphism between the antecedent VP and the elided VP; in other words, these two VPs have to be semantically equivalent in order for the application of VPE to take place. However, if semantic isomorphism is required to trigger VPE, then we cannot use VPE to derive sentences like (52b):

(102) Antecedent VP:.....[_{VP} ziji-de xiaohai [_{V'} song_{copy} Mali-de zhaopian]]]]]
 self-gen child send Mary-gen picture
 Elided VP: [_{VP} ziji-de xiaohai [_{V'} song_{copy} Xiaomei-de zhaopian_{copy}]]]]]
 self-gen child send Xiaomei-gen picture

As we can see in (102), the direct object in the antecedent VP is not semantically identical to the one in the elided VP, yet elision is still felicitous in this context. These facts cast doubt on the legitimacy of the analysis proposed in (98).

¹⁰ Bradley Larson (p.c.) pointed out that the analysis that I propose in (98) is in spirit similar to what Lasnik (1999) proposes for pseudogapping constructions like (i).

(i) The DA proved Jones guilty and the Assistant DA will ~~prove~~ Smith ~~guilty~~.

Lasnik proposes that *Smith* in (i) raises to the Spec of Agr_{OP}, so that *prove* and *guilty* can form a constituent and become subject to deletion.

I propose that, rather than abandoning the analysis proposed for these ‘objectless’ sentences, what is necessary here is to loosen the semantic requirement for applying VPE. Perhaps, rather than semantic isomorphism, it is structural entailment that is at stake when assessing the felicity of V-stranding VPE. That is, as long as the entailment of the antecedent sentence is equivalent to the entailment of the elided sentence, V-stranding VPE is permitted. Since both (52a) and (52b) contain the same verb, their entailments will both look like the one shown below.

(103) $\exists x \exists y \exists z. (z \text{ give } (y) (x))$

Modifying the analysis in this way allows us to specify that the exact contents of the verbal arguments will not be taken into consideration in determining when we should and should not implement VPE (cf. Goldberg 2005).

An additional benefit of the V-stranding VPE analysis, as G. Li (2002) mentions, is that it enables us to account for the unavailability of the adverbial reading in sentences like (45). Recall that Cheng’s (2013) claim that, if (45) were derived by VPE, it should encode the adverbial reading, since adverbs are assumed to adjoin to VP. With the help of the V-stranding VPE analysis that G. Li (2002) proposes, we can obviate this problem by attributing the absence of the adverbial reading to the fact that its adjunction site is *vP* rather than VP. In other words, unless the adverb itself appears overtly, its meaning will not be available in the sentence.

After solving the syntactic challenges that Cheng (2013) imposes, we need to turn to deal with his claim that Mandarin ‘objectless’ sentences cannot be treated as instances of VPE, since these sentences and their English VPE counterparts do not pattern alike with respect to interpretive possibilities.

First, Cheng (2013) argues that the second sentence in the following example has a sloppy reading, while its English counterpart does not; therefore, this sentence should not be considered an instance of VPE.

(48) a. Zhangsan chufa-le Zhangsan-de xuesheng. Lisi ye chufa-le [_{NP} e]. (Cheng 2013)

Zhangsan punish-ASP Zhangsan-GEN student Lisi also punish-ASP

‘*lit.* Zhangsan punished Zhangsan’s students. Lisi also punished e.’

b. Lisi also punished Lisi’s students.

I contend that this argument is simply not tenable, since (48a) and (48b) sound awkward and are not the sentences that speakers of Mandarin Chinese and English will use; the unacceptability of these two sentences can be attributed to violations of Binding Principle C.

In addition, Cheng replies on locality effects to determine the syntactic properties of ‘objectless’ sentences. For example, Cheng (2013) concludes that (46a), repeated below, cannot be treated as an instance of VPE because it permits a non-local sloppy reading.

(46) a. Mali wei-guo ziji-de haizi le. Sushan yiwei Wu ma ye wei-guo e le.

Mary feed-ASP self-GEN child ASP Susan think Wu nanny also feed-ASP ASP

‘Mary fed her own child, and Susan thought that Nanny Wu fed her child, too.’

b. Susan thought that Nanny Wu fed Susan’s child, too.

This example, in fact, is pragmatically biased in the sense that it incorporates a non-neutral nominal phrase, *Wu ma* ‘Nanny Wu.’ In the world we inhabit, it is known that a nanny’s job is to take care of someone else’s child rather than her owns, so it is not unexpected to see a sentence like (46a) where the null object, whose denotation is a child, is connected to someone other than the nanny. If *Wu ma* ‘Nanny Wu’ is replaced by a neutral lexical item, such as *Zhenni* ‘Jenny’, the locality effects will ‘resurrect’, meaning that the null object can only refer to Jenny’s child, rather than Susan’s. As a result, (46) cannot count as a true counter-example to VPE.

The last piece of evidence that Cheng introduces in favor of AE is repeated below:

- (42) a. Zhangsan da-le [_{NP} san-ge xuesheng] zhihou.....
 Zhangsan hit-ASP three-CL student after
 ‘After Zhangsan hits three students.....’
- b. Lisi haishi bu-gan da [_{NP} e].
 Lisi still not-dare hit
 ‘Lisi still does not dare to hit (the students that Zhangsan hit).’ (strict reading)
 ‘Lisi still does not dare to hit (other 3 students).’ (sloppy reading)
 ‘Lisi still does not dare to hit Zhangsan.’ (pragmatic reading)

Cheng claims that under the appropriate scenario, (42b) is allowed to have a third reading in which the null object refers to Zhangsan. In fact, many Mandarin-speaking people that I consulted (including myself) do not have access to the third reading; we prefer to insert the pronoun *ta* ‘him’ into the empty object position to derive the reading that Cheng desires. This fact, again, weakens Cheng’s argument against the application of VPE to such sentences.¹¹

Relying on the interpretive possibility of a particular construction, in fact, is not an ideal strategy to determine whether this construction is an instance of (V-stranding) VPE or not. Earlier work such as Huang (1991) and Otani and Whitman (1991) assimilate null object constructions in East Asian languages to English VPE constructions on the basis that these sentences display the strict and sloppy reading. Ai (2006) shows that English VPE constructions are not the only constructions that possess sloppy readings. De-accented VPs have this kind of reading as well (Tancredi 1992).

- (104) John₁ said he₁’s a genius because..... (Ai 2006)
- i) BILL₂ did _____. (VPE)
- ii) BILL₂ *said he’s a genius*. (VP deaccenting)

¹¹ It is also impossible for my consultants and me to have a third reading for G. Li’s (2002) examples shown in (68) and (70). Therefore, I do not attempt to come up with an analysis to account for the availability of such reading.

- a. = BILL₂ [said he₁'s a genius] *strict (he = John, as in the antecedent VP)*
- b. = BILL₂ [said he₂'s a genius] *sloppy (he = Bill)*
- c. ≠ BILL₂ [said he₃'s a genius] *no 'third party' reading (i.e. he = Fred)*

(104) shows that both VPE and de-accented VP sentences have the same interpretive possibility, which suggests that possessing the sloppy reading is not VPE's privilege; *do it/that* anaphora also behave in the same way:

(105) John₁ beat his₁ classmates, and Bill did it/that, too.

- a. = Bill₂ [beat his₁ classmates] *strict (his = John, as in the antecedent VP)*
- b. = Bill₂ [beat his₂ classmates] *sloppy (his = Bill)*
- c. ≠ Bill₂ [beat his₃ classmates] *no 'third party' reading (i.e. his = Fred)*

Therefore, it is not always appropriate to view a particular construction as an instance of VPE simply based on the fact that it has a sloppy reading. Likewise, the lack of a sloppy reading should not preclude a particular sentence from being an instance of (V-stranding) VPE; for instance, none of the 'objectless' sentences from (1) to (11) possesses a sloppy reading, yet, as I argue at length in this chapter, all of them should be considered being derived via V-stranding VPE, since they satisfy the most important requirement for the implementation of such a mechanism: structural parallelism built on verbal identity.

Another important factor to take into consideration before determining whether or not a particular language has V-stranding VPE is that language's degree of flexibility in dropping objects. In Chapter 2, I showed that dropping definite referential subjects and objects is not as straightforward as we might think in Mandarin Chinese, and proposed that some sentences that lack subjects should be analyzed as the result of verb or vP movement plus TP-ellipsis. In the earlier sections of this chapter, I argue that sentences devoid of definite and referential objects are licensed by structural parallelism which is better

characterized in terms of V-stranding VPE. Contrastively, Japanese seems to enjoy more freedom in dropping subjects or objects.

(106) Speaker A: I saw John and Mary yesterday. They walked hand in hand.

Speaker B: Tsukia-tte-i-ru no? (Japanese)

date-TE-exist.ANIMATE-NONPAST Q

‘Are [they] dating?’

Speaker B’: *(Tamen) zai jiaowang ma? (Mandarin Chinese)

they at dating Q

‘Are they dating?’

The topic of Speaker A’s utterance is *John* and *Mary*. As we can see above, the Japanese Speaker B can use a sentence in which the subject position is empty; on the contrary, the Mandarin Chinese Speaker B’ has to realize the subject overtly by using the pronoun *tamen* ‘they.’

One more example illustrating the difference between Japanese and Mandarin Chinese is given below.¹²

(107) Speaker A: Our little brother was crying this morning.

Speaker B: Really? What happened?

Speaker A: Chichi-ga shika-tta ka mo shir-e-mas-en.

Father-NOM scold-PAST Q also/even know-POTENTIAL-POLITE-NEG

‘Maybe Father scolded [our little brother].’

Speaker A’: *Baba jintian zaoshang ma-le e.

Father today morning scold-ASP

‘Father scolded [our little brother] this morning.’

¹² Thank Michael Erlewine (p.c.) for giving me the Japanese sentences in (106) and (107).

The topic of this dialogue centers on Speaker A and Speaker B's little brother, who was scolded by their father in the morning. Speakers of Japanese can omit the definite and referential object without arousing any confusion, whereas such a procedure is not allowed in Mandarin Chinese. Given the fact that structural parallelism does not exist between above sentences, (106) and (107) together suggest that AE happens more frequently in Japanese than in Mandarin Chinese, and call into question the alignment of Mandarin Chinese with Japanese with respect to the analysis proposed for 'objectless' sentences in these two languages.

In this section, I have provided a number of pieces of evidence to demonstrate that using sentences in which missing objects are referential and animate in Mandarin Chinese is permissible only when structural parallelism obtains between sentences, and proposed that V-stranding VPE provides the best account for this phenomenon. This analysis amounts to saying that a number of 'objectless' sentences in Mandarin Chinese are not genuine null-object sentences, since the canonical object position of these sentences, the complement position of V, remains filled with a nominal phrase.

3.5.3 Further discussion

Although the disappearance of definite referential objects is subject to structural parallelism in Mandarin Chinese, this does not mean that every null verbal object must conform to this restriction. Indefinite objects, whether animate or not, can appear null in a variety of environments.

- (108) Yuehan xiang ti ta nuer qing yi-wei gangqin jiajiao. Dan,
 John want for his daughter hire one-CL piano tutor but
 ta hai-mei zhao-dao e.
 he not-yet find-arrive
 'John wants to hire a piano tutor for his daughter, but he has not found [a piano tutor].'

The missing constituent in the second sentence corresponds to *yi-wei gangqin jiajiao* ‘a piano tutor’, which is neither definite nor referential. In addition, the grammaticality of this sentence does not seem to depend on structural parallelism, since the verbs in both clauses are not identical. These facts suggest that this sentence should be analyzed as containing a genuine null object.

Another type of sentence that is similar to but is slightly different from (108) is shown below.

- (109) Yuehan zuotian mai-le yi-ben shu. Ni xiang kan e ma?
 John yesterday buy-ASP one-CL book you want read Q
 ‘John bought a book yesterday. Do you want to read [the book that he bought]?’

Similar to (108), the verbs in the two sentences of (109) are different, so the formation of the second sentence cannot be taken to involve V-stranding VPE. However, (109) differs from (108) in that the missing element is definite, although it takes an indefinite object as its antecedent. This fact makes the missing object in the second sentence in (109) look like an E-type pronoun (Evans 1980 and Heim 1990).

The sentences seen above are also acceptable in Japanese. Tomioka (2003) proposes a unified analysis to deal with all null object sentences in Japanese, two of which are repeated here.

- (110) a. Ken-wa kuruma-a kat-ta. Erika-mo **pro** kat-ta.
 Ken-TOP car-ACC buy-PERF Erika-also buy-PERF
 ‘Ken bought a car. Erika bought (a car), too.’
 b. Hana-ga ataraii tokei-o katte-kureta-ga boku-wa sugu-ni
 mother-NOM new watch-ACC buy-gave-but I-TOP soon
 pro nakusite-somatta.
 lose-PERF
 ‘My mother bought me a new watch, but I lost (the watch she bought me) soon after.’

