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Unaccusative Split Argument Constructions in Mandarin Chinese

—A View from the Labeling Theory

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中国語の非対格動詞項分裂構文 —ラベリング理論の視点から—

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要約

本研究は、Chomsky (2013) のラベリング理論を用い、中国語の非対格動詞構文において二つの名詞句が出現する現象（例：Zhangsan si-le fuqin「張三は父親が死んだ」）を考察するものである。本研究では、この構文を「非対格動詞項分裂構文」と称する。具体的には、当該構文の生成過程および構文内で動詞直後に現れる名詞句への格付与のあり方を検討する。生成過程については、先行研究（Xu, 1999; Han, 2000; Yang & Chen, 2016; Qiu, 2017）の所有者上昇仮説を支持し、文頭の名詞句（例：Zhangsan si-le fuqinのZhangsan）は、もともと動詞直後に生成された項（例：si-le Zhangsan fuqin）の一部であり、項のラベリングが確定しないことにより文頭へ移動したと主張する。一方、名詞句の格付与についても、この移動によって決定されるラベリングを通じて、従来説明が困難であった部分格の付与を理論的に説明することが可能となった。

1 Introduction

Intransitive verbs are verbs that take only one argument. For example, the verbs *die* and *arrive* in (1) and (2) are intransitive verbs, and (1a) and (1b), which contain one argument, are grammatical.

- (1) a. John's father died.
b. John's guests arrived.
- (2) a. *John died father.
b. *John arrived guests.

The ungrammaticality of sentences such as (2) relates to the Case Filter (Chomsky, 1981). As required by the Case Filter, an overtly realized nominal argument must be Case-marked. Intransitive verbs such as *die* and *arrive* are unaccusative verbs (Perlmutter, 1978) and, as Burzio (1986) proposes, do not have the ability to assign an accusative Case to the object position. Consequently, the noun phrases *father* in (2a) and *guests* in (2b) cannot receive Case from the unaccusative verbs *die* and *arrive*, thereby violating the Case Filter.

However, the unaccusative sentences appear differently in Mandarin (Xu, 1999; Han, 2000; Qiu, 2017; Pan & Han, 2005; Pan & Han, 2008). There are sentences that are structurally parallel to (1) in Mandarin, as shown in (3).

- (3) a. [NP Zhangsan de fuqin] si-le.
Zhangsan de father die-asp
'Zhangsan's father died.'
- b. [NP Zhangsan