

**“Subjectless” Sentences and TP-ellipsis****Chi-ming Louis Liu**

*Abstract.* Mandarin Chinese is reported to drop arguments relatively freely. During the past thirty years, a lot of attention has been devoted to analyzing Mandarin “subjectless” sentences. Among various analyses, the least controversial approach has been to assume that Mandarin Chinese is a *pro*-drop language, a phenomenon that many scholars associate with its status as a topic-prominent language. Although this analysis accurately captures the properties of most “subjectless” sentences in Mandarin Chinese, it cannot be applied to all sentences without overt subjects. In this paper, I demonstrate that when the syntactic properties of certain “subjectless” sentences are taken into consideration, many apparent empty subject positions are not empty at all: the illusion of emptiness results from the application of a mechanism consisting of verb movement or focus movement plus clausal ellipsis.

**Keywords:** *pro*; topics; variables; clausal ellipsis; focus movement

**1. Introduction**

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 1982, Jaeggli 1982, Perlmutter 1971, Taraldsen 1978, among others).

Huang (1984) points out an asymmetry in the interpretation of empty subjects and empty objects in Mandarin Chinese.<sup>1</sup>

---

<sup>1</sup> The same observation has been made for Japanese; see Kuroda (1965).

- (1) 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].’
- (2) a. John said that he knew Bill.  
 b. John said that Bill knew him.

Huang claims that the empty subject in (1a) and the pronoun *he* in (2a) 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 (1b) and the pronoun in (2b), since only the latter can co-refer with the matrix subject, while the former must refer to a topic in the previous discourse. The same asymmetry is observable in the following pair of sentences.

- (3) a. *Zhangsan<sub>i</sub> xiwang [ e<sub>i</sub> keyi kanjian Lisi ].*  
 Zhangsan hope can see Lisi  
 ‘Zhangsan<sub>i</sub> hopes that [he<sub>i</sub>] can see Lisi.’
- b. *\*Zhangsan<sub>i</sub> xiwang [ Lisi keyi kanjian e<sub>i</sub> ].*  
 Zhangsan hope Lisi can see  
 ‘Zhangsan<sub>i</sub> hopes that Lisi can see [him<sub>i</sub>].’

In (3a), the null subject in the embedded clause can co-refer with the matrix subject, but the same co-reference cannot hold between the empty category in (3b) and *Zhangsan*. The null embedded object must pick up its referent 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.

- (4) a. *neige ren<sub>i</sub>, Zhangsan shuo [ Lisi bu renshi e<sub>i</sub> ].*  
 that man, Zhangsan say Lisi not know  
 ‘That man<sub>i</sub>, Zhangsan said Lisi did not know e<sub>i</sub>.’

- b. *neige ren<sub>i</sub>, Zhangsan xiwang [Lisi keyi kanjian e<sub>i</sub>].*  
 that man, Zhangsan hope Lisi can see  
 ‘That man<sub>i</sub>, Zhangsan hopes that Lisi can see e<sub>i</sub>.’

In the sentences in (4), the null object is co-referential with the overt topic that appears in sentence-initial position.

Given these facts, Huang (1984) proposes that (1b) should be analyzed as in (5), with the null object bound by a covert topic. Note that, since the covert topic is an A'-element, the null object is considered a variable.

- (5) *[<sub>Top</sub> e<sub>i</sub>], [Zhangsan shuo [Lisi bu renshi e<sub>i</sub>]].*  
 Zhangsan say Lisi not know  
 ‘\*[Him<sub>i</sub>], Zhangsan said that Lisi didn’t know e<sub>i</sub>.’

Along the same lines, when the null subject refers to a discourse-prominent topic, we can analyze the sentence as having the structure in (6). Here, a covert topic binds the null subject in the embedded clause:

- (6) *[<sub>Top</sub> e<sub>i</sub>], [Zhangsan shuo [e<sub>i</sub> bu renshi Lisi]].*  
 Zhangsan say not know Lisi  
 ‘\*[He<sub>i</sub>], Zhangsan said that e<sub>i</sub> didn’t know Lisi.’

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 1989, among others).

- (7) *neichang huo, xingkuai xiaofangdui lai de zao.* (Li & Thompson 1989)  
 that fire fortunately fire-brigade come COMP early  
 ‘That fire, fortunately the fire brigade came early.’

The nominal phrase *neichang huo* ‘that fire’ in (7) does not satisfy any of the grammatical requirements met by ordinary subjects and objects; instead, it functions solely 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*: Mandarin Chinese, which allows arguments to drop, 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:

- (8) 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), which is essentially equivalent to Binding Principle B (Chomsky 1982), 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 see how Huang (1984) deals with the sentences in (9) in terms of DJR and GCR.

- (9) 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 (9a) 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 (9b), 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—in this case, 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. (9c) can be analyzed on a par with (9a), 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 (9a)-(9c) is limited to a variable interpretation. 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 possibility is illustrated in (9d), 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 (9d) 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 (9e), however, DJR and GCR conspire to eliminate *pro* as a possibility. As a result, null objects can only be analyzed as variables.

In a nutshell, under Huang’s framework, a null subject can be analyzed as *pro* or as a topic-bound variable, while a null object can only be a topic-bound variable.<sup>2</sup>

This paper is organized as follows. In Section 2, I argue that not all sentences without subjects are genuine null-subject sentences, which means that the subject positions in certain sentences are not actually empty at all. Two constructions in particular are addressed under this analysis: answers to yes-no questions and answers to *wh*-questions. I propose to derive yes-no responses containing ‘empty’ subject positions via movement of the verb followed by clausal ellipsis (Simpson 2015), and attribute the apparent empty subject positions in *wh*-responses to the combined effect of *v*P-movement and TP-ellipsis. This analysis suggests that in addition to the proposal of Huang (1984, 1989), we need a different mechanism to account for the derivation of some Mandarin “subjectless” sentences in which the subject and its antecedent are not overtly present simultaneously. Section 3 concludes the paper.

## 2. “Subjectless” sentences and TP-ellipsis

Since Huang (1984, 1989), Mandarin Chinese has been considered a radical *pro*-drop language, meaning that subjects and objects in this language can be easily dropped in sentences, as long as their contents are recoverable from discourse. 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. Therefore, when we are presented with transitive and intransitive

---

<sup>2</sup> There is a fair amount of work in the literature addressing the formation of empty argument positions. To name a few representative examples: Duguine (2014) suggests that we should embrace Fox’s (2000) NP-Parallelism as a licensing condition for determining when a particular argument can be dropped; Li (2014) proposes a novel type of empty category, called *true empty category*, to deal with empty object positions in certain sentences whose properties cannot be captured by earlier analyses; Miyagawa (2010) claims that *pro* is available in languages that have agreement, and furthermore that Chinese is an agreement language; Saito (2007) attributes argument ellipsis to the absence of agreement; Şener and Takahashi (2010) uses a similar approach to account for the viability of Turkish argument ellipsis in object but not in subject position; Tomioka (2003) proposes a unified semantic account for objectless sentences in Japanese. Due to the limit of space and the fact that the themes of these papers differ from mine, I will not discuss this body of work in detail in this paper.

sentences alone, like (10a) and (10b) (with no content preceding the verb), we tend to assume the presence of empty categories in subject position, and analyze these empty categories as a variable bound by a topic that is prominent in the previous discourse context.<sup>3</sup>

(10) (In)transitive sentences:

- a.  $\emptyset$  V object
- b.  $\emptyset$  V

It is clear that discourse indeed helps speakers of Mandarin Chinese interpret “subjectless” sentences in the absence of rich inflectional morphology. However, this fact does not necessarily imply that *every* “subjectless” sentence in Mandarin Chinese contains a null subject.