Although the null object in (110a) is indefinite and the one in (110b) is definite, both of these null objects take an indefinite nominal phrase as their antecedent. Tomioka (2003) proposes that the semantic variability of covert pronouns in Japanese can be boiled down to the possible interpretations of NPs in this language, and claims that there are only two types of anaphora: individual type (*e*) and property type ($\langle e, t \rangle$).

Putting aside the semantic computation of each null pronoun that Tomioka comes up with, what I would like to emphasize here is that we cannot analyze sentences that do not contain objects appropriately without taking into consideration the sentence preceding the ‘objectless’ one. For example, the following sequence of lexical items might be analyzed in several different ways, depending on what precedes it.

(111) V-stranding VPE sentences:

a. Yuehan zuotian kandao-le Mali.

John yesterday see-ASP Mary

‘John saw Mary yesterday.’

b. Ni kandao-le e ma?

you see-ASP Q

‘Did you see [Mary]?’

(112) Null object sentences:

Zuotian xiaoyuan-nei chuxian-le yi-zhi hen chou-de gou.

yesterday campus-inside appear-ASP one-CL very ugly-DE dog

Ni kandao-le e ma?

you see-ASP Q

‘An ugly dog appeared on campus yesterday. Did you see [it]?’

Based on the discussion laid out in this chapter, although the second sentences in (111) and (112) consist of the same lexical items, they should be understood as involving different types of mechanisms: (111) should be taken to involve V-stranding VPE, and (112) should be thought of as a genuine null object sentence.

This subsection resonates with the last one in Chapter 2, which also stressed the importance of sentences preceding ‘argumentless’ sentences. It seems that we must rely on a non-unified analysis to deal with sentences that do not have subjects or objects, since by doing so, we can characterize such sentences more accurately and more precisely than by trying to force all the possibilities within a single uniform analysis.

3.6 Conclusion

I began this chapter by considering situations in which it is appropriate to use sentences without objects in Mandarin Chinese; I listed several pairs of sentences to show that only when structural parallelism obtains between sentences, can an (animate and referential) object in the second sentence disappear. Starting from the observation that the examples that I gave looked like typical English VPE constructions, I began with a discussion of Merchant (2001), who proposes that VPE should be constrained by e-GIVENNESS. As for East Asian languages, I showed that Huang (1991) and Otani & Whitman (1991) support a VPE analysis of some ‘objectless’ sentences in Mandarin Chinese and Japanese, since null objects in these languages display similar interpretive possibilities to those found in English VPE constructions. However, later work such as Hoji (1998), Oku (1998), and Kim (1999) has shown that null object sentences in Japanese and Korean are not exactly equivalent to English VPE constructions. Cheng (2011, 2013), influenced by Hoji (1998), Oku (1998), and Kim (1999), argues that Mandarin null object sentences should also be viewed as AE constructions involving omission of an object at PF. However, Cheng’s analysis fails to account for the structural parallelism requirement imposed on Chinese null

object sentences. I based my analysis on G. Li's (2002) V-stranding VPE, arguing that this analysis enables us to better capture the relation between an antecedent sentence and a following 'objectless' sentence. In addition, I demonstrated that some sentences that Cheng (2013) uses to support AE cannot count as real counterexamples to V-stranding VPE. Instead, such sentences should be taken to argue in favor of the V-stranding VPE analysis, since they do involve the omission of a large constituent, VP.

So far, I have zeroed in on sentences in which the antecedent or the co-referential element of the apparent empty category is absent in the same sentence. In the next chapter, I shift my focus to sentences that contain not only the empty category itself but also that category's co-referent, and discuss in depth whether there is any limitation on the use of such sentences.

CHAPTER 4

LICENSING SUBJECT *PRO*

4.1 Introduction

Sentences containing missing arguments can be divided into two main sub-groups: those that include the antecedent of the missing arguments and those that do not. Chapter 2 and Chapter 3 provided different means to account for the latter type of sentence. To recap, in Chapter 2, I claim that we cannot simply characterize a particular empty category as *pro* or a variable without taking into consideration the context in which it appears. I first show that dropping arguments in Mandarin sentences is not as straightforward as we might think, and then argue that the empty subject positions in a number of sentences are only apparent, in the sense that the perceived gaps are a side effect of verb or *vP* movement followed by TP-ellipsis; in other words, these sentences are not null-subject sentences at all. In Chapter 3, I provide a number of examples to illustrate that only when structural parallelism obtains across speakers can objects in the following sentences be ‘omitted.’ Given the fact that verbal identity has to be respected and the fact that this situation can only be dealt with in terms of Merchant’s (2001) *e*-GIVENNESS, I adopt the V-stranding VP-ellipsis analysis to account for the derivation of these ‘objectless’ sentences. This analysis amounts to saying that these ‘objectless’ sentences are not null-object sentences, since the elided constituent is a VP rather than an NP/DP in object position.

In this chapter, I turn to sentences that contain both empty categories and their antecedents. More specifically, I consider sentences in which the empty category and its antecedent are located in different clauses in a sequence of sentences. One example is given below.

- (1) Yuehan_i hen congming, suoyi e_i yiding keyi jin hen-hao-de daxue.
John very smart so definitely can enter very-good-DE university.

‘John is very smart, so he can definitely enter a good university.’

In Chapter 2, I gave a number of pieces of evidence showing that the availability of a discourse topic generated across speakers is not sufficient to license an empty argument position. However, the grammaticality of sentences like (1) seems to suggest that we still need to rely on the topic-hood of a nominal phrase to retrieve the content of the empty category: i.e., it is possible to attribute the acceptability of the use of the empty subject position in (1) to the presence of the discourse topic *John* in the first sentence. As I will show, this analysis is both correct and incorrect: it is correct because the licensing of empty categories like the one in (1) is indeed associated with an element of CP; it is incorrect in that only certain elements in the left periphery of the clause can serve as antecedents to an empty category. There is a significant difference between sentences like (1) and those mentioned in Chapter 2: (1) is part of a monologue, meaning that both sentences are uttered by the same person, while the clauses discussed in Chapter 2 were contained in a dialogue, meaning that the sentences containing empty categories and the antecedents to those categories were uttered by different people.

In this chapter, I argue that whether or not an empty category and its antecedent are uttered by the same person affects the acceptability of null elements such as subject *pro* in Mandarin Chinese. In addition, I extend the analysis of the Mandarin data to account for a difference between Italian, Japanese, and Mandarin Chinese. As we will see shortly, speakers of Italian and Japanese are unrestricted in their use of subject *pro*, as long as what is being discussed is pertinent to the topic of the discourse; however, speakers of Mandarin Chinese cannot use subject *pro* so freely. At the end of this chapter, I propose that this cross-linguistic difference can be tackled by appealing to the analysis of Mandarin-internal phenomena alluded to in the last paragraph.

This chapter is organized as follows. In Section 4.2, I discuss the uses of Mandarin Chinese subject *pro* in detail, and point out the restrictions imposed on the use of such empty categories. Section 4.3 reviews Frascarelli (2007), Roberts (2010), and Sigurðsson (2011): Frascarelli (2007) proposes a novel analysis which does not rely on the verbal inflectional morphology to account for the licensing condition

of subject *pro* in Italian; Roberts (2010), based on Cardinaletti & Starke (1999) and Holmberg (2005), proposes that subject *pro* is a weak pronoun and becomes subject to deletion after it Agrees with T, which is assumed to bear a D-feature; Sigurðsson (2011) attributes the appearance of null arguments in many languages to the successful establishment of a connection between an empty category itself and a feature in the left periphery of the clause. With these three papers as a backdrop, in Section 4.4, I propose that the appearance of a null subject in Mandarin is dependent on the existence of a covert topic in the CP domain, which serves as a bridge connecting the null subject and its antecedent, and address the issue of why Mandarin Chinese and Italian behave so differently in licensing the use of subject *pro*. In the last part of this section, I broaden my scope to consider the relevant phenomenon in Japanese, and show that, surprisingly, Japanese behaves more like Italian than Mandarin Chinese in its use of subject *pro*, although Italian is an agreement language while Japanese is not. In order to account for the cross-linguistic differences with respect to retrieving the content of subject *pro*, I propose a parameter that classifies the covert topic Agreeing with subject *pro* into two types: one with inherently valued ϕ -features and the other one without them. Section 4.5 concludes.

4.2 Subject *pro* in monologues

In order to facilitate the discussion in this section, recall the following observations first made in Chapter 2: (i) a discourse topic alone is not sufficient to license an empty subject or object position in a Chinese sentence; (ii) in general, the subject position itself cannot be left empty, and the apparent empty subject positions in some sentences are a side effect of the deletion of TP, which erases all of the arguments of verbs.

The discussion in Chapter 2 suggests that the availability of a topic does not help to identify a null argument, so sentences containing such empty categories are not acceptable. This fact casts doubt on Huang's (1984) analysis that an empty argument position is bound by a discourse topic when its

antecedent is not overtly present in the same sentence. Before jumping to the conclusion that Huang's (1984) topic-variable analysis is not tenable, however, we have to look at another type of sentence in which null subjects *do* appear without the presence of an antecedent in the same clause.

Recall that in section 2.3.2, following Frascarelli and Hinterhölzl (2007), I demonstrated that a discourse topic derived from dialogue is unable to license an empty argument position. However, a dialogue is not the only topic-generating device; a monologue can have the same effect. When a person utters the following sentence, the subject, *John*, becomes the topic of his/her utterance.

(2) Yuehan hen congming.

John very smart

'John is very smart.'

If the speaker of (2) keeps talking about *John*, the subject position of the subsequent sentence can be left empty.

(3) Yuehan_i hen congming, suoyi e_i yiding keyi jin hen-hao-de daxue.

John very smart so definitely can enter very-good-DE university

'John is very smart, so he can definitely enter a good university.'

(3) consists of two clauses: the first one introduces a characteristic of John, and the second one reveals the speaker's attitude towards him. This sentence differs from those discussed in Chapter 2 in that the antecedent of the empty category – the subject of the first clause – and the empty category itself belong to the same sentence. In order to make this contrast clearer, one of the examples from Chapter 2 is repeated below.

(4) Context containing a Familiar topic:

Speaker A: John_i not only always comes to class on time, but also gets an A in every subject.

Most importantly, he is very humble.

Speaker B: *Suoyi e_i chang dang ban-zhang.

so often serve-as class-president

‘So, [he] often serves as the class president.’

In (4), unlike in (3), the empty category and its antecedent are located in different sentences. Furthermore, the fact that (3) is uttered by a single person while (4) is uttered by two different people suggests that an empty subject position can only be licensed in monologues.¹

Although monologues can contain empty subject positions, this does not necessarily mean that this empty category should be understood as a genuine covert pronominal. As I have demonstrated in earlier chapters, there are different ways to account for the absence of verbal arguments in a sentence; some are real covert pronominals, some are the result of movement, and others are derived via ellipsis of various kinds. It is obvious that sentences like (3) cannot be dealt with using the analysis proposed in Simpson (to appear), since the second sentence contains not only the verb but also an adverb and the verb’s internal argument. Thankfully, there is another analysis available for sentences like (3) in which one subject position is empty.

¹ The dichotomy between monologue and dialogue that I claim to be crucial in the creation of null-subject sentences in Mandarin Chinese is a generalization. Andrew Simpson (p.c.) pointed out that in some cases, subject *pro* seems able to be licensed across speakers.

(i) Speaker A: Zhangsan_i shi yi-ge hen hao-de ren.
 is one-CL very nice-DE person
 ‘Zhangsan is a nice person.’

Speaker B: *pro*_i ye shi yi-ge hen congming-de ren.
 also is one-CL very brilliant-DE person
 [He] is also a brilliant person.

The above dialogue is acceptable, yet the subject position in the sentence uttered by Speaker B can be left empty, which seems to be contradictory to the claim that I make here. However, this dialogue differs from the ones we saw earlier, such as (4) above, in that Speaker B’s utterance can be considered an extension of Speaker A’s, which is attributable to the presence of *ye* ‘also.’

(5) Some had ordered mussels, and others swordfish.

(6) a. Yuehan_i hen congming, suoyi e_i chang na diyi-ming.
John very smart so often get first-prize
'John is very smart, so he often gets the first prize.'

b. Yuehan_i t_i hen congming, suoyi t_i chang na diyi-ming.
John | very smart so | often get first-prize
↑

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- (7) Yuehan_i hen congming, suoyi dang [e_i kao-shang tai-da]-de
 John very smart so when test-on Taiwan-University-DE
 xiaoxi bei laoshi xuanbu hou, dajia yi-dian dou bu yayi.
 news BEI teacher announce after everyone one-dot all not surprised
 ‘John is very smart, so when the news that he passed the exam to enter National Taiwan
 University was announced by the teacher, no one was surprised at all.’

In (7), the empty category is contained within a complex NP island residing in a subject position. If the empty subject in this case were the result of movement, Subjacency effects should render this sentence unacceptable. Contra this prediction, the sentence is grammatical. This fact suggests that we cannot rely on a movement analysis to derive these empty subject positions. On the other hand, if the null subject is a *pro*, then the grammaticality of this sentence is expected, since *pro* does not move. Another example is given below.

- (8) Yuehan_i zuotian xiawu hen e, suoyi [yi e_i hui-dao jia
 John yesterday afternoon very hungry so once return-arrive home
 hou], e_i jiu xian chi-le yi-ge sanmingzhi.
 after then first eat-ASP one-CL sandwich
 ‘John was very hungry in the afternoon yesterday, so once he got home, he immediately ate a
 sandwich.’

This sequence of sentences contains two empty subject positions. The first one appears in an adjunct island, and the second is in a main clause. Given the fact that the subject position can be null in an adjunct clause, I conclude that movement is not responsible for creating this empty position, and propose that these empty categories are better analyzed as *pro*.

So far, we have seen examples in which one of the subject positions in a sequence of sentences can be left empty. Comparing these sentences to those in section 2.3.2, we find that sentences that can accommodate empty subject positions share one property: they occur in monologues. If a topic generated in a dialogue cannot license an empty subject position but a topic generated in a monologue can, we should expect that, if we recast the two sentences in (7) as a conversational exchange between two different people, the empty subject position in the second sentence will no longer be licit. This prediction is borne out.

(9) Speaker A: Yuehan_i hen congming.

John very smart

‘John is very smart.’

Speaker B: Suoyi dan [*^{/??}(ta_i) kao-shang tai-da]-de xiaoxi

so when test-on Taiwan-University-DE news

bei laoshi xuanbu hou, dajia yi-dian dou bu yayi.

BEI teacher announce after everyone one-dot all not surprised

‘So when the news that he passed the exam to enter National Taiwan

University was announced by the teacher, no one was surprised at all.’

(7) and (9) constitute a minimal pair, in the sense that the pair of sentences in (7) is uttered by a single person, while the same two sentences are uttered by different speakers in (9). The unacceptability of the empty subject positions in (9) demonstrates that *pro* cannot be licensed across speakers. In other words, it appears that, in Mandarin Chinese, *pro* can only be licensed intra-sententially rather than extra-sententially. This means that, as long as a subject position in a sentence can find an antecedent in its ‘neighborhood’, it can be phonetically null. This fact resonates with Chomsky’s (1981) admonition.

(10) Avoid Pronoun:

Avoid overt pronoun, whenever possible.

Pronouns serve to help interlocutors keep track of who or what is being talked about. (10) can be understood as the injunction that, provided we can recover the content of the topic without difficulty, we should not use pronouns; however, if the topic requires emphasis or is not easily recoverable, pronoun use is necessary. Although English does not drop pronouns freely, the spirit of Avoid Pronoun seems to be preserved in Mandarin Chinese. Take (8) as an illustration: the speaker's choosing not to utter the subject overtly in the second and third sentences suggests that he believes that the addressee will have no difficulty in identifying the referent of the missing subjects based on the present discourse context.

The phenomenon discussed above seems straightforward, but in fact, the use of subject *pro* in Mandarin Chinese is not without restriction. In the following subsection, I address the issue of the interpretation of subject *pro* in Mandarin Chinese.

4.2.1 Restrictions on interpreting subject *pro*

Each of the examples we saw above consists of two smaller sentences: the first provides the background information that feeds the second one. In addition, all the first sentences that we have seen so far have been built on intransitive predicates, which means that only one nominal phrase appears. In fact, transitive verbs can also appear as matrix predicates to such sentences.

- (11) Yuehan_i zuotian yujian-le Mali_j, suoyi e_{i/*j} hen kaixin.
John yesterday meet-ASP Mary so very happy
'John ran into Mary yesterday, so he was very happy.'

The main verb in the first sentence of (11) is transitive, so it selects two nominal phrases; one is in the subject position, and the other is in the object position. Although there are two nominal phrases in the first sentence, the only possible interpretation of the second sentence is one in which the empty subject position is co-referential with the matrix subject, rather than with the object of the preceding sentence. This implies that an empty subject position is unlikely to be related to a constituent that occupies a non-subject position. The following sentence confirms this assumption.

- (12) #Yuehan_i gei-le Mali_j yi-wan yuan, suoyi e_j juede hen kaixin.
 John give-ASP Mary 10000 dollar so feel very happy
 Intended reading: ‘John gave Mary 10000 dollars, so she felt very happy.’
 Real reading: ‘John gave Mary 10000 dollars, so he felt very happy.’

Mary is the direct object of the verb in the first sentence of (11), and an indirect object in (12). The ideal interpretations of these two sentences suggest that a constituent can only serve as the antecedent of a null subject in a subsequent sentence if it resides in subject position. In other words, we can recover the content of an empty subject position only from another subject position. This analysis gains support from the fact that, if we are provided with a context in which John is known for being a generous person and feels happy every time he helps others, then (12) is felicitous with the empty subject position referring to *John*. Another example demonstrating the prominence of the subject position is given below.

- (13) #Yuehan_i shu-gei-le Bier_j, suoyi e_j hen kaixin.
 John lose-to-ASP Bill so very happy.
 ‘John was defeated by Bill, so Bill was very happy.’

In a competition, winners are usually those who feel happy. If we want to say that Bill feels happy after defeating John in a sentence like (13), we cannot drop the subject in the second sentence. Instead, we

have to fill the empty subject position in the second clause with an overt pronoun *ta* ‘he.’ The one way to use a null subject that refers to the winner *Bill* in the second sentence is to change the predicate in the first sentence.

- (14) Bier_i jibai-le Yuehan_j, suoyi e_i hen kaixin.
 Bill defeat-ASP John so very happy.
 ‘Bill defeated John, so he felt very happy.’

(14) is semantically equivalent to (13) in that Bill is the winner and John is the loser, but it differs syntactically in that the proper name *Bill* in (14) is in the subject position. In addition, (14) shows that the use of a different predicate allows the subject position of the second sentence to be left empty. This minimal pair of sentences further demonstrates that the subject position of a sentence can be left empty if and only if its antecedent is located in an earlier subject position.

Second, not only singular nominal phrases but also plural ones can serve as antecedents of an empty subject position.

- (15) Yuehan_i han Mali_j mei-tian dou hen nuli gongzuo, suoyi e_{i+j} henshao
 John and Mary every-day all very hard work so seldom
 dai zai jia.
 stay at home.
 ‘John and Mary work very hard every day, so they seldom stay at home.’

The subject of this sentence is the conjoined nominal phrase, *John* and *Mary*, and the only possible interpretation of the sentence as a whole is one in which the null subject in the second sentence refers to both *John* and *Mary*. Another example is given below:

- (16) Yuehan_i han Mali_j qu-nian zhuan-le hen duo qian, suoyi e_{i+j}
 John and Mary last-year make-ASP very much money so
 jin-nian-chu jiu mai-le yi-dong fangzi.
 this-year-beginning then buy-ASP one-CL house
 ‘John and Mary made a lot of money last year, so they bought a house in the beginning of this year.’

Like (15), (16) has only one interpretation, in which the null subject in the second sentence is co-referential with both *John* and *Mary*. Both (15) and (16) share one property: neither *John* nor *Mary* individually can serve as the antecedent of the null subject in the second clause. These two sentences, in conjunction with those we saw earlier, demonstrate that a prior subject position plays an important role in helping speakers of Mandarin Chinese retrieve the content of a subsequent empty subject position.

Although an overt subject in the preceding sentence is required in order to identify the null subject in a subsequent sentence, the appearance of such a constituent does not always guarantee the legitimacy of the use of *pro* in a sentence uttered later.

- (17) *Yuehan hen comgming, suoyi laoshi renwei e_i keyi kao-jin tai-da.
 John very smart so teacher think can test-enter Taiwan-University
 ‘John is very smart, so the teacher thinks that he can pass the exam to enter National Taiwan University.’

According to the generalization that we made earlier, this sentence is supposed to be acceptable, since it satisfies the two conditions mentioned above for the use of subject *pro*: (i) it is in a monologue, and (ii) the referent of the null subject is in subject position. However, the surprising unacceptability of (17) indicates that further conditions are necessary to constrain the appearance of subject *pro* in Mandarin Chinese.

A clear contrast emerges if we compare (17) to (1): in (17), an additional subject intervenes between the empty subject position and its antecedent, whereas in (1), no such constituent appears. This observation implies that a null subject requires a local rather than a more distant subject as its antecedent. Given this fact, we expect (7) to become degraded when the voice of the second sentence turns active.

- (18) *Yuehan_i hen congming, suoyi dang laoshi xuanbu [e_i kao-shang
 John very smart so when teacher announce test-on
 tai-da]-de xiaoxi hou, dajia yi-dian dou bu yayi.
 Taiwan-University-DE news after everyone one-dot all not surprised
 ‘John is very smart, so when the teacher announced the news that he passed the exam to enter
 National Taiwan University, no one was surprised at all.’

(18) differs from (7) in that the second sentence in (18) is in active voice, while the second sentence in (7) is passive. This difference in voice has two consequences. The first concerns word order: in (7), the theme occupies the preverbal subject position, whereas in (18), it follows the verb; conversely, in (7), the agent follows the verb, whereas in (18) it precedes the verb. The second consequence is associated with acceptability: (18) is less acceptable than (7). In other words, if we compare (18) to (7), we find that the unacceptability of (18) can be attributed to the fact that the agent *laoshi* ‘the teacher’ appears between the empty subject position and its antecedent *Yuehan* ‘John.’ This pair of sentences, coupled with (17) and (1), suggest that an empty subject position has to establish a connection with its closest available overt antecedent.

An intervening nominal phrase is not the only obstacle to the use of subject *pro* in Mandarin Chinese. It is also unacceptable to stack too many sentences within a single monologue in which all the subject positions are left empty.

(19) #Yuehan_i shi yi-ge hao xuesheng. *pro*_i mei-tian budan zhuen-shi
 John is one-CL good student every-day not-only on-time
 dao xuexiao, *pro*_i haihui bang tongxue dashao jiaoshi. Chiwai,
 arrive school but-also help classmate clean classroom in-addition
 mei-wan zai *pro*_i shejjiao qian, *pro*_i yiding hui ba zuoye
 every-night at sleep before must will BA homework
 xie-wan.
 write-finish

‘John is a good student. He not only goes to school on time every day, but also helps his classmates clean the classroom. In addition, he must finish his homework before going to bed every night.’

Although it is obvious that the topic of the sequence of sentences in (19) is *John*, and this utterance is in a monologue, we still cannot leave all of the subject positions empty. This fact illustrates that the use of subject *pro* is subject to some condition concerning the distance over which the connection can be maintained between an empty category and its overt antecedent.

Taking all of the facts discussed so far into consideration, we can derive the following properties of subject *pro*:

(20) Properties of subject *pro*:

- (i) Subject *pro* can only be licensed in a monologue, and cannot be used recursively across multiple sentences.
- (ii) Subject *pro* has to have as its antecedent a constituent located in subject position.
- (iii) Subject *pro* can only be identified with the closest overt subject in the same sentence.

Given these facts, I conclude that speakers of Mandarin Chinese do indeed use subject *pro*, but only in monologues in which the antecedent of the empty category appears in the immediately preceding clause. Before providing an account of this phenomenon, let us look at Frascarelli (2007), Roberts (2010), and Sigurðsson (2011).

4.3 Earlier analyses

The above discussion concerning appropriate uses of subject *pro* in Mandarin Chinese is intriguing in the sense that it not only shows that subject *pro* does exist in this language, but also illustrates that using such an empty category is subject to various constraints. Before laying out my analysis of this phenomenon, I would first like to discuss three papers, Frascarelli (2007), Roberts (2010), and Sigurðsson (2011), whose analyses will give us a direction from which to approach relevant issues in Mandarin Chinese.

4.3.1 Frascarelli (2007)

Linguists usually attribute the appearance of null subject sentences in Romance languages like Italian and Spanish to the availability of a rich inflectional system. According to Rizzi (1986), the use of *pro* is constrained by the following conditions:

- (21) a. Formal licensing:

pro is Case-marked by X^0 .

- b. Identification:

Let X be the licensing head of an occurrence of *pro*: then *pro* has the grammatical specification of the features on X coindexed with it.

The Formal licensing condition states that *pro* has to be governed by a specific head, which is usually AGR or INFL, in Romance languages; as for the Identification condition, it mandates that *pro* has to acquire its content from its governing head, which means that AGR/INFL additionally provides us with clues to understand what or who *pro* refers to.

The fact that the *pro*-drop phenomenon is observable in Romance languages gives rise to a consensus for identifying *pro*: to some extent the identification of *pro* must be associated with inflectional morphology. However, Frascarelli (2007) offers a novel analysis, arguing that the content of *pro* in Italian is determined by something other than AGR/INFL.