The following two subsections will delve into the syntactic properties of apparent null-subject sentences, while simultaneously developing an argument for a higher, sentence-level mechanism. I will demonstrate that it is possible to attribute the absence of a subject to such a mechanism, rather than a true empty argument position.

### *2.1 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 1, I illustrated how Huang (1984) deals with sentences containing empty argument categories. One representative sentence pertinent to our current discussion is repeated below.

(11) *Lai-le.*

come-ASP

‘[He/She] has come.’

In order to account for the derivation of sentences like (11), we need to know the discourse contexts that make them viable. The following example shows that (11) can serve as the follow-up to a yes-no question.

---

<sup>3</sup> Huang’s (1984, 1989) analysis largely depends on an argument’s topichood. The simplest definition of topic is proposed in Reinhart (1981): a topic is ‘what the sentence is about.’ Mandarin Chinese has long been viewed as a topic-comment language (see Huang 1982, Li and Thompson 1989, Ning 1993, Shi 1989, 2000, Shyu 1995, and Tsao 1977, 1990); in addition, scholars who have investigated the properties of topics (Jiang 1991, Qu 1994, and Shi 2010) identify three such properties that are particularly salient: (i) topics must be definite, (ii) topics must be derived from discourse, and (iii) in Mandarin Chinese, a topic can be followed by a particle.

- (12) a. *Yuehan lai-le ma?*  
 John come-ASP Q  
 ‘Has John come?’
- b. *Lai-le.*  
 come-ASP  
 [John] has come.

When (12b) serves as the affirmative answer to a yes-no question, it need not necessarily contain the overt subject. In this case, the missing subject in (12b) is interpreted as referring to the person denoted by the matrix subject in the question.<sup>4</sup> Two more examples are provided below.

- (13) a. *Yuehan qi-chuang-le ma?*  
 John arise-bed-ASP Q  
 ‘Has John got up?’
- b. *Qi-chuang-le.*  
 arise-bed-ASP  
 ‘[John] has got up.’
- (14) a. *Bier biye-le ma?*  
 Bill graduate-ASP Q  
 ‘Did Bill graduate?’
- b. *Biye-le.*  
 graduate-ASP  
 ‘[Bill] graduated.’

As in (12), the subjects are not overtly realized in (13b) and (14b); even so, addressees of such sentences have no problem identifying the persons who got up and graduated.

The facts illustrated above seem to suggest that yes-no answers can be analyzed as containing a null subject that is bound by the discourse topic generated from the question sentence. However, the following example indicates that the disappearance of subjects is constrained in this context:

---

<sup>4</sup> 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 paper, in order not to arouse unnecessary confusion about the use of sentences that do not contain subjects, I exclude cases in which argument positions refer to inanimate entities, and focus on sentences whose missing arguments are animate and referential.

- (15) a. *Yuehan kanjian Bier le ma?*  
 John see Bill SFP Q  
 ‘Did John see Bill?’
- b. <sup>?(?)</sup>*Kanjian Bier le.*  
 see Bill SFP  
 ‘[John] saw Bill.’
- (16) a. *Yuehan zhifu Bier le ma?*  
 John subdue Bill SFP Q  
 ‘Did John subdue Bill?’
- b. <sup>?(?)</sup>*Zhifu Bier le.*  
 subdue Bill SFP  
 ‘[John] subdued Bill.’

The utterances in (15a) and (16a) are like those in (13a) and (14a) in being yes-no questions that seek to confirm whether or not the subject conducted the action denoted by the VP of the sentence. However, the “subjectless” responses in (15b) and (16b), unlike their counterparts in (13b) and (14b), are not fully acceptable in Mandarin Chinese. Two more similar examples are provided below.

- (17) a. *Mali renshi Bier ma?*  
 Mary know Bill Q  
 ‘Does Mary know Bill?’
- b. *\*Renshi Bier.*  
 know Bill  
 ‘[Mary] knows Bill.’
- (18) a. *Yuehan xihuan Mali ma?*  
 John like Mary Q  
 ‘Does John like Mary?’
- b. *\*Xihuan Mali.*  
 like Mary  
 ‘[John] likes Mary.’

(17) and (18) collectively demonstrate that subjects cannot always disappear in yes-no answers; inserting a corresponding proper name or the overt pronoun *ta* ‘(s)he’ in the sentence-initial position in the above ungrammatical sentences can turn these sentences grammatical.



The clear question raised by these examples is: why can't the response sentences in (15)-(18) drop the subject, while those in (13)-(14) can? Notice that these two sets of sentences differ from each other in (and only in) the fact 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 omitting the subject, 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 (15)-(18). In these responses, the utterance can contain a null subject, *provided that the object is also null*:<sup>5</sup>

- (19) a. *Yuehan kanjian Bier le ma?*  
 John see Bill SFP Q  
 'Did John see Bill?'
- b. *Kanjian-le.*  
 see-ASP  
 '[John] saw [Bill].'
- (20) a. *Yuehan zhifu Bier le ma?*  
 John subdue Bill SFP Q  
 'Did John subdue Bill?'
- b. *Zhifu-le.*  
 subdue-ASP  
 '[John] subdued [Bill].'

The contrast between (15b)/(19b) and (16b)/(20b) suggests the following generalization: a transitive yes-no response can lack its subject if and only if it also lacks the object. Further evidence for this claim is provided in the following two examples.

- (21) a. *Mali renshi Bier ma?*  
 Mary know Bill Q  
 'Does Mary know Bill?'
- b. *Renshi.*

---

<sup>5</sup> As the discussion proceeds, I will illustrate that the argument positions in these sentences, both subject and object, 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.

know  
 ‘[Mary] knows [Bill].’

- (22) a. *Yuehan xihuan Mali ma?*  
 John like Mary Q  
 ‘Does John like Mary?’
- b. *Xihuan.*  
 like  
 ‘[John] likes [Mary].’

When both arguments of the transitive verbs in (19)-(22) are simultaneously left unpronounced, 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. This type of one-word construction is what Holmberg (2001) calls a *simple yes/no reply*.<sup>6</sup>

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:

- (23) Q: *Onko Liisa kotona?* (Holmberg 2001)  
 is-Q Liisa at-home  
 ‘Is Liisa home?’
- A: *On.*  
 is  
 ‘Yes, she is.’

<sup>6</sup> Kuno (1982) makes the same observation for Japanese. One of the examples in his paper is presented below:

- (i) Speaker A: *Kimi wa kono hon o yomimasita ka?* (Kuno 1982:83)  
 you this book read  
 ‘Have you read this book?’
- Speaker B: a. *Hai, watasi wa sono hon o yomimasita.*  
 ‘Yes, I have read that book.’  
 b. *?? Hai, sono hon o yomimasita.*  
 ‘Yes, (I) have read that book.’  
 c. *Hai, yomimasita.*  
 ‘Yes, (I) have read (it).’

As we can see in this example, speakers of Japanese can also use a single verb to positively answer a yes-no question. Nevertheless, Kuno (1982) uses a deletion approach to account for such short answers. For details, please refer to Kuno (1982).

(24) Q: *Osaako Liisa puhua ranskaa?*  
 can-Q Liisa speak French  
 ‘Can Liisa speak French?’

A: *Osa.*  
 can  
 ‘Yes, she can.’

(25) 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), 3<sup>rd</sup> person subject pronouns, unlike 1<sup>st</sup> and 2<sup>nd</sup> person subject pronouns, cannot be dropped in Finnish. Therefore, the fact that 3<sup>rd</sup> person subject pronouns are not present in the answers in (23)-(25) 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’s (1972) analysis of contrastive focus, Holmberg (2001) claims that (i) polarity focus is derived by overt movement to the CP domain, and (ii) a polarity-focus operator  $\Sigma$  (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.