Based on Frascarelli and Hinterhölzl's (2007) discussion of different types of topics, Frascarelli (2007) claims that the left periphery of a clause should be decomposed into a number of layers of projections:

(22) [ForceP [ShiftP [GP [ContrP [FocP [FamP [FinP

Given the fact that Aboutness-shift topics, Contrastive topics, and Familiar topics exhibit different semantic and phonological properties, Frascarelli (2007) proposes that each of these topics should have its own projection. Among the projections shown in (22), three are pertinent to our discussion: ShiftP, which refers to the projection hosting the Aboutness-shift topic, ContrP, taken to include the Contrastive topic, and FamP, standing for the projection embedding the Familiar topic.²

Frascarelli (2007) provides some examples to demonstrate that the use of *pro* in Italian is contingent on the availability of an Aboutness-shift topic. One of these examples, in which the speaker is talking about her boss, is reprinted below:

² GP in (22) stands for the 'Ground Phrase' projection (Poletto and Pollock 2004), which is a functional projection in the CP domain hosting presupposed information.

(23) *[il mio capo]_i come diceva Carlo [...] pro_i è un exreporter [...] pro_i è stato in giro per il mondo [...] pro_i mi ha preso in simpatia solo che siccome pro_i è mostruosamente lunatico, è capace che domani non gli_i sto più simpatica e pro_i mi sbatte fuori [...] comunque a parte questo pro_i mi diverte moltissimo – poi c'è M.F._k che è questo che appunto sta facendo tipo praticantato per poi andare a fare l'esame da giornalista/ fra un anno e mezzo quindi lui_k c'ha quanto meno la garanzia che pro_k può rimanere lì finché pro_k non farà l'esame cioè ehm lui_i poi gli deve fare/ scrivere le referenze... ..*

[My boss]_i as Carlo used to say [...] pro_i is a former reporter [...] pro_i has been all over the world [...] pro_i likes me, however, as pro_i is extremely moody, maybe tomorrow pro_i does not like me any longer and pro_i fires me [...] anyway, apart from this, pro_i is really funny – then there is M.F._k who is practicing for his exam as a journalist/ in one and a half years, so at least he_k has a guarantee that pro_k will stay there till pro_k has made the exam because he_i then must make/ write a report...

il mio capo 'my boss' is considered an Aboutness topic, since it is the element that is newly introduced into the utterance. As we can see in this example, after this Aboutness topic becomes available, the arguments in the subject positions of the subsequent sentences can be 'realized' as *pro*. In the middle of the monologue, a new topic, M.F., comes in, and serves as the antecedent of the following null subjects. If we pay attention to the second half of the utterance carefully, we will find that the first subject position after the sentence containing M.F. is not empty, but occupied by an overt pronoun *lui* 'he.' The same overt pronoun appears again in the end of the utterance when the speaker turns back to talk about her boss.

The use of *lui_k* in the utterance seems unnecessary, since its referent, M.F., has just appeared in the sentence immediately preceding it. Based on the fact that the tonal contour of *lui* 'he' is similar to that of *capo* 'boss', Frascarelli (2007) proposes that the appearance of the overt pronoun signals the beginning of the topic chain, so that the subject(s) appearing afterwards can be phonetically null.

Putting aside the function of the strong pronoun *lui* in the above example, it is obvious that each null subject is identified with the closest Aboutness topic. However, connecting an Aboutness topic to a null

subject is not a move that is restricted to monologues. In Italian, unlike in Mandarin Chinese, such connections can take place across speakers as well.

(24) A *che strada hai preso?*

B *la Cristoforo Colombo [andando verso Roma], dopo di che dovevo girare a destra dovevo riuscire a beccare la “Roma-Fiumicino” - m’aveva detto Marco_k e invece.....*

A secondo me la **Roma-Fiumicino_z** sta sulla sinistra

B *non lo so – comunque **pro_z** non c’era dopo di che ho capito che lui_k m’aveva detto – **pro_k** mi aveva dato una dritta che l’uscita era – **pro_k** dice – vicino allo Sherat – dietro allo Sheraton [...] a un punto dicevo possibile che non c’è un’inversione di marcia? mi sono fermata presa dal panico a un **benzinaio_j** e gli ho detto scusi ma se uno_w poveraccio sbaglia qui come **pro_w** fa a tornare indietro e lui_j m’ha detto no guarda devi uscire a Maccarese paghi il pedaggio e torni indietro.*

A Which road did you take?

B the “Crisoforo Colombo” [going towards Rome], then I had to turn right to take the “Rome-Fiumicino” motorway – Marco_k told me, but.....

A In my opinion the Rome-Fiumicino_z motorway is on the left

B I don’t know – anyway, **pro_z** was not there, then I understood that he_k had told me – **pro_k** has suggested me – **pro_k** had told me that the exit was next to the Sheraton hotel [...] then I wondered, is it possible that there is not a U-turn? In the panic, I stopped at a **gas station_j** and I said, sorry but if one_w, poor guy, goes the wrong way here, how can **pro_w** come back? and he_j [the person working at the gas station] told me, look you must take the exit at Maccarese, pay the toll and turn back.

This conversation occurs between two people. In Speaker B’s final utterance, the first null subject, labeled *pro_z*, is co-referential with the motorway mentioned by Speaker A. Later, in order to refer to the

person, *Marco*, who was introduced into the dialogue earlier, Speaker B used another null subject, *pro_k*, following the strong pronoun *he_k*. The use of null subjects, *pro_z* and *pro_k*, in this case conforms to the proposal that Frascarelli makes in her paper: subject *pro* has to be co-referential with the closest Aboutness topic, either covert or overt.

This analysis, however, raises a question concerning the status of the overt nominal phrase that serves as the antecedent for subject *pro*: if subject *pro* can only be associated with an Aboutness topic, how should we understand the syntax of the preverbal subject that is co-referential with subject *pro*? Is it in an A'-position or is still in an A-position? In order to demonstrate that the nominal phrases that serve as antecedents of referential *pro* are located in A'-position, Frascarelli (2007) employs the diagnostics mentioned in Alexiadou and Anagnostopoulou (1998) (henceforth A&A 1998) to determine whether Italian patterns like Greek with respect to the properties of preverbal nominal phrases.

A&A (1998) use several pieces of evidence to support the idea that, in Greek, preverbal subjects occupy an A'-position, since they behave differently from postverbal subjects. The first piece of evidence concerns the scope properties of quantifier phrases.

- (25) a. Kapios fititis stihiothetise kathe arthro.
 some student filed every article
 b. stihiothetise kapios fititis kathe arthro.

A&A (1998) claim that Greek is different from English in that preverbal indefinites, like *some student* in (25a), have only a wide scope reading; the narrow scope reading is only available to sentences like (25b), in which the indefinite appears postverbally. This fact leads the authors to propose that, “if preverbal subjects in Greek were raised to an A-position, they would preserve their narrow scope interpretation (A&A 1998: 505).” Since the narrow scope interpretation is not preserved, they analyze the preverbal nominal phrase as an A'-constituent.

Along the same line, Frascarelli (2007) notices that preverbal subjects in some Italian sentences have only one interpretation as well.

- (26) Qualche studente ha archiviato ogni libro della biblioteca.
 some student have.3SG filed every book of-the library
 ‘Some student filed every book in the library.’

According to Frascarelli, this sentence is ambiguous, since the quantifier phrase *some student* can take wide scope or narrow scope. However, when the same sentence is followed by another one containing subject *pro*, only the wide scope reading is maintained.

- (27) [Qualche studente]_K ha archiviato ogni libro della biblioteca e
 some student have.3SG filed every book of-the library and
*pro*_K è stato premiato.
 be.3SG been prized
 ‘Some (specific) student filed every book in the library and got a prize.’

In (27), the narrow scope reading of the quantifier phrase *qualche studente* ‘some student’ is not available, and only the wide scope reading remains. Another example is given below.

- (28) Un poliziotto stave a guardia di ogni angolo.
 a policeman be.PAST.3SG at guard of every corner
 ‘A policeman guarded each corner.’

- (29) Un poliziotto_K stave a guardia di ogni angolo e *pro*_K
 a policeman be.PAST.3SG at guard of every corner and

and implies that the meaning of *pro* cannot be completely computed until the CP domain is reached.³ In other words, the meaning of *pro* is dependent on the existence of an Aboutness topic in the CP domain.

Therefore, Frascarelli (2007) re-phrases Chomsky's Avoid Pronoun as follows:

(31) Avoid Pronoun (Frascarelli 2007:719)

Avoid strong pronoun, whenever it agrees with the local Aboutness-shift Topic.

The new interpretation of 'Avoid Pronoun' implies that "every predicative sentence must have a Topic" (Lambrecht 1994) so that the referential subject *pro* can find a constituent to Agree with.⁴

To sum up, Frascarelli (2007) proposes that the content of a referential subject *pro* should be determined by a constituent in its CP domain. In addition, when an overt preverbal nominal phrase serves as the antecedent of a subject *pro*, it must be considered an A'-element—an Aboutness topic, rather than a canonical subject in A-position.

4.3.2 Roberts (2010)

Under the Minimalist framework (Chomsky 1995, 2000, 2001), Rizzi's (1986) identification condition shown in (21b) can be paraphrased as follows: in the beginning of the derivation, AGR/INFL has valued ϕ -features, while *pro* has unvalued ones. Given the assumption that Agree takes place between elements bearing valued and unvalued features, AGR/INFL enters into an Agree relationship with *pro*, valuing its ϕ -features. However, Holmberg (2005) points out that this analysis is problematic from the Minimalist perspective, since it is usually assumed that ϕ -features on nominals are inherently valued, while those on

³ Camacho (2011) agrees with Frascarelli (2007) in that *pro* should be identified with the help of a discourse topic, but departs from her in claiming that AGR/INFL is still responsible for valuing some of *pro*'s features.

⁴ The assumption that every predicative sentence must have a topic does not mean that an overt topic has to appear in the CP domain in every sentence. Frascarelli (2007) states that 'once (a topic is) established, it can be kept continuous and silent across sentences.'

functional heads are unvalued. Following this line of reasoning, *pro* is expected to bear valued interpretable ϕ -features, and AGR/INFL to bear unvalued uninterpretable ones, which in turn suggests that it should be *pro* that identifies the featural content of AGR/INFL, rather than the other way around.⁵ In order to solve this ‘identification’ problem, Holmberg (2005) proposes the following hypotheses:

- (32) *Hypothesis A:* in null-subject languages, the ϕ -features of T are interpretable. SpecTP is therefore either absent or filled by an expletive (depending on whether T’s EPP-feature needs to be satisfied independently of its ϕ -features).
- Hypothesis B:* *pro* has interpretable features, occupies SpecTP and functions just like an overt pronoun. That *pro* is silent is thus a PF matter.

Each hypothesis makes different predictions. For instance, if we can find a language in which overt expletives and referential null subjects are mutually exclusive, then Hypothesis B will be favored. Holmberg (2005) demonstrates that Finnish is a language with both overt expletives and referential *pro*.

- (33) a. Puhun englantia.
 speak-1SG English
 ‘I speak English.’
- b. Sitä meni nyt hullusti.
 EXP went now wrong
 ‘Now things went wrong.’

(33a) is a sentence with a referential null subject, while (33b) is taken to contain an overt expletive *sitä*.

⁵ Chomsky (1995) claims that an uninterpretable feature makes a constituent ‘active’, able to function as a probe searching for a matching goal in the lower part of the construction. The distinction between interpretable and uninterpretable features, and the relation between (un)interpretability and (un)valuedness of features, are important in the Minimalist Program. Please also refer to Pesetsky and Torrego (2006, 2007) for a discussion of relevant issues.

Holmberg (2005) shows that a referential null subject and the expletive *sitä* cannot appear in the same sentence, offering evidence that Hypothesis B is superior to Hypothesis A.

- (34) a. **Sitä* puhun englantia.
 EXP speak-1SG English
- b. *Oletteko* (**sitä*) käyneet Pariisissa?
 have-2Pl-Q EXP visited Paris

Roberts (2010) mentions another important assumption made in Holmberg (2005), which concerns the classification of null subjects. Holmberg (2005) divides null subjects into three types:

(35) Three types of null subjects:

- (i) A null weak pronoun.....specified for ϕ -features but lacking D and therefore incapable of (co)referring, without the help of a D-feature in I.
- (ii) Another type of null subject is a DP that is deleted under the usual conditions of recoverability.
- (iii) A third type is the classical *pro*.....a bare, ϕ -featureless noun.

The first type of null subjects is the kind found in Romance languages; the second type corresponds to the one in languages like Finnish; the third one is said to exist in East Asian languages like Japanese and Mandarin Chinese. More specifically, Holmberg (2005) proposes that it is the question of T's a D-featural content that distinguishes the first type of null subject from the second type; the null subject found in Italian and Spanish is considered a weak pronoun, i.e. a 'deficient pronoun that receives the ability to refer to an individual or group from I containing D (Holmberg 2005: 556).' On the other hand, I/T in languages like Finnish does not have a D-feature.

The crucial part of Roberts' (2010) analysis is that subject *pro* in consistent null-subject languages is considered a defective goal due to the presence of a D-feature on T. A defective goal should follow the generalization shown below.

(36) Defective goals always delete/never have a PF realization independently of their probe.

Roberts' idea is that the relation between the referential pronoun in subject position, which is a defective goal, and its probe T, should be treated on a par with the one between (higher and lower) copies. More specifically, this analysis means that, once the defective goal and its probe share the same features after Agree, the defective goal should undergo deletion, since it counts as a copy of the probe; this entire process can be thought of as chain reduction (Nunes 2004).

Roberts' (2010) analysis obviously cannot be applied to subject *pro* in Mandarin Chinese, since Mandarin Chinese is not an agreement language, which means that there is no D-feature on T. In addition, based on Holmberg's classification (2005) of null subjects, subject *pro* in Mandarin Chinese should be taken to have no ϕ -features. Both of these facts suggest that it is impossible to consider subject *pro* in Mandarin Chinese a copy of T. Therefore, we need to rely on a different mechanism to account for properties of Mandarin subject *pro*.

4.3.3 Sigurðsson (2011)

In Chapter 2, I mentioned Sigurðsson (2011), and pointed out that his theory cannot be applied to Mandarin Chinese. However, given the fact that the underlying spirit of Sigurðsson (2011) is similar to that of Frascarelli (2007), I revisit his paper briefly in this subsection.

Although there is abundant evidence showing that argument drop is associated with inflectional morphology on verbs, Sigurðsson notes that there are many languages in which verbs agree with subjects in person and gender, yet argument drop is not permitted.

(37)	SG	1	bait	PL	1	bait- <i>um</i>	Oevdalian
		2	bait		2	bait- <i>ið</i>	
		3	bait		3	bait-a	
	SG	1	bít	PL	1	bít- <i>um</i>	Icelandic
		2	bít-ur		2	bít- <i>ið</i>	
		3	bít-ur		3	bít-a	

Oevdalian is a Scandinavian language that is linguistically similar to Icelandic. Although these two languages both exhibit clear morphological differences on verbs when they agree with plural nominal phrases, they differ from each other with respect to argument drop.

(38)	a.	...um	(wið)	irum	iema.	Oevdalian
		...if	(we)	are.1PL	home	
		‘... if we are at home.’				
	b.	...um	(ið)	irið	iema.	
		...if	(you)	are.2PL	home	
		‘...if you are at home.’				

(39)	a.	...ef	*(við)	erum	heima.	Icelandic
		...if	*(we)	are.1PL	home	
		‘... if we are at home.’				

b. ...um *(pið) eruð heima.

...if *(you) are.2PL home

‘...if you are at home.’

(38) and (39) show a clear contrast between these two languages: in Oevdalian, plural subjects can be dropped; in Icelandic, they cannot, although the verbal forms in these sentences reflect the subjects’ plurality.

However, it is not always the case that subjects cannot drop in Icelandic.

(40) _____ Ligger _____ bara på stranden. Swedish
lie. Ø-AGR just on beach.the

(41) a. _____ Ligg _____ bara á ströndinni. 1SG Icelandic
b. _____ Liggur _____ bara á ströndinni. 3SG
c. _____ Liggjum _____ bara á ströndinni. 1PL
d. _____ Liggja _____ bara á ströndinni. 3PL

Although Swedish, unlike Icelandic, is not an agreement language, both languages behave similarly with respect to subject drop in sentences like the one shown above (The first dash indicates an empty Spec, C, and the second one indicates an empty Spec, T).

Sigurðsson (2011) points out that it is even less clear that agreement plays a role in object drop, since there are many languages in which the object can be dropped even when the verb does not agree with it.

(42) a. ...ok munu nú taka _____ óvinir þínir. Old Norse
and will now take (it) enemies your
‘...and your enemies will now take (*your inheritance*).’

(Sigurðsson 1993:259)

- b. Hkalei amei ahphyit _____ tinte lou htinte. Burmese
 child mother blame (him/her) put that thinks
 ‘The child thinks that Mom will blame *(him/her)*.’

(Y. Huang 2000:85)

- c. Juzi nin Marya _____ juyanata. Imbabura Quechua
 Juzi says Marya (him) will.love
 ‘Juzi says that Marya will love *him*.’

(P. Cole 1987:600)

Since objects can drop in the absence of verbal agreement, Sigurðsson (2011) proposes that the vacancy in the object positions in (42) should be attributed to other factors; for (42a), he claims that ‘the silent object is *discourse-linked*’; for (42b&c), he says the silent object is *controlled* or *antecedent-linked*. Nevertheless, object drop is not unconstrained. Compare (43) and (44) below.

- (43) a. _____ Kenn’i (ch) _____ nicht. German
 b. _____ Känner’ja _____ inte. Swedish
 c. _____ pekk’é _____ ekki. Icelandic
 recognize’I no

- (44) a. *Jetzt Kenn’i (ch) _____ nicht. German
 b. *Jag Känner’ja _____ inte. Swedish
 c. *Ég pekk’é _____ ekki. Icelandic
 Now recognize’I (that) not

The sentences shown in (43) are grammatical. However, once the sentence-initial position, Spec, CP, is filled with a constituent, object drop is prohibited (44).

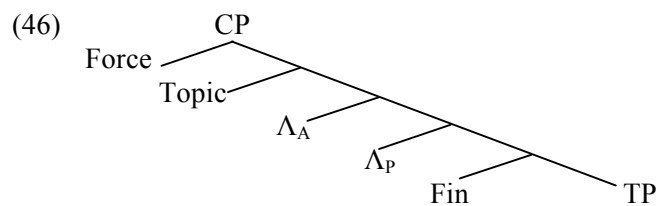
In order to account for this phenomenon, Sigurðsson (2011) proposes that each referential constituent, either overt or covert, has to be connected with a C/Edge-Linking feature, which can be a topic feature Top, a speaker feature Λ_A , or a hearer feature Λ_P .

(45) C/Edge-Linking Generalization

Any definite argument, overt or silent, positively matches at least one CLn in its local C-domain,

$CL_n \in \{ \Lambda_A, \Lambda_P, \text{Top}, \dots \}$.

Based on work such as Cinque (1999) and Rizzi (1997), the CP structure proposed in Sigurðsson (2011) is as follows:



In addition, Sigurðsson assumes that matching is implemented in terms of Agree (Chomsky 2001, Landau 2004): ‘a goal positively matches a probe if it gets positively valued in relation to it (Sigurðsson 2011:282).’ Take the following sentence as an illustration of this mechanism.

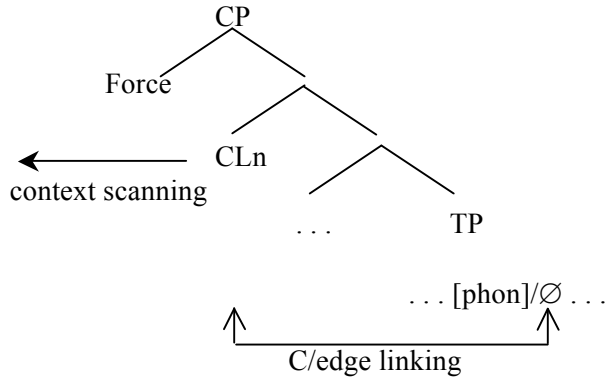
(47) Hey, John, are *you* invited? John₁...[CP ... { Λ_P }₁...[TP...you₁...

```

graph LR
    John1[John1] --- CP[CP ... {ΛP}1 ... [TP...you1...]
    you[you] --> LambdaP["{ΛP}1"]
    LambdaP --> John1
  
```

The overt pronoun *you* acquires its referential content by Agreeing with a C/Edge-Linking feature in the CP domain. However, this process cannot be completed without another mechanism, context scanning, which relates the Λ_P feature to *John*. Sigurðsson's complete (2011) framework is shown below.

(48) *Context linking (= C/edge linking + context scanning) of referential arguments*



Context linking consists of two parts: context scanning and C/edge linking. Sigurðsson (2011) points out that the clause-external context scanning is accomplished either by distant Agree/Control or by extrasyntactic means, which means that the C/edge linking feature must acquire its content by connecting to a constituent which may or may not be present in the same sentence. Skipping this step will render recovery of the referential null argument impossible.

Given this mechanism, Sigurðsson (2011) attributes the ungrammaticality of sentences like (39) and (44) to the failure of the C/edge linking feature to establish a connection with a null referential argument.

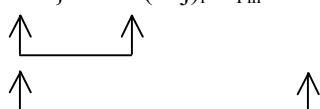
(49) $[_{CP} \dots \{CLn\} \dots (*X) \dots \emptyset_i \dots Agr_i \dots]$ Icelandic

All the ungrammatical sentences in (39) and (44) share one property: the Spec of CP is filled with an overt constituent. Thus, Sigurðsson proposes that C/edge linking cannot be established across a filled Spec, CP. In other words, only in the absence of an element in the Spec of CP is C/edge linking possible.

Another intriguing fact about argument drop in Germanic languages is that objects cannot drop if there exists a ‘strong’ subject in the same sentence.

- (50) a. _____ Kan’ja inte veta. Swedish
 (that) can’I not know
 ‘That, I cannot know.’
 b. ??_____ Kan jag inte veta.
 (that) can I not know

The subject in (50a) is cliticized to an auxiliary, while the subject in (50b) is a full nominal phrase. Sigurðsson claims that the unacceptability of (50b) can be attributed to the presence of an intervening, structurally higher subject, which blocks the C/edge link between a CLn feature and the object position. However, when the subject is a clitic, the null object can cross over it to the CP domain, establishing a connection with the CLn feature.

- (51) [CP . . . {CLn} . . . \emptyset (obj)_i-V_{Fin}+clitic_K . . . [TP t_K . . . t_i . . .
- 

(51) shows that the verb carries not only the subject clitic, but also the null object, when it moves to the CP domain. According to Sigurðsson (2011), through the process of raising to the CP domain, the null object becomes linked to a Top feature, and the subject clitic matches a Speaker feature.⁶

Null arguments in Finnish, unlike their counterparts in Germanic languages, can co-refer with a distant nominal phrase across a filled CP.

⁶ Sigurðsson (2011) also proposes that null subjects in Germanic languages have to move to the CP domain to match a CLn feature.

- (52) a. *(Hän) puhuu englantia.
 he/she speak.3SG English
- b. Pekka_i väittää että ______{i/*j} puhuu englantia hyvin.
 Pekka claims that speak.3SG English well
- c. Pekka_i väittää että hän_{i/*j} puhuu englantia hyvin.
 Pekka claims that he speak.3SG English well

In Finnish, a third-person null subject is disallowed in main clauses, and a null subject in an embedded clause must be linked to the matrix subject in the same sentence. Sigurðsson (2011) proposes the following mechanism to account for the co-referentiality between a null argument and its referent in Finnish.

- (53) NP . . . [CP . . . {CLn} . . . \emptyset_i -että . . . [TP t_i . . . Finnish
- \uparrow \uparrow \uparrow \uparrow
 "control"

Like null arguments in Germanic languages, null subjects in Finnish have to move across a lexical C in order to connect to a CLn feature; the content of this CLn feature is determined by the preceding nominal phrase through an Agree-based control mechanism (Landau 2000, 2004, 2008).

As for Mandarin Chinese, Sigurðsson (2011) bases his analysis on the following examples.

- (54) a. _____ kanjian ta le.
 see him PERF
 ‘[He/She] saw him.’
- b. Zhangsan_i shuo [______i hen xihuan Lisi].
 Zhangsan say very like Lisi
 ‘Zhangsan said that he liked Lisi.’

Given the fact that null subjects in Mandarin Chinese can refer to either a discourse topic or a matrix subject, Sigurðsson proposes that Mandarin null subjects can be linked to a CLn feature under distant Agree, and thus do not have to raise to the CP domain. This analysis is represented below.

$$(55) \quad [_{CP} \dots \{CL_n\} \dots [_{TP} \dots [_{vP} \dots \emptyset \dots]]]$$

In a nutshell, Sigurðsson (2011) proposes that cross-linguistically, the co-referentiality between overt and covert referential arguments and their referents boils down to successful C/edge linking, which is established either through long-distance Agree or through movement plus direct linking.

Although Frascarelli (2007) and Sigurðsson (2010) rely on different mechanisms to account for null arguments, their analyses have one property in common: both authors treat the left periphery of the clause as a resource that provides information to identify null arguments. In the following section, I will relate the discussion in Section 4.2 regarding Mandarin subject *pro* to the analyses in the two papers just described.