(26) Q: *Onko Matti käynyt Pariisissa?*  
 has-Q Matti been to Paris.  
 ‘Has Matti been to Paris?’

A: *On Matti käynyt Pariisissa.*  
 has Matti been to Paris.  
 ‘Matti HAS been to Paris.’

(26) 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, given the fact the subject canonically precedes the auxiliary in Finnish (see Holmberg et al. 1993 and Holmberg 2001), the auxiliary’s position before the subject in the answer in (26) indicates that the auxiliary has moved out of IP to the CP domain. Holmberg capitalizes on the observation



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

The meaning of the verbal answer *xihuan* ‘like’ in (29b) is equal to ‘Yes, I like it’ in English; the single-word verbal answer in (30b) can be paraphrased as ‘Yes, the plane took off from L.A’, a response that 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 (2015) 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.

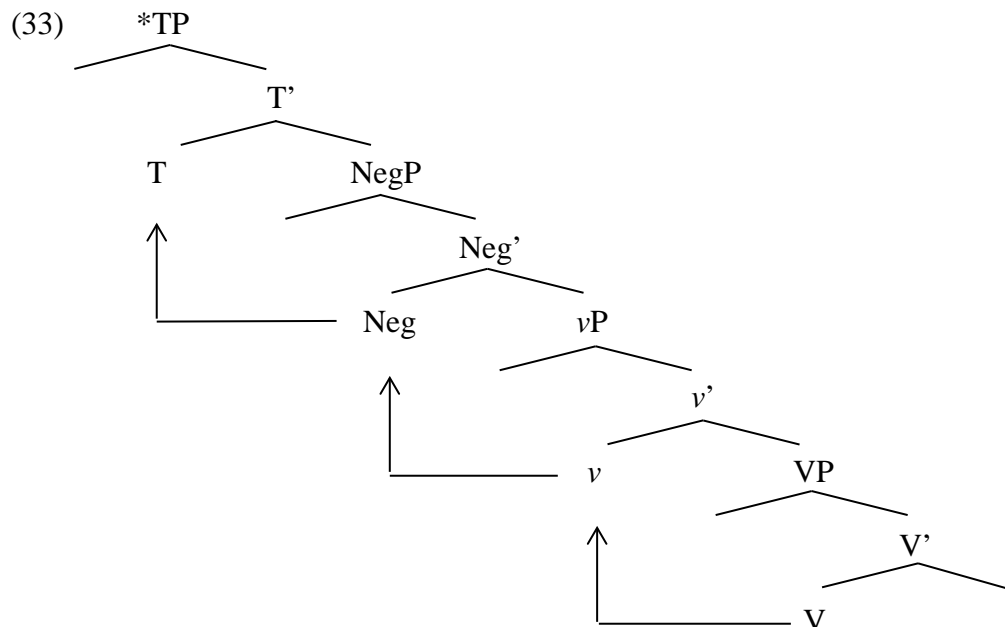
However, I notice that applying this analysis to verbal answers in Mandarin Chinese does not accommodate the well-established fact that verbs in Mandarin Chinese cannot move further than *vP* (Huang 1994, 1997, Lin 2001).

Two pieces of evidence against verb movement out of *vP* in Mandarin Chinese come from sentences in which verbs co-occur with adverbs or negation markers.

- |      |    |                             |                   |                   |                 |
|------|----|-----------------------------|-------------------|-------------------|-----------------|
| (31) | a. | <i>Yuehan</i>               | <i>changchang</i> | <i>chi</i>        | <i>binggan.</i> |
|      |    | John                        | often             | eat               | crackers        |
|      |    | ‘John often eats crackers.’ |                   |                   |                 |
|      | b. | <i>*Yuehan</i>              | <i>chi</i>        | <i>changchang</i> | <i>binggan.</i> |
|      |    | John                        | eat               | often             | crackers        |
|      |    | ‘John often eats crackers.’ |                   |                   |                 |
- 
- |      |    |  |                 |           |            |            |                  |
|------|----|--|-----------------|-----------|------------|------------|------------------|
| (32) | a. | <i>Yuehan</i>                              | <i>mingtian</i> | <i>bu</i> | <i>hui</i> | <i>da</i>  | <i>diandong.</i> |
|      |    | John                                       | tomorrow        | not       | will       | play       | video-game       |
|      |    | ‘John will not play video games tomorrow.’ |                 |           |            |            |                  |
|      | b. | <i>*Yuehan</i>                             | <i>mingtian</i> | <i>da</i> | <i>bu</i>  | <i>hui</i> | <i>diandong.</i> |
|      |    | John                                       | tomorrow        | play      | not        | will       | video-game       |
|      |    | ‘John will not play video games tomorrow.’ |                 |           |            |            |                  |

(31) and (32) show that placing the verb in front of the frequency adverb *changchang* ‘often’ and the negation marker *bu* ‘not’ renders the resulting sentences ungrammatical (see relevant diagnostics in Pollock 1989).

Thus, it appears that raising a verb out of *vP* is prohibited in Mandarin Chinese. In other words, the following derivation which respects Travis' (1984) Head Movement Constraint cannot take place:



Assuming that Mandarin negation markers occupy the specifier of *NegP*, the example in (32) demonstrates that a verb cannot move across *vP* and *NegP* to land in the structurally higher *TP* domain. 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. Some sluicing examples are given below.

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

Ross (1969) notices 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.

- (35) a. *Er will jemandem schmeicheln, aber sie wissen nicht,*  
 he wants someone.DAT flatter but they know not  
 {\*wer /\*wen /wem}.

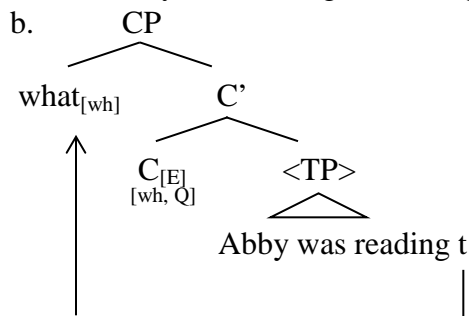
who.NOM who.ACC who.DAT

‘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.’

(35b) is the complete form of the sentence following *aber* ‘but’ in (35a). As we can see here, the Case of the sluiced *wh*-phrase *who* in (35a) is the same as the one in (35b). This fact suggests that the second sentence of (35a) is derived via movement of the *wh*-phrase and deletion of the following constituents. Based on these observations, Merchant (2001, 2004) proposes the following analysis of sluicing constructions:<sup>8</sup>

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



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 to suppress pronunciation of the complement of C — a TP, in this case.<sup>9</sup>

An interesting property of sluicing constructions is their insensibility to island boundaries.

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

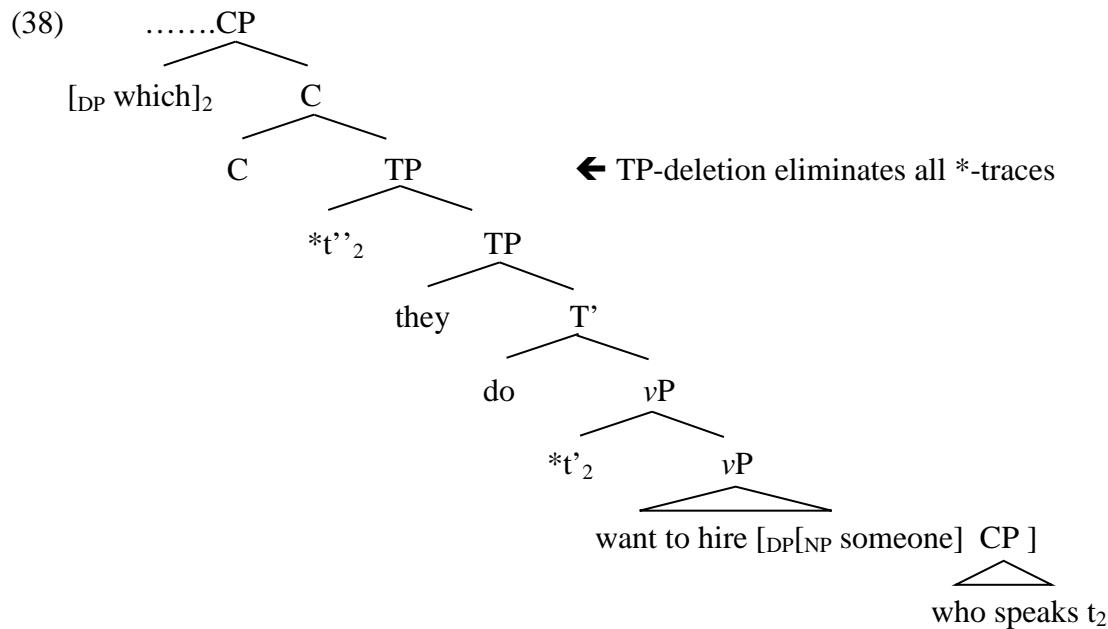
The sentence in (37) ends with the sluiced *wh*-phrase *which*, which is assumed to move from its base position under Merchant’s framework. However, given that *which* has moved out of a

<sup>8</sup> 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).

<sup>9</sup> Merchant (2001, 2004) assumes that the [E] feature is syntactically composed of [*uwh\**, *uQ\**], 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\**, *uQ\**] features on [E], so [E] combines with C.

complex NP, we should expect Subjacency effects to interact with it during its movement to a higher position. Thus, the grammaticality of (37) seems to pose a challenge to the well-known constraints against Subjacency violations.

Based on work by Fox and Lasnik (2003), Johnson (2002), Kennedy and Merchant (2000), Merchant (2008), 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, island violations incurred during the derivation itself do 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 (37) in the following way:



Adopting Fox’s (1999) assumption that *wh*-movement must proceed through each intermediate maximal projection, Merchant (2004) attributes the grammaticality of (37) to the idea that all offending island traces are erased with the application of TP-deletion, shown in (38).

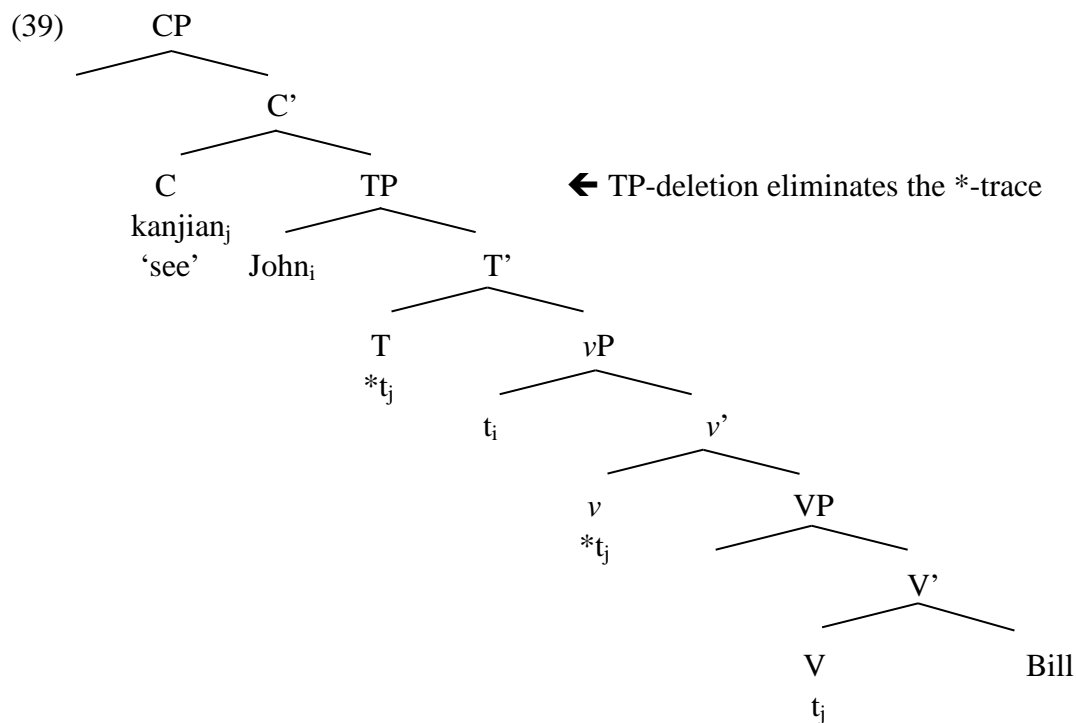
Let us now turn to Chinese verbal answers. Recall that verbs in Mandarin Chinese cannot move to a domain higher than *vP*, yet single, ‘argumentless’ verbs can appear as grammatical responses to yes/no questions. Inspired by Merchant’s work, I propose that verb movement to a position higher than *vP* in Mandarin Chinese, like Subjacency violations in English, can be tolerated, as long as the traces left by such movement do not remain in the final pronounced



structure. As a result, verbal movement can occur without violation in yes-no answers because all offending traces disappear along with the deletion of TP during the derivation. Take (19), repeated below, as an illustration:

- (19) a. *Yuehan kanjian Bier le ma?*                      b. *Kanjian-le.*  
       John    see     Bill    SFP    Q    see-ASP  
       ‘Did John see Bill?’    ‘[John] saw [Bill].’

The derivation of (19b) is shown below:



The putatively illegible movement of the verb *kanjian* ‘see’ to the CP domain leaves offending traces on T and *v*, respectively;<sup>10</sup> however, thanks to clausal ellipsis, the offending traces are eliminated together with all the other materials in TP. The resulting pronounced structure is thus rendered acceptable.<sup>11</sup> Based on this analysis, an accurate representation of sentences like (19b) is not the one in (40a), but the one in (40b).

<sup>10</sup> I simply use C rather than  $\Sigma$  to represent the landing site of the moved verb in this section, but semantically C and  $\Sigma$  are the same in this case in the sense that both of them indicate the existence of polarity focus.

<sup>11</sup> Under this analysis, the ungrammaticality of (31b) and (32b) can be attributed to the existence of the offending traces left by verb movement in the pronounced structures.



(42a), in which the verb is preceded by an empty subject position, is therefore inappropriate for (14b). Rather, (14b) should be analyzed as in (42b): again, the subject position remains full, but clausal ellipsis yields the illusion that it is empty.

- (42) a. [TP e<sub>i</sub> [vP biye<sub>K-V</sub> [VP t<sub>K</sub> ]]]  
 b. [CP biye<sub>K</sub> [TP ~~Bill~~ t<sub>K</sub> [vP t<sub>K</sub> [VP t<sub>K</sub> ]]]]

I have shown that the subject position in some cases cannot be left empty on its own in Mandarin Chinese; evidence for this claim comes from the fact that transitive sentences used as yes-no replies become unacceptable when only the subject is deleted. Based on Simpson’s (2015) analysis that verbal answers in Mandarin Chinese are derived through clausal ellipsis, I further account for the acceptability of verbal movement out of vP by positing the deletion of ungrammaticality-triggering traces as part of clausal ellipsis that elides TP.<sup>12</sup>

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

In the previous subsection, we saw that speakers of Mandarin Chinese can use “subjectless” sentences in answering yes-no questions; in fact, absence of subjects in Mandarin sentences is also observable in answers to *wh*-questions:

- (43) a. *Yuehan<sub>i</sub> zheng-zai zuo shenme?*  
 John PROG. do what  
 ‘What is John doing now?’  
 b. *Ta<sub>i</sub> zheng-zai [shuijiao / shang wang / kan xiaoshuo].*  
 he PROG. sleep / use internet / read novel  
 ‘He is sleeping. /He is using the Internet. /He is reading a novel.’  
 c. *Shuijiao. / Shang wang. / Kan xiaoshuo.*  
 sleep use internet read novel  
 ‘He is sleeping. /He is using the Internet. /He is reading a novel.’
- (44) a. *Yuehan<sub>i</sub> mingtian yao zuo shenme shi?*  
 John tomorrow will do what thing  
 ‘What will John do tomorrow?’