4.4 Analysis

In 4.2, I showed that speakers of Mandarin Chinese do occasionally leave subject positions empty, and I argued that these empty subject positions are not derived by syntactic movement, since they can appear within an island. Moreover, based on observations of several sentences of this type, I summarized the properties of subject *pro* as in (20), repeated below.

(20) Properties of subject *pro*:

- (i) Subject *pro* can only be licensed in a monologue, and cannot be used recursively across

multiple sentences.

- (ii) Subject *pro* has to have as its antecedent a constituent located in subject position.
- (iii) Subject *pro* can only be identified with the closest overt subject in the same sentence.

The goal of this section is to explore why subject *pro* has these properties, and to seek an account of the use of this empty category in Mandarin Chinese.

4.4.1 Application of the Generalized Control Rule

Although I have shown that the null subject under discussion has to be analyzed as *pro* rather than a trace left by movement, this does not mean that we have arrived at a satisfactory analysis.

Recall that Huang (1984, 1989) proposes the Generalized Control Rule (GCR), which requires that a covert pronominal be co-indexed with the closest nominal phrase. If the content of covert pronouns is in fact identified this way, then the subject *pro* under discussion is expected to be co-referential with the closest linear constituent in the preceding sentence. We can verify this analysis by looking at the sentences mentioned earlier.

When it comes to sentences like (1), it seems that we can attribute the co-referentiality between the null subject in the subsequent sentence and the matrix subject in the preceding sentence to the fact that the matrix subject is the closest nominal phrase to the covert pronominal subject. Thus, GCR appears to work here. GCR can also be used to account for the contrast between (1) and (17). We can claim that the ungrammaticality of sentences like (17) results from the failure of the null subject to refer to the closest nominal phrases, *laoshi* ‘the teacher.’ This failure constitutes a violation of GCR, which renders these sentences unacceptable. However, applying GCR to sentences like (11)~(16) turns out to be less straightforward.

In (11), the object *Mali* ‘Mary’ in the first clause is closer to the null subject than *Yuehan* ‘John’ is, yet *Mali* ‘Mary’ cannot serve as the antecedent of the empty category; in (12), the subject position in the second clause cannot be left empty, even when its logically reasonable antecedent is closer to it than another nominal phrase; (13) is a similar example, in which the subject position cannot be null when its antecedent occupies an object position.

In these examples, all the original sentences contain two animate arguments. In fact, making one of these arguments inanimate, and thus rendering the remaining animate argument more prominent, does not ameliorate the null-argument situation.

- (56) a. *Yinyue chao-dao xiao-baobao_i le, suoyi e_i ku-le hen-jiu.
 music bother-to little-baby SFP so cry-ASP very-long
 ‘The music bothered the little baby, so [(s)he] cried for a long time.’
- b. *Zuotian you yi-liang che zhuang-dao Yuehan_i, suoyi e_i xianzai
 yesterday have one-cl car hit-arrive John so now
 zai yiyuan li.
 in hospital inside
 ‘A car hit John yesterday, so [he] is in the hospital now.’

Unlike in the previous examples, the first-clause subjects in (56) are inanimate, and the objects are animate. Although only human beings can do the action of crying or be hospitalized, the second-clause subject positions in (56) still cannot be left empty. This fact goes against the GCR, which predicts that the null subject in (56b), for example, will take *Yuehan* ‘John’ as its antecedent, since *Yuehan* ‘John’ is the closest nominal phrase to the covert pronominal subject.

The GCR also fails to account for sentences like (15) and (16), in which the first-clause subjects are co-ordinated NPs. Linearly speaking, the second conjunct in each of the co-ordinated NPs is closer to the empty subject position than the first conjunct; nevertheless, connecting only the second conjunct to the

null subject generates unacceptable results: the empty subject positions in these sentences can only refer to the conjoined NPs as a unit.

Given this discussion, it seems that we cannot rely on the GCR to account for the co-referentiality of subject *pro* in these cases.

4.4.2 Alternative analysis for Mandarin subject *pro*

Based on the diagnostic introduced in A&A (1998), Frascarelli (2007) proposes that preverbal nominal phrases in Italian should be analyzed as occupying A'-positions rather than A-positions, which means that they are not genuine syntactic subjects of their sentences. From the perspective of scope ambiguity, Mandarin Chinese is more like Greek than Italian. Recall that Frascarelli (2007) show that scope ambiguity in Italian disappears only when the sentence containing the quantifier phrases is followed by another sentence. In Mandarin Chinese, as in Greek, scope ambiguity is not available even in stand-alone sentences.

Aoun and Li (1989, 2003), Huang (1982), and Lee (1986) provide abundant evidence to demonstrate that Mandarin sentences containing more than one quantifier phrase have only one reading, which corresponds to the surface order of the quantifier phrases.

- (57) a. Youyige xuesheng bu mai suoyoude shu. (Huang 1982:113)
 one student not buy all book
 'There was a student who did not buy all the books (only some).'
- b. Meiyou yige xuesheng mai-le suoyoude shu.
 not one student buy-ASP all book
 'No student bought all the books.'

There are two quantifier phrases in each of (57a) and (57b): *one student* and *all the books*, and *no student* and *all the books*, respectively. Unlike their counterparts in English, these sentences lack the inverse scope reading in which the quantifier phrase in object position takes wide scope over the one in subject position; only the surface scope reading is available for (57a) and (57b). Aoun and Li (1989) also note an interpretive rigidity in sentences containing multiple quantifier phases in Mandarin Chinese.

- (58) Meigeren dou xihuan yige nuren. (Aoun and Li 1989:141)
 everyone all like one woman
 ‘Everyone loves a woman.’

According to Aoun and Li (1989), the quantifier phrase in the subject position of (58) takes wide scope over the one in object position, giving rise to one and only one interpretation.

Another diagnostic used by A&A (1998) to determine the syntactic position of a preverbal nominal phrase concerns the interpretation of indefinites. In Greek, preverbal indefinite subjects only have a partitive or specific reading.

- (59) a. Ena pedhi diavase to ‘Paramithi horis Onoma’. (A&A 1998)
 a child read the ‘Fairy-tale without a title’
 ‘A certain child/one of the children read ‘Fairytale without a Title’.’
 b. diavase ena pedhi to ‘Paramithi horis Onoma’.

Unlike its counterpart in English, (59a) does not have the existential reading. However, when the same nominal phrase appears post-verbally, as in (59b), the existential reading becomes available. This contrast leads A&A to claim that preverbal nominal phrases in Greek do not raise from within VP to the Spec of TP, and therefore are not subject to existential closure (Kratzer 1988, Diesing 1992). They instead propose that these nominal phrases are base-generated in an A’-position.

Mandarin Chinese behaves similarly to Greek with respect to the interpretation of nominal phrases. First, Cheng and Sybesma (1999) note that bare nouns in Mandarin Chinese are interpreted differently when they appear in different positions.

- (60) a. Hufei mai shu qu le.
Hufei buy book go SFP
'Hufei went to buy a book/books.'
- b. Hufei he-wan-le tang.
Hufei drink-finish-LE soup
'Hufei finished the soup.'
- c. Wo xihuan gou.
I like dog
'I like dogs.'

They point out that bare nouns in object position can be interpreted as indefinite (60a), definite (60b), or generic (60c). However, when the same bare nouns appear in subject position, not all of these interpretations are maintained.

- (61) a. Gou yao guo malu.
dog want cross road
'The dog wants to cross the road.'
- b. Gou jintian tebie tinghua.
dog today very obedient
'The dog/dogs was/were very obedient.'

- c. Gou ai chi rou.
 dog love eat meat
 ‘Dogs love to eat meat.’

The preverbal bare noun in (61b) is definite, while the one in (61c) is generic. As for the preverbal bare noun in (61a), it can be definite, but it cannot be indefinite or existential. In other words, (61a) cannot mean ‘A dog wants to cross the road.’

Compared to the distribution of bare nouns, nominal phrases with numerals in Mandarin Chinese are subject to certain conditions. Tsai (2001) notices that nominals bearing numerals cannot appear in tensed clauses.

- (62) *Akiu yiwei liu-ge ren dao-le.
 Akiu think six-Cl person arrive-Prf
 ‘Akiu thought that six people had arrived.’

(62), in which the indefinite appears in the subject position of the embedded clause, is ungrammatical. However, the use of an indefinite nominal becomes felicitous when it is preceded by the modal verb *you* ‘have/exist.’

- (63) a. You liang-ge ren yiqian jian-guo Akiu.
 exist two-Cl person before meet-Exp Akiu
 ‘There are two people who met Akiu before.’
 b. *liang-ge ren yiqian jian-guo Akiu.
 two-Cl person before meet-Exp Akiu
 ‘Two people met Akiu before.’

Although indefinites can be used in subject position following *you*, they cannot possess the existential reading in this position; instead, they only carry the specific interpretation.

The fact that preverbal bare nouns and indefinite nominal phrases in Mandarin Chinese only bear a specific or definite reading suggests that they should be analyzed on a par with their Greek counterparts with respect to their syntactic position. Following A&A (1998) and Frascarelli (2007), I propose that preverbal (referential and definite) nominal phrases in these Mandarin sentences should be analyzed as topics base-generated in the CP domain.

Viewing these Mandarin preverbal nominal phrases this way does not necessarily mean that we need to adopt the analysis proposed in Frascarelli (2007) to account for sentences containing subject *pro* in Mandarin Chinese. In fact, there are several differences between Italian and Mandarin Chinese regarding the felicitous use of subject *pro*.

Recall that there is no restriction on how many subject *pros* can be used in monologues in Italian. Examples like (23) reveal that, once a constituent is understood to be a topic, the subject positions in the following sentences can be left empty, as long as (i) these null subjects refer to the same topic, and (ii) no other Aboutness topics intervene. In contrast, speakers of Mandarin Chinese cannot unlimitedly use subject *pro*, even within a monologue.

- (64) #Yuehan_i shi yi-ge hao xuesheng. *pro*_i mei-tian budan zhuen-shi
 John is one-CL good student every-day not-only on-time
 dao xuexiao, *pro*_i haihui bang tongxue dashao jiaoshi. Chiwai,
 arrive school but-also help classmate clean classroom in-addition
 mei-wan zai *pro*_i sheijiao qian, *pro*_i yiding hui ba zuoye
 every-night at sleep before must will BA homework
 xie-wan.
 write-finish

‘John is a good student. He not only goes to school on time every day, but also helps his

classmates clean the classroom. In addition, he must finish his homework before going to bed every night.'

Yuehan 'John' is established as an Aboutness topic when the first sentence in the monologue is uttered. However, unlike in Italian, the subject positions in the subsequent sentences cannot be null, even if all of them are co-referential with *Yuehan* 'John.' This fact suggests that we cannot apply Frascarelli's (2007) analysis to Mandarin monologues containing subject *pro*.

Mandarin Chinese also differs from Italian in terms of the effect that the appearance of an overt subject has on the connection between subject *pro* and its antecedent. In (17) and (18), the appearance of an overt subject at the beginning of the second clause blocks the null subject from referring to the matrix subject of the first clause. In Italian, however, such an interference effect does not arise.

- (65) a. John_i è intelligente, e sua madre pensa che *pro*_i possa entrare
John is intelligent so his mother thinks that can enter
facilmente in una buona università.
easily to one good university
'John is smart, so his mother thinks that he can enter a good university.'
- b. John_i è intelligente, e il suo professore pensa che *pro*_i possa
John is intelligent so the his professor thinks that can
entrare facilmente in una buona università.
enter easily to one good university
'John is smart, so his teacher thinks that he can enter a good university.'

The matrix subject in the second clause in (65a) is female, and the corresponding subject in (65b) is male. These two Italian sentences show that, regardless of the gender of the matrix subject of the second clause,

the embedded *pro* has no problem crossing over that subject to co-refer with the matrix subject of the preceding clause.

Furthermore, as I illustrated earlier, in Mandarin Chinese, the antecedent of subject *pro* must be the *subject* of the preceding clause; object antecedents of subject *pro* are disallowed. Contrastively, in Italian, the null subject position in the second clause can take the object of the preceding clause as its antecedent.⁷

- (66) a. John_i ha incontrato per caso Bill_j ieri, così *pro*_{ij} è
 has meet-PAST by chance yesterday so has
 stato molto contento.
 been very happy.3SG.MASC.
 ‘John_i ran into Bill_j yesterday, so he_{ij} was very happy.’
- b. John_i ha incontrato per caso Mary_j ieri, così *pro*_j è
 has meet-PAST by chance yesterday so has
 stata molto contenta.
 been.FEM. very happy.3SG.FEM.
 ‘John ran into Mary yesterday, so she was very happy.’
- c. John_i ha dato a Mary_j 1000\$, così *pro*_j è stata
 has give-PAST to so has been.FEM.
 molto contenta.
 very happy.3SG.FEM.
 ‘John gave Mary 10000 dollars, so she was very happy.’