<sup>12</sup> There are a variety of ways to answer yes-no questions positively or negatively. I do not intend to claim that all yes-no replies should be dealt with in terms of the analysis proposed here; I believe that different answers require different analyses. The analysis that I adopt in this subsection is restricted to the answers consisting of only the verbs that are also present in the question-sentences.

- b. *Ta<sub>i</sub> mingtian yao [xie shuxue-zuoye / kan xiaoshuo].*  
 he tomorrow will write math-homework read novel  
 ‘He will do math homework tomorrow. / He will read a novel tomorrow.’
- c. *Xie shuxue-zuoye. / Kan xiaoshuo.*  
 write math-homework read novel  
 ‘He will do math homework tomorrow. / He will read a novel tomorrow.’

(43) and (44) 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.

The short answers shown in (43)-(44) are similar to the short answers to yes-no questions we saw in Section 2.1 in that they do not contain subjects, but different in that they may contain VP-internal arguments. This disparity suggests that we cannot rely on verb movement to derive these short-answer sentences. On the other hand, if these sentences are analyzed as containing a null subject bound by a covert topic, they should retain their grammaticality when the topic is expressed overtly. However, none of the following sentences can be used as felicitous answers to (43a) and (44a).

- (45) a. *\*Yuehan a, shuijiao. / \*Yuehan a, shang wang. / \*Yuehan a, kan xiaoshuo.*  
 John TOP sleep John TOP use internet John TOP read novel  
 Intended meaning: ‘John is sleeping. / John is using the Internet. / John is reading a novel.’
- b. *\*Yuehan a, xie shuxue-zuoye. / \*Yuehan a, kan xiaoshuo.*  
 John TOP write math-homework John TOP read novel  
 Intended meaning: ‘John will do math homework tomorrow. / John will read a novel tomorrow.’

(45a) and (45b) contain the overt topic *John* that is co-referential with the discourse topic generated in the respective previous sentences. The fact that these sentences do not convey the intended meanings in context suggests that they are fundamentally different from (43c) and (44c). In essence, this claim amounts to saying that (43c) and (44c) do not contain null topics and null subjects; otherwise, there would be no principled way to account for the grammaticality contrast between (43c)/(44c) and (45).

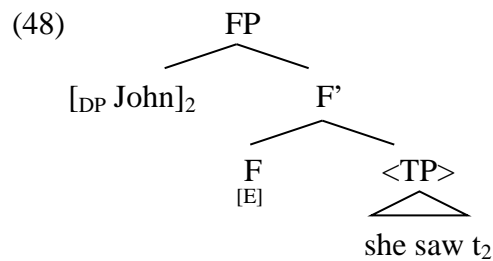
I propose that the short-answer sentences in (43) and (44) can be analyzed on a par with the fragment answers discussed in Merchant (2004). One of the fragment-answer examples is given below.

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

As we can see in (46), the fragment answer, *John*, can constitute a complete answer to the *wh*-question (46a); it is also possible to use a complete sentence (46c). Although Mandarin Chinese is a *wh*-in-situ language whereas English is not, if we compare examples like (46) with (43) and (44), we find that both types of question-answer pairs have the following properties in common:

- (47) The properties of answers to *wh*-questions in English and Mandarin Chinese:<sup>13</sup>
- (i) There are two different ways to answer such types of *wh*-questions: a simple response and a complex response.
  - (ii) The subject is not overtly present in the simple answer.
  - (iii) The simple answer is part of the complex answer.

Merchant (2004) proposes to derive nominal fragment answers via a two-step process. (48) illustrates his proposed derivation:

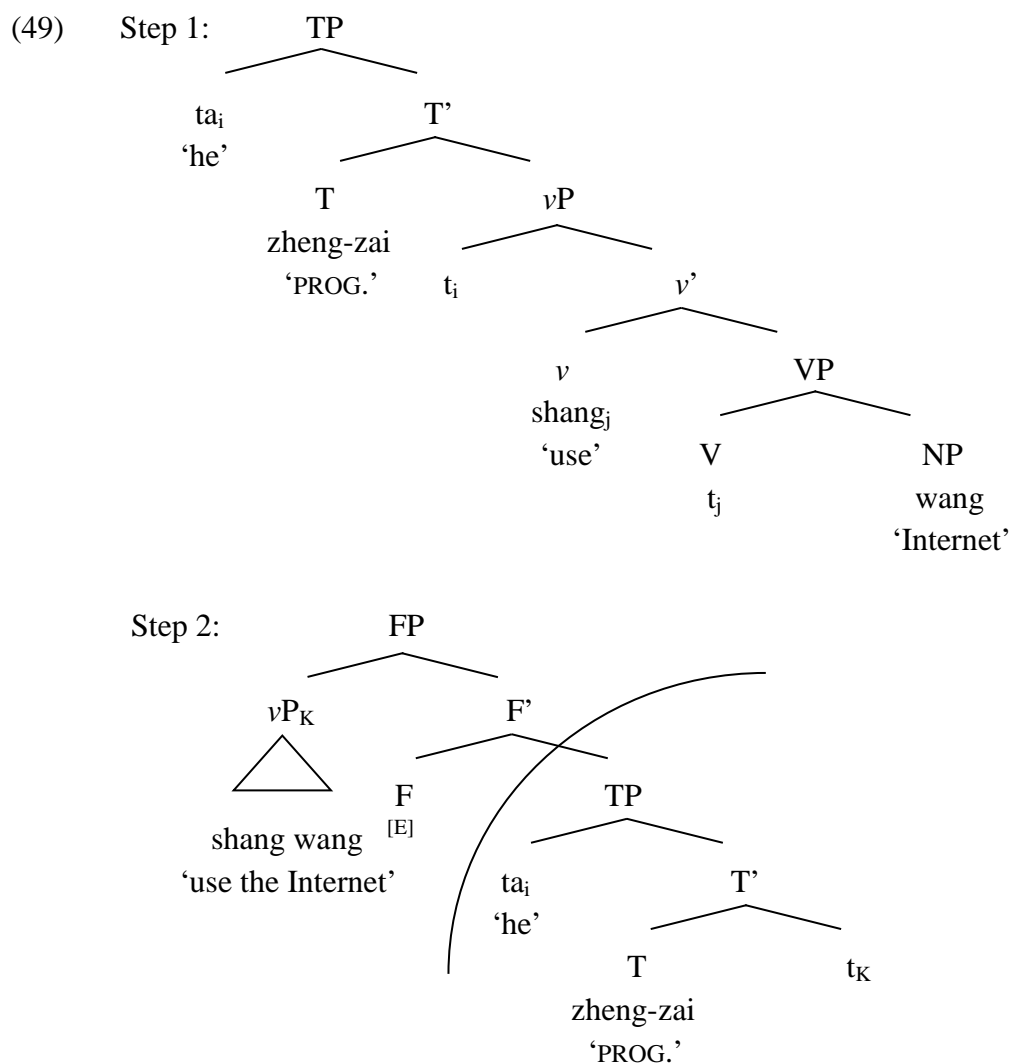


According to Merchant (2004), the [E] feature in fragment-answer sentences differs from the [E] feature in sluicing constructions in that its strong uninterpretable feature is not [*uwh*\*, *uQ*\*] but *uF*\*, a Focus feature that can only be checked by a focused element. Therefore, the nominal fragment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

<sup>13</sup> The *wh*-questions mentioned here only include questions involving the *wh*-phrases *who* and *what* and excluding *how*, *why*, *when*, and *where*.

which the [E] feature on the head of FP instructs the post-PF component not to pronounce its complement TP.

It seems reasonable to develop a parallel analysis for the Chinese sentence pairs in (43), (44), and the English pair in (46), given that both the Chinese and English short answers serve as foci for the full response. As a result, I propose that the Chinese short answers in (43) and (44), which I call *vP-fragment answers*, should be derived as follows. Take (43c), which is *shang wang* ‘use the Internet’, as an illustration:

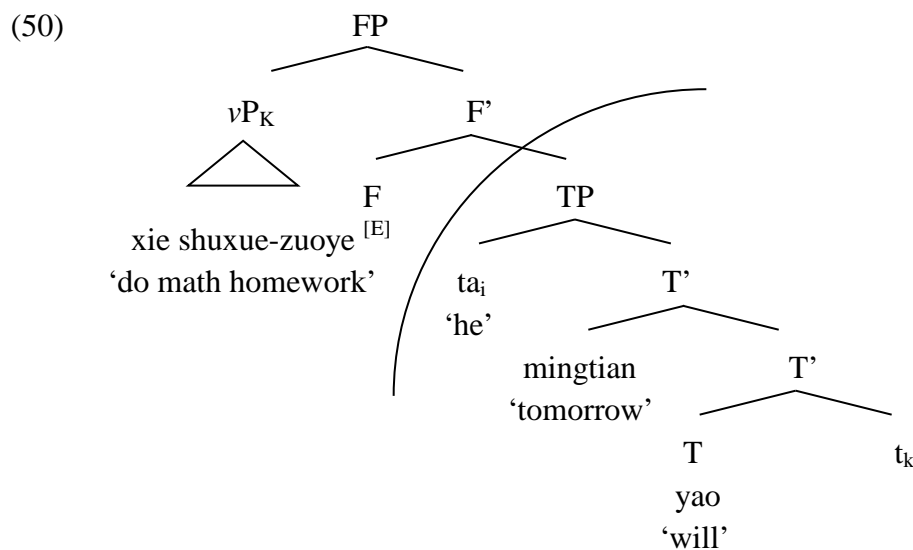


Step 1 derives the complete answer as it is given in (43b): the subject is base-generated in the Spec of  $vP$  (Kratzer 1996), and then raises to the Spec of TP; as for the verb, I simply follow

Huang’s (1994, 1997) and Lin’s (2001) analysis of V-to-*v* movement in Mandarin Chinese, where the verb is base-generated in the head of VP and lands in the head of *v*P.<sup>14</sup>

I propose that *v*P movement, like nominal-fragment-answer movement, is motivated by the need to check  $\mu F^*$  on the [E] feature. More specifically, in English fragment-answer constructions, the focused nominal is responsible for checking  $\mu F^*$ ; in Mandarin *v*P-fragment answers, it is the *v*P part of the entire sentence that is focused, so it must be fronted to check the  $\mu F^*$  feature of [E] on F.<sup>15</sup> 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.

Along the same lines, the short answer in (44c) is derived as follows.



Three major steps are involved in (50): F merges with TP; *v*P moves to the FP domain; TP-ellipsis takes place. The final step of TP-ellipsis deletes the overt pronoun *ta* ‘he’, the temporal adverb *mingtian* ‘tomorrow’, and the modal *yao* ‘will.’<sup>16</sup>

<sup>14</sup> Since this paper does not zero in on the fraught question of the existence of Mandarin Chinese tense, 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 paper, 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.

<sup>15</sup> Semantically, the focus head F in *v*P-fragment answers can be considered a kind of exhaustive focus. Please see É. Kiss (1998).

<sup>16</sup> Some people may wonder why English, unlike Mandarin Chinese, cannot use the VP-part of a sentence to answer a *wh*-question. There are two possibilities to entertain regarding this phenomenon: (i)  $\mu F^*$  anchored on the E feature in English can only be checked off by a nominal phrase and cannot by a VP; (ii) there are two focus heads available in language, bearing different focus features: one is responsible for attracting nominals and the other draws VPs. English has the former and Mandarin Chinese has the latter.

The analysis shown in (49) and (50) reveals an important point that I have attempted to emphasize throughout this paper: not all Mandarin “subjectless” sentences are null-subject sentences, since the canonical subject positions in some of these sentences might still be filled with an overt nominal phrase throughout the derivation; in (49) and (50), for instance, the subject position is occupied by *ta* ‘he.’

Several pieces of evidence can be found to support the analysis that I propose here. First, as we saw in (43) and (44), although *vP*-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.

Second, in the question-answer context discussed here, the same sequence of words may express different meanings. For example, although *kan xiaoshuo* ‘read a novel’ in (43c) and (44c) serves as a short answer to (43a) and (44a), they do not possess the same meaning; *kan xiaoshuo* means ‘He is reading a novel’ in (43c), but it means ‘He will read a novel tomorrow’ in (44c). This fact suggests that short responses to *wh*-questions like (43c) and (44c) should not be analyzed as a null-subject sentence preceded by a covert topic. If we did so, we would need to assume the existence of a covert progressive marker, a covert modal, and a covert temporal adverb; otherwise, we could not account for the different meanings expressed by *kan xiaoshuo*. Since such an analysis is not compatible with the current linguistic theory, it is better to rely on the movement-plus-ellipsis analysis proposed here to account for the syntactic and semantic properties of these short sentences.

In addition, the *vP*-preposing analysis predicts that *vP*-fragment answers cannot appear with other non-*vP*-level constituents. This prediction is borne out by the unacceptability of the following sentence.

- (51) #*Mingtian xie shuxue-zuoye.*  
 tomorrow write math-homework  
 Intended meaning: ‘He will do math homework tomorrow.’

(51) cannot be used as a response to the question in (44a). We can attribute the infelicity of (51) 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 *vP*. Therefore, answers like (51) are infelicitous, which offers further support for the analysis that I propose here.

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



- (52) a. *Yuehan<sub>i</sub> mingtian hui zuo shenme shi?*  
 John tomorrow will do what thing  
 ‘What will John do tomorrow?’
- b. *Ta<sub>i</sub> mingtian hui kan taziji<sub>i</sub> mai-de xiaoshuo.*  
 he tomorrow will read himself buy-DE novel  
 ‘He will read the novel that he bought tomorrow.’
- c. *Kan taziji mai-de xiaoshuo.*  
 read himself buy-DE novel  
 ‘He will read the novel that he bought tomorrow.’