(66a) is ambiguous: the null subject can refer to either the subject or object of the preceding clause. However, if the morphological forms of the words *been* and *happy* in the second sentence reflect a gender difference, then only the argument that correctly matches the gendered suffix can be interpreted as the

⁷ Thank Giuseppe Di Caprio (p.c.) for giving me the Italian sentences in (65) and (66).

antecedent of the empty subject position. This case is illustrated in (66b), in which the null subject of the second clause must refer to *Mary*. A similar phenomenon can be observed in (66c), in which the morphological forms of *been* and *happy* in the second sentence indicate that it is Mary rather than John that felt happy.

Summarizing the differences between Mandarin Chinese and Italian with respect to these properties of subject *pro* gives rise to the following chart:

(67) Differences between Mandarin subject *pro* and Italian subject *pro*:

Properties of subject <i>pro</i> \ Languages	Mandarin Chinese	Italian
1. Only appears in monologues	YES	NO
2. Only refers to subjects	YES	NO
3. Only refers to a local subject	YES	NO

Taking all of these facts into consideration and following Frascarelli (2007), I propose that sentences like (6a) should be analyzed as follows:

(68) [_{CP} John_i [_{TP} *pro*_i hen congming]], suoyi [_{CP} TOP_i [_{TP} *pro*_i chang na diyi-ming]].

Agree (I)

very smart so

Agree (III)

often get first-prize

Distant Agree (II)

‘John is smart, so he often gets the first prize.’

Three Agree relations are manifested in this configuration. The first one is established between the overt topic *John* and the subject *pro* in the first sentence; the second one links the overt topic *John* to the covert topic TOP in the second sentence, thus permitting the covert topic TOP to acquire the φ -feature values it needs to Agree with subject *pro* in the second clause; the third Agree relation takes place between the covert TOP and subject *pro* in the second sentence, serving to provide this *pro* with φ -feature values. As we will see in the following discussion, among the three Agree relations, the second one, Distant Agree, is the most important, since it determines whether the third Agree relation can take place or not.

(69) [CP John_i [TP *pro*_i hen congming]], suoyi [CP John-a_i [TP *pro*_i chang na diyi-ming]].
very smart so TOP often get first-prize
'John is very smart, so John, he often gets the first prize.'

What's more, the analysis proposed here enables us to account for the restrictions on the use of subject *pro* in Mandarin Chinese.

Recall that one of the restrictions on the use of Mandarin subject *pro* is that it cannot be used across different speakers. The relevant example is repeated below.

- (4) Speaker A: John_i not only always comes to class on time, but also gets an A in every subject.

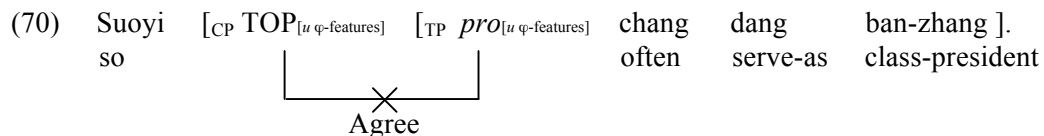
Most importantly, he is very humble.

Speaker B: *Suoyi e_i chang dang ban-zhang.

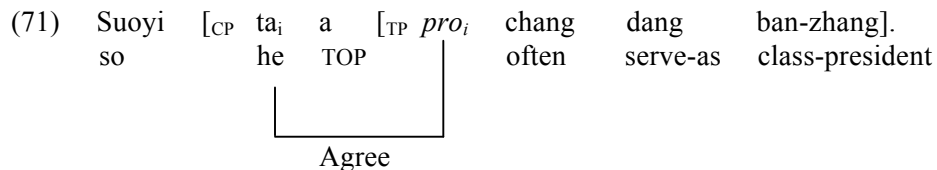
so often serve-as class-president

‘So, [he] often serves as the class president.’

The unacceptability of Speaker B’s reply can be attributed to the fact that the covert topic TOP in the CP domain of this sentence does not have an appropriate antecedent to Agree with. As a result, its φ -features remain unvalued, and fails to provide content to the following subject *pro*. This analysis is shown below.

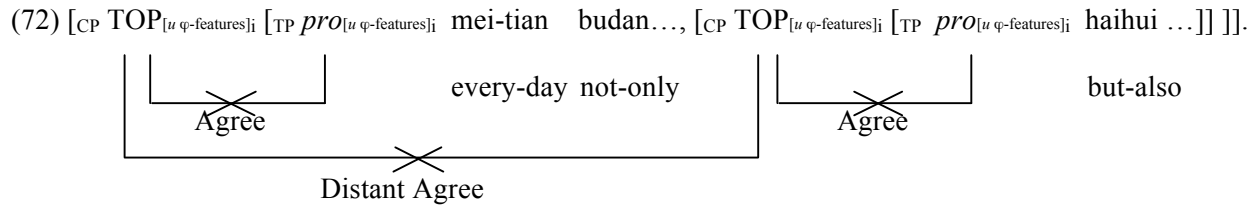


Since Agree cannot be established between TOP and the subject *pro*, the resulting sentence is ungrammatical. In other words, the unacceptability of (70) can be attributed to the uninterpretability of the subject *pro*. This analysis further predicts that, if there is an overt topic present in (70), the Agree relation illustrated immediately above should be possible. The following acceptable sentence bears out this prediction.



(71) can be used as a felicitous follow-up for Speaker A's utterance. We can account for this fact by saying that, since the overt topic *ta* 'he' is a referential pronoun inherently carrying valued φ -features, it does not need to establish a Distant Agree relation with a preceding nominal phrase. Therefore, it can serve as the sole value-provider for the subject *pro* following it.

This analysis can also account for the ungrammaticality of (19), which shows that speakers of Mandarin Chinese are not allowed to use subject *pro* too many times within a monologue. Under the analysis that I propose, the failure of the content of subject *pro* to be identified in (19) can be understood to follow from the fact that the covert topic TOP, which is supposed to provide referential values to the subject *pro*, does not have an overt topic to rely on; thus, the φ -features of TOP and the subject *pro* remain unvalued, resulting in an uninterpretable sentence.



‘He not only goes to school on time every day, but also helps his classmates clean the classroom.’

However, we can improve the acceptability of this utterance by inserting the overt pronoun *ta* ‘he’ into some of the empty subject positions. The resulting utterance (73) is much better than (19).

- (73) Yuehan_i shi yi-ge hao xuesheng. Ta_i pro_i mei-tian budan zhuen-shi
 John is one-CL good student he every-day not-only on-time
 dao xuexiao, pro_i haihui bang tongxue dashao jiaoshi. Chiwai,
 arrive school but-also help classmate clean classroom in-addition
 mei-wan zai pro_i sheijiao qian, ta_i pro_i yiding hui ba zuoye
 every-night at sleep before he must will BA homework

xie-wan.

write-finish

‘John is a good student. He not only goes to school on time every day, but also helps his classmates clean the classroom. In addition, he must finish his homework before going to bed every night.’

Two underlined overt pronouns *ta* ‘he’ have been inserted in different positions in this utterance.⁸ The function of the overt pronouns in this monologue is similar to that of the Italian strong pronoun *lui*: both serve as Aboutness topics and have to Agree with a subject *pro*. Within the framework that I propose, part of this utterance is analyzed as follows:

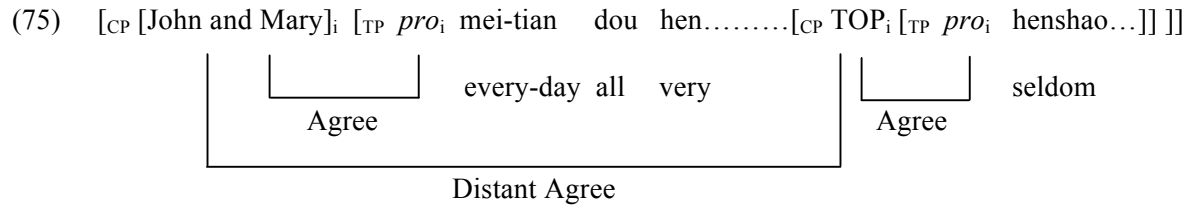
- (74) [_{CP} *Ta_i* [_{TP} *pro_i* mei-tian budan zhuen-shi....., [_{CP} TOP_i [_{TP} *pro_i* haihui]]]].
- | | | | |
|---|----------------------------|---|----------|
| <div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div> Agree | every-day not-only on-time | <div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div> Agree | but-also |
| Distant Agree | | | |

‘He not only goes to school on time every day, but also helps his classmates clean the classroom.’

The appearance of an overt topic *ta* ‘he’ in the CP domain of the first clause makes Distant Agree possible, which in turn equips TOP in the second clause with valued φ -features; consequently, speakers of Mandarin Chinese have no difficulty understanding the meaning of the second *pro*, since this *pro*, like the first one, also has acquired values for its φ -features through Agreement with TOP.

The licensing condition built on the Agree relation between a topic and a subject *pro* can be used to deal with cases in which the antecedent of a subject *pro* is a conjoined NP. Take (15) as an illustration.

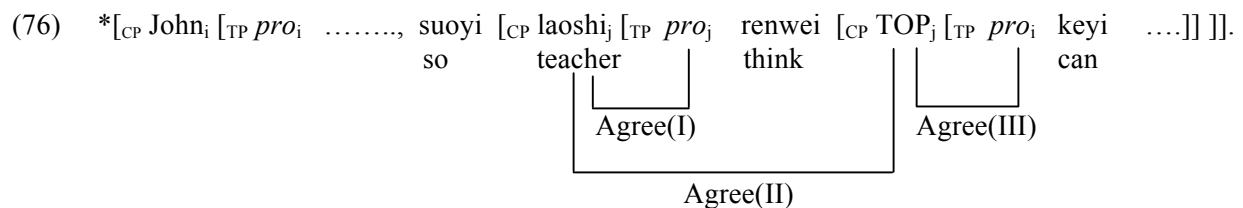
⁸ If we compare (73) to (19), and pay attention to (73) closely, we will find that there must appear at least one overt pronoun *ta* ‘he’ in sentences demarcated by periods. From the point of view of using subject *pro*, it seems that both a period in written articles and a complete pause in monologues have a similar function: each of them imposes a restriction on when the subject position of a sentence can be left empty.



‘John and Mary work very hard every day, so they seldom stay at home.’

The overt nominal phrase *John and Mary* is a topic located in the CP domain of the first clause, and it Agrees with the subject *pro* in the same clause. Through long-distance Agreement with the overt topic *John and Mary*, the ϕ -features on the covert topic TOP get valued; these features in turn identify the subject *pro* that follows. The co-referentiality between subject *pro* and the nominal phrase *John and Mary* results from the fact that it is the conjoined nominal phrase as a whole, rather than either *John* or *Mary* independently, that serves as the topic of the sentence. In other words, it is the constituent occupying the topic position that determines the content of the null subject.

The last phenomenon that this analysis accounts for concerns sentences like (17) and (18), in which the appearance of *laoshi* ‘the teacher’ in the second sentence degrades the grammaticality of the entire sentence.



‘John is very smart, so the teacher thinks that he can pass the exam to enter National Taiwan University.’

As I propose earlier, referential preverbal nominal phrases in Mandarin Chinese should be viewed as topics. Under this analysis, *John* in (76) is actually an A’-element located in the CP domain of the first clause, and *laoshi* ‘the teacher’ is another A’-element located in the CP domain of the second clause. The

unacceptability of (76) results from the Agreement relationship that the overt topic *laoshi* ‘the teacher’ enters into.

(76) shows that three Agree relations depend directly or indirectly on the overt topic *laoshi* ‘the teacher.’ The overt topic *laoshi* ‘the teacher’ first Agrees with the covert topic TOP in the lower CP domain; since the covert topic TOP acquires values for its interpretive features from *laoshi* ‘the teacher’, the subject *pro* preceding the auxiliary must bear the same interpretation as the covert topic. This last step results in an infelicitous interpretation in which the teacher thinks that (s)he him/herself can pass the exam to enter the university.

In this section, I have discussed the licensing condition for using subject *pro* in Mandarin Chinese. I propose that interpreting subject *pro* requires not only the presence of an overt topic in the same sentence, but also different Agree relations that connect null subjects to topics in distinct positions. In the next subsection, I will address the issue of why languages behave differently with respect to the use of such an empty category.

4.4.3 Further discussion

In the previous section, I listed three differences between the use of subject *pro* in Italian and in Mandarin Chinese, and arrive at the summary shown in (67), which is repeated below.

(67) Differences between Mandarin subject *pro* and Italian subject *pro*:

Properties of subject <i>pro</i> \ Languages	Mandarin Chinese	Italian
1. Only appears in monologues	YES	NO
2. Only refers to subjects	YES	NO

3. Only refers to a local subject	YES	NO
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Before providing an analysis to account for the differences between Italian and Mandarin Chinese, I would like to extend the discussion to Japanese.