*Taziji* ‘himself’ is a reflexive that requires the presence of an appropriate antecedent in the same sentence, as illustrated in (52b). Notice, however, that although the vP-fragment answer in (52c) does not contain an antecedent for the reflexive *taziji* ‘himself’, speakers of Mandarin Chinese have no problem understanding the identity of this reflexive. We can account for the co-referentiality between the reflexive and its antecedent in terms of the mechanism proposed in this subsection:

- (53) a.  $[_{TP} Ta_i \text{ mingtian } hui \text{ } [_{vP} \text{ kan } taziji_i \text{ mai-de } xiaoshuo ]]$ .  
 he tomorrow will read himself buy-DE novel  
 ‘He will read the novel that he bought tomorrow.’
- b.  $[_{FP} [_{vP} \text{ Kan } taziji_i \text{ mai-de } xiaoshuo]_j \text{ } F [_{TP} \text{ ta}_i \text{ — } \text{mingtian} \text{ — } \text{hui} \text{ — } t_j \text{ — } ]]$   
 read himself buy-DE novel he tomorrow will
- 

According to Binding Principle A, the reflexive *taziji* ‘himself’ has to be bound by an antecedent in the same governing category. As we can see in (53a), this condition is satisfied when vP is in-situ, since the reflexive *taziji* is then bound by the matrix subject *ta* ‘he’; on the other hand, the absence of an antecedent for *taziji* in (52c) can be attributed to vP-preposing followed by TP-ellipsis, as shown in (53b).

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

- (54) a. *Ta<sub>i</sub> mingtian hui zuo shenme shi?*  
 he tomorrow will do what thing  
 ‘What will he do tomorrow?’

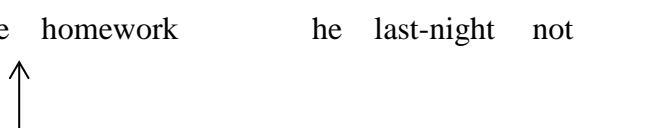
- b. *Ta<sub>i</sub> mingtian hui wan Yuehan<sub>j</sub> jielai-de diannao.*  
 he tomorrow will play John borrow-DE computer  
 ‘He will play on the computer that John borrowed tomorrow.’
- c. *Wan Yuehan<sub>j</sub> jielai-de diannao.*  
 play John borrow-DE computer  
 ‘He will play on the computer that John borrowed tomorrow.’

As in the complete-sentence answer (54b), the person conducting the action mentioned in the *vP*-fragment answer in (54c) 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 *vP*-fragment answer and its non-elliptical counterpart concerns a *wh*-question containing a negative marker.

- (55) 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 *vP* part of the question. A point worth mentioning in this case is that, although this short *vP*-fragment does not contain a negative marker, the meaning of this sentence is the same as that of its complete counterpart, (55b), in which *mei* ‘not’ is overtly present. This fact suggests that the *vP*-fragment answer is derived via focus movement followed by TP-ellipsis.

- (56)  $[_{FP} [_{vP} \textit{xie zuoye}]_i \quad F [_{TP} \textit{ta zuowan mei t_i} ]]$   
 write homework                      he last-night not  


The example in (55c) further demonstrates that there can be no topic-bound variable preceding the *vP*, *xie zuoye* ‘do homework’; if there were, its meaning would be the one shown below.

- (57) *Ta a, xie zuoye.*  
 he TOP write homework  
 ‘He did his homework.’

Inserting the overt topic *ta* ‘he’ in front of the *vP*-fragment answer would render the negative reading unavailable; (57) can only mean *He did his homework*, and thus cannot serve as an answer to the question in (55a).<sup>17</sup>

The analysis that I propose here not only accounts for the absence of an overt subject in *vP*-fragment answers in Mandarin Chinese, but also captures the interpretation of such short sentences more precisely.<sup>18</sup>

### 3. Conclusion

In this paper, I demonstrate that TP-ellipsis plays an important role in Mandarin Chinese. Huang (1984, 1989) proposes that when null subjects or objects in Mandarin Chinese refer to a prominent discourse topic, they should be treated as topic-bound variables. While I agree with Huang (1984, 1989) in that discourse context is a crucial factor in determining a sentence’s ability to host an empty argument position, I attribute the formation of certain Mandarin “subjectless” sentences to the joint effect of movement and clausal ellipsis.

More specifically, following Simpson (2015), I argue that the apparent vacancy of a subject position in (in)transitive yes-no responses is in fact the result of movement of the verb into CP, followed by clausal ellipsis. In addition, I propose that answers to *wh*-questions should be analyzed on a par with English nominal fragment answers, which are derived by focus movement that attracts the *vP*-part of the sentence to CP, followed by TP-ellipsis. In other words,

<sup>17</sup> Mandarin Chinese is not the only language that can use the VP part of a sentence to answer a *wh*-question; Swedish can do so, too. For Swedish data, please refer to Holmberg (2003).

<sup>18</sup> In addition to (55c), Speakers of Mandarin Chinese can answer (55a) negatively by using the following “subjectless” sentence:

- (i) *Mei xie zuoye.*  
 not write homework  
 ‘He did not do homework.’

(i) differs from (55c) in that it contains a negative marker *mei* ‘not.’ There are two possible ways to analyze (i): we can claim that there is an empty subject position in (i), which is a topic-bound-variable; or we can propose that it is the whole NegP, which contains the negative marker *mei* ‘not’ and the *vP* following it, that gets preposed to the Spec of FP.

both analyses consider short responses to yes-no questions and *wh*-questions to derive from full-fledged sentences, since their syntactic and semantic properties pattern with their full sentential counterparts. Thus, I conclude that short answers used to respond to Mandarin yes-no questions and *wh*-questions cannot be treated as genuine null-subject sentences, since the subject position remains filled with a nominal phrase throughout the derivation.

To end on a general note, this paper illustrates an important point: not all Mandarin “subjectless” sentences contain null subjects, some of which are derived by the mechanism built on movement and ellipsis.

## References

- Borer, Hagit. 1983. *Parametric Syntax: Case Studies in Semitic and Romance Languages*. Dordrecht: Foris.
- Chao, Wynn. 1987. *On Ellipsis*. Amherst, MA: University of Massachusetts, Amherst dissertation.
- Chomsky, Noam. 1972. *Studies on Semantics in Generative Grammar*. The Hague: Mouton & Co.
- Chomsky, Noam. 1982. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3(3). 239-282.
- Duguine, Maia. 2014. Argument ellipsis: a unitary approach to pro-drop. *The Linguistic Review* 31(3-4). 515-549.
- É. Kiss, Katalin. 1998. Identificational focus and information focus. *Language* 74(2). 245-273.
- Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30(2). 157-196.
- Fox, Danny. 2000. *Economy and Semantic Interpretation*. Cambridge, MA: MIT Press.
- Fox, Danny and Howard Lasnik. 2003. Successive-cyclic movement and island repair: the difference between sluicing and VP-ellipsis. *Linguistic Inquiry* 34(1). 143-154.
- Ginzburg, Jonathan and Ivan Sag. 2000. *Interrogative Investigations: The Form, Meaning, and Use of English Interrogatives*. Stanford: CLSI
- Holmberg, Anders. 2001. The syntax of yes and no in Finnish. *Studia Linguistica* 55(2). 141-175.
- Holmberg, Anders. 2003. Topic drop or VP focus. In Lars-Olof Delsing, Cecilia Falk, Gunlög Josefsson and Halldór Á. Sigurðsson (ed.), *Grammar in Focus. Festschrift for Christer Platzack 18*, 159-166. Lund, Sweden: Lund University.
- Holmberg, Anders. 2005. Is there a little *pro*? Evidence from Finnish. *Linguistic Inquiry* 36(4). 533-564.
- Holmberg, Anders. 2007. Null subjects and polarity focus. *Studia Linguistica* 61(3). 212-236.
- Holmberg, Anders, Urpo Nikanne, Irmeli Oraviita, Hannu Reime, and Trond Trosterud. 1993. The structure of INFL and the finite clause in Finnish. In Anders Holmberg and Urpo Nikanne (ed.), *Case and other functional categories in Finnish syntax*, 176-206. Berlin: Mouton de Gruyter.
- Huang, C.-T. James. 1982. *Logical Relations in Chinese and the Theory of Grammar*. Cambridge, MA: MIT dissertation.
- Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15(4). 531-574.
- Huang, C.-T. James. 1989. Pro-drop in Chinese: a generalized control theory. In Osvaldo Jaeggli and Kenneth