The fact that (i) Japanese and Mandarin Chinese are radical *pro*-drop languages, and (i) both languages are non-agreement languages predicts that Japanese and Mandarin Chinese should pattern alike in every aspect concerning the use of subject *pro*. However, this prediction is contradicted by the following linguistic facts.

First, Japanese is like Italian in that subject *pro* can appear more than once in a monologue.

- (77) John_i-wa ii seito da. *pro*_i gakko-ni tikoku si-nai si,
 John-Top good student Cop.Pres. school-to be.late do-not and,
 ‘John is a good student. John is never late for school, and
*pro*_i kurasumeeto-o tetudatte kyoositu-o soozi-mo su-ru. Sarani,
 classmate-ACC. help-Gerund classroom-ACC. clean-also do-Pres. in-addition
 he also helps his classmates clean the classroom. In addition,
*pro*_i maiban kanarazu [*pro*_i ne-ru mae-ni] syukudai-o owar-ase-ru.
 every-night certainly sleep-Pres before-at homework-ACC. end-cause-Pres.
 he certainly finishes his homework every night before he goes to bed.’

Second, subject *pro* can refer to a constituent in the object position of the preceding clause.

- (78) a. John-wa kinoo Bill_j-ni dekuwasita. Dakara *pro*_j sugoku yorokondeita yo.
 John-TOP yesterday Bill-into ran therefore very was-pleased SFP
 ‘John ran into Bill_j yesterday, so [he]_j was very happy.’

- b. John-wa kinoo Mary_j-ni 10000 doru ageta. Dakara *pro_j* sugoku yorokondeita yo.
 John-TOP yesterday Mary-to 10000 dollar gave therefore very was.pleased SFP
 ‘John gave Mary 10000 dollars. Therefore, [she] was very happy.’

The subject *pro* in the second sentence in (78a) refers to *Bill*, which is in the object position of the first sentence; the one in (78b) is co-referential with *Mary*. As we have seen earlier, this kind of co-referentiality is impossible in Mandarin Chinese.

Third, subject *pro* in Japanese can cross the matrix subject in the same sentence to refer to another subject in the preceding sentence.⁹

- (79) a. John_i-wa atama-ga ii node, *kare-no sensei-wa* [*pro_i* ii daigaku-ni.
 John-TOP head-NOM good because, he-GEN teacher-TOP good university-to
 hair-e-ru to] omotteiru.
 enter-can-Pres COMP. think
 ‘John_i is very smart, so his teacher thinks that [he]_i can enter a good university.’
- b. John_i-wa atama-ga ii node, *kare-no hahaoya-wa* [*pro_i* ii daigaku-ni.
 John-TOP head-NOM good because, he-GEN mother-TOP good university-to
 hair-e-ru to] omotteiru.
 enter-can-Pres COMP. think
 ‘John_i is very smart, so his mother thinks that [he]_i can enter a good university.’

The ‘intervening’ subject in the second clause is *his teacher* in (79a), and *his mother* in (79b). As we can see above, the appearance of these subjects in the second clauses of each example does not prevent subject *pro* from being co-referential with the matrix subject in the first clause. Again, this situation differs significantly from the corresponding case in Mandarin Chinese.

⁹ Thank Hiroki Narita (p.c.) for giving me the Japanese sentences in (77)~(79).

Taking these facts into consideration, we need to expand the summary in (67) as follows:

(80) Differences between Italian subject *pro*, Japanese subject *pro*, and Mandarin subject *pro*:

Properties of subject <i>pro</i> \ Languages	Mandarin Chinese	Italian	Japanese
1. Only appears in monologues	YES	NO	NO
2. Only refers to subjects	YES	NO	NO
3. Only refers to a local subject	YES	NO	NO

The fact that Japanese behaves more like Italian than Mandarin Chinese suggests that whether or not a particular language has rich inflectional morphology is not directly tied to how flexible this language is in dropping subjects. Therefore, we should not account for the cross-linguistic differences seen above based on verbal inflection.

Why, then, do the cross-linguistic differences summarized in (80) exist? I propose that the differences in the permissiveness of subject *pro* in Italian, Japanese, and Mandarin Chinese boil down to the manner in which the covert topic TOP acquires its featural content. In Italian, as shown in Frascarelli (2007), the covert topic TOP that Agrees with subject *pro* is endowed with inherently valued φ -features, so it does not have to rely on a previous overt topic to acquire relevant feature values. As a result, subject *pro* in Italian can always be licensed by a covert topic, either in monologues or in dialogues. I propose to apply the same reasoning to the Japanese cases we saw above. That is, the covert topic TOP in Japanese also has valued φ -features, so it does not have to depend on an overt constituent to acquire its φ -feature values. On the other hand, in Mandarin Chinese, as I have argued earlier, the covert topic TOP that Agrees with subject *pro* must ‘absorb’ relevant φ -feature values from its antecedent.

Given this discussion, I propose that the licensing of subject *pro* is built on the following parameter:

(81) Parameterization of covert topics: covert topics that Agree with subject *pro* are/are not inherently endowed with valued ϕ -features.

Italian and Japanese set up this parameter positively, so subject *pro* can get interpreted via Agreement with the covert topic; on the contrary, since Mandarin Chinese has a negative value for this parameter, it requires that the covert topic Agree with a prior overt constituent; otherwise this covert topic cannot identify the subject *pro* that appears later.

4.5 Conclusion

In this chapter, I have elaborated on the circumstances under which speakers of Mandarin Chinese can use subject *pro*, and described how subject *pro* gets licensed. The appearance of subject *pro* in Mandarin Chinese is subject to the following conditions: (i) its distribution is limited to monologues; (ii) it cannot appear too many times without being preceded by an overt topic; (iii) the constituent that it takes as its antecedent must be in a ‘subject’ position; and (iv) it cannot cross a closer potential antecedent to refer to a more distant constituent. Inspired by Frascarelli (2007), Roberts (2010), and Sigurðsson (2011), I propose that all of the licensing conditions mentioned above can be accounted for if the overt antecedent of a subject *pro* is viewed as an A’-topic, which not only Agrees with the subject *pro* immediately following it, but also Agrees with a covert topic TOP. This covert topic, in turn, provides ϕ -feature values to another subject *pro* in the sentence. Without the appearance of an overt topic in the sentence, the middle covert topic cannot be interpreted, which results in an unidentifiable subject *pro*.

This analysis also accounts for the ability of subject *pro* to be used across speakers and recursively in Italian and Japanese, while it cannot do so in Mandarin Chinese. In the last section of this chapter, I proposed that this contrast is derived from the properties of the covert topic. In Italian and Japanese, ϕ -features on the covert topic that Agrees with the subject *pro* are inherently valued; in Mandarin Chinese,

the covert topic bears unvalued φ -features, so the presence of an overt antecedent in the same sentence is required for Agreement purposes.

The discussion in this chapter has provided us with a better understanding of the intrinsic properties of subject *pro* in Mandarin Chinese and the cross-linguistic differences between Italian, Japanese, and Mandarin Chinese with respect to the use of this empty category.

CHAPTER 5

CONCLUSION

This dissertation has focused on the syntactic properties of empty categories in Mandarin Chinese. Ever since Huang's (1984, 1989) proposal that some empty categories should be viewed as *pro*, while some others are variables bound by a discourse topic, Mandarin Chinese has been understood as a language that drops subjects and objects rather freely.

In this thesis, I have shown that the omission of arguments in Mandarin Chinese is in fact constrained by various conditions. In Chapter 2, I argue that discourse is not the exclusive controller of ellipsis that it was once perceived to be: I demonstrate that the availability of a discourse topic is insufficient to license empty categories in Mandarin Chinese by showing that subject and object positions cannot be left empty at random. Some empty subject positions are neither true instances of nominal ellipsis nor variables bound by discourse topics; instead, they are a side effect of verb or *vP* movement followed by TP-ellipsis. I also discuss a potential challenge to the analysis of (apparent) empty subject sentences, namely the fact that Mandarin Chinese verbal movement is limited to V-to-*v*; it is widely assumed that continued movement of the verb to T or C is prohibited, since verbs in Mandarin Chinese are not allowed to precede adverbs like *often* or negation markers. Inspired by Merchant (2004), I propose that verb movement to C can take place in Mandarin Chinese, provided that it is remedied by clausal ellipsis, which deletes everything within TP, including the argument(s) of the verb and the offending traces. Chapter 3 investigates the circumstances under which objects can be 'dropped' in Mandarin Chinese. I gave a number of examples to demonstrate that 'objectless' sentences have to be licensed by structural parallelism built on verbal identity. In addition, I propose that the mechanism responsible for creating empty object positions in cases of structural parallelism is V-stranding VP-ellipsis; this is a departure from the account that advocates for an analysis based on argument ellipsis for

such structures. Chapters 2 and 3 together reveal an important property of Mandarin Chinese: some sentences that do not contain subjects and/or objects should not be considered instances of radical *pro*-drop; instead, they should be understood as deriving from TP-ellipsis or VP-ellipsis. It necessarily follows from this analysis that the empty argument positions in these cases are only apparent; in reality, they are not vacant at all.

In Chapter 4, I show that, although we cannot rely on the strength of discourse alone to account for empty categories, the concept of topic-hood is nevertheless implicated in the formation of certain empty argument positions in sentences used in monologues. Based on (i) the lack of ambiguity in Chinese sentences containing preverbal quantifier phrases and (ii) the fact that preverbal nominal phrases have specific and definite but not existential readings, I claim that subject *pro* must have as its antecedent an element located in an A'-position, which can be overt or covert. In addition, I suggest that the differences between Italian, Japanese, and Mandarin Chinese with respect to the appearance of subject *pro* can be boiled down to the featural properties of the covert topic TOP preceding subject *pro*: this covert topic has inherently valued φ -features in Italian and Japanese, while its counterpart in Mandarin Chinese does not.

Given these analyses, let us revisit the following example from Huang (1984), first introduced at the beginning of this dissertation:

- (1) Speaker A: Zhangsan kanjian Lisi le ma? (Huang 1984)
 Zhangsan see Lisi le Q
 ‘Did Zhangsan see Lisi?’
- Speaker B: a. Ta kanjian ta le.
 he see him le
 ‘He saw him.’
- b. e kanjian ta le.
 see him le
 ‘[He] saw him.’

- c. Ta kanjian e le.
 he see le
 ‘He saw [him].’
- d. e kanjian e le.
 see le
 ‘[He] saw [him].’

(1a) is a complete sentence that serves as a full answer to Speaker A’s question; by contrast, (1b) is not an acceptable answer, since Mandarin transitive sentences without subjects are not fully grammatical. As for (1c) and (1d), following the ‘more’ traditional approach pioneered in Huang (1984), we should first analyze these sentences as containing empty categories in subject and/or object position, and then treat these empty categories as variables bound by prominent discourse topics. In Chapter 2 and Chapter 3, however, I argued extensively that these two sentences should be analyzed in a modular way. That is, (1c) should be considered an instance of V-stranding VPE, while (1d) is derived by verb movement to the CP domain followed by TP-ellipsis. The re-analyzed configurations of these sentences are shown below:

- (1) c’. Ta [_{VP} kanjian_i [_{VP} ~~t_i~~ ~~ta~~]] le.
 he see him SFP
 ‘He saw him.’
- d’. [_{CP} Kanjian_i [_{TP} ~~ta~~ ~~t_i~~ [_{VP} ~~t_i~~ [_{VP} ~~t_i~~ ~~ta~~]]]]].
 see he him
 ‘He saw him.’

This modular theory of radical *pro*-drop, as shown in (1c’) and (1d’), allows us to reconsider the status of Mandarin Chinese as a language that freely allows null arguments. I have shown that, upon closer examination, many ‘argumentless’ sentences cannot be analyzed as instances of *pro*-drop phenomena; on

my analysis, the apparently elided argument(s) of the verb still occupy their base-generated positions, but are prevented from surfacing at PF by syntactic mechanisms like TP-ellipsis and VP-ellipsis. The modular analysis also admits the existence of subject *pro* in Mandarin Chinese, whose interpretation is dependent on a covert topic in the same clause.

When it comes to analyzing empty categories, linguists often focus exclusively on the sentences that contain the missing items themselves, and ignore the contexts that surround them. Analyses which follow this approach not only fail to accurately characterize empty categories but also over-generate flawed results. The analysis developed in my dissertation embraces discourse as a significant factor. I argue that incorporation of discourse into any account of ellipsis is essential, since Mandarin Chinese, unlike Romance languages such as Spanish and Italian, does not rely on inflectional morphology to recover the content of empty categories. I hope that the analyses presented in my dissertation prove useful to those investigating the intrinsic properties of empty categories, and I look forward to applying to other languages the approach that I have developed over the course of this project.

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