- Safir (ed.), *The Null Subject Parameter*, 185-214. Dordrecht: Kluwer.
- Huang, C.-T. James. 1994. Verb movement and some syntax-semantics mismatches in Chinese. *Chinese Languages and Linguistics* 2. 587-613.
- Huang, C.-T. James. 1997. On lexical structure and syntactic projection. *Chinese Languages and Linguistics* 3. 45-89.
- Jiang, Zixin. 1991. *Some Aspects of the Syntax of Topic and Subject in Chinese*. Chicago: University of Chicago dissertation.
- Jaeggli, Osvaldo. 1982. *Topics in Romance Syntax*. Dordrecht: Foris.
- Johnson, Kyle. 2002. Towards an etiology of adjunct islands, Ms., University of Massachusetts, Amherst.
- Kennedy, Christopher and Jason Merchant. 2000. Attributive comparative deletion. *Natural Language and Linguistic Theory* 18(1). 89-146.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In Johan Rooryck and Laurie Zaring (ed.), *Phrase structure and the Lexicon*, 109-137. Dordrecht: Kluwer.
- Kuno, Susumu. 1982. Principles of discourse deletion – Case studies from English, Russian and Japanese. *Journal of Semantics* 1(1). 61-93.
- Kuroda, Sige-Yuki. 1965. *Generative Grammatical Studies in the Japanese Language*. Cambridge, MA: MIT dissertation.
- Laka, Itziar. 1990. *Negation in Syntax*. Cambridge, MA: MIT dissertation.
- Lasnik, Howard. 2001. When can you save a structure by destroying it? In Minjoo Kim and Uri Strauss (ed.), *Proceedings of the North East Linguistic Society 31*, 301-320. Amherst: Graduate Linguistics Students Association.
- Li, Charles and Sandra Thompson. 1989. *Mandarin Chinese: A Functional Reference Grammar*. University of California Press.
- Li, Y.-H. Audrey. 1985. *Abstract Case in Chinese*. Los Angeles, CA: University of Southern California dissertation.
- Li, Y.-H. Audrey. 1990. *Order and constituency in Mandarin Chinese*. Dordrecht: Kluwer.
- Li, Y.-H. Audrey. 2014. Born empty. *Lingua* 151:43-68.
- Liao, Wei-wen. 2004. *The Architecture of Aspect and Duration*. Hinchu, Taiwan: National Tsing Hua University MA thesis.
- Lin, Jo-Wang. 2003. Temporal reference in Mandarin Chinese. *Journal of East Asian Linguistics* 12(3). 259-311.
- Lin, Jo-Wang. 2006. Time in a language without tense: The case of Chinese. *Journal of Semantics* 23(1). 1-53.
- Lin, Jo-Wang. 2010. A tenseless analysis of Mandarin Chinese revisited: a response to Sybesma 2007. *Linguistic Inquiry* 41(2). 305-329.
- Lin, T.-H. Jonah. 2001. *Light Verb Syntax and the Theory of Phrase Structure*. Irvine, CA: University of California, Irvine dissertation.
- Lobeck, Anne. 1995. *Ellipsis: Functional Heads, Licensing, and Identification*. Oxford: Oxford University Press.
- Merchant, Jason. 2001. *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2004. Fragments and Ellipsis. *Linguistics and Philosophy* 27(6). 661-738.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In Kyle Johnson (ed.), *Topics in Ellipsis*, 132-153. Cambridge: Cambridge University Press.

- Miyagawa, Shigeru. 2010. *Why Agree? Why Move?: Unifying Agreement-based and Discourse-configurational Languages*. Cambridge, MA: MIT Press.
- Ning, Chunyan. 1993. *The Overt Syntax of Relativization and Topicalization in Chinese*. Irvine, CA: University of California, Irvine dissertation.
- Nunes, Jairo and Juan Uriagereka. 2000. Cyclicity and extraction domains. *Syntax* 3(1). 20-43.
- Perlmutter, David. 1971. Deep and Surface Constraints in Syntax. New York: Holt, Rinehart and Winston.
- Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20(3). 365-424.
- Qu, Yanfeng. 1994. Object Noun Phrase Dislocation in Mandarin Chinese. Vancouver: University of British Columbia dissertation.
- Reinhart, Tanya. 1981. Pragmatics and linguistics: An analysis of sentence topics. *Philosophica* 27(1). 53-94.
- van Riemsdijk, Henk. 1978. *A Case Study in Syntactic Markedness: The Binding Nature of Prepositional Phrases*. Dordrecht: Peter De Ridder.
- Ross, John R. 1969. 'Guess Who?' In Robert Binnick, Alice Davison, Georgia Green, and Jerry Morga (ed.), *Papers from the 5th Regional Meeting of the Chicago Linguistic Society*, 252-286. Chicago: Chicago Linguistic Society.
- Saito, Mamoru. 2007. Notes on East Asian argument ellipsis. *Language Research* 43(2). 203-227.
- Şener, Serkan and Daiko Takahashi. 2010. Ellipsis of arguments in Japanese and Turkish. *Nanzan Linguistics* 6:79-99.
- Simpson, Andrew. 2015. Verbal answers to yes/no questions, focus, and ellipsis. In Audrey Li, Andrew Simpson and Dylan Tsai (ed.), *Chinese Syntax in a Cross-linguistic Perspective*, 300-333. Oxford: Oxford University Press.
- Shi, Dingxu. 1989. Topic chain as a syntactic category in Chinese. *Journal of Chinese Linguistics* 17(2). 223-262.
- Shi, Dingxu. 2000. Topic and topic-comment constructions in Mandarin Chinese. *Language* 76(2). 383-408.
- Shyu, Shu-Ing. 1995. *The Syntax of Focus and Topic in Mandarin Chinese*. Los Angeles, CA: University of Southern California dissertation.
- Sybesma, Rint. 1997. Why Chinese *-le1* is a resultative predicate. *Journal of East Asian Linguistics* 6(3). 215-261.
- Sybesma, Rint. 1999. *The Mandarin VP*. Netherland: Kluwer.
- Sybesma, Rint. 2007. Whether we tense-agree overtly or not. *Linguistic Inquiry* 38(3). 580-587.
- Taraldsen, Tarald. 1978. On the NIC, Vacuous Application, and the That-trace Filter. Indiana University Linguistics Club, Bloomington.
- Tomioka, Satoshi. 2003. The semantics of null arguments in Japanese and its cross-linguistic implications. In Kerstin Schwabe and Susanne Winkler (ed.), *Interface: Deriving and Interpreting Omitted Structures*, 321-339. Philadelphia: John Benjamin.
- Travis, Lisa. 1984. *Parameters and Effects of Word Order Variation*. Cambridge, MA: MIT dissertation.
- Tsao, Feng-Fu. 1977. *A Functional Study of Topic in Chinese: The First Step toward Discourse Analysis*. Los Angeles, CA: University of Southern California dissertation.
- Tsao, Feng-Fu. 1990. *Sentence and Clause Structure in Chinese: A Functional Perspective*. Taipei: Student Book Co.
- Uriagereka, Juan. 1999. Minimal Restrictions on Basque Movements. *Natural Language and Linguistic Theory* 17(2). 403-444.

*Chi-ming Louis Liu*  
*Department of Foreign Languages and Literatures,*  
*National Chiao Tung University*  
*Hsinchu, Taiwan*  
*cmlouisliu@nctu.edu.tw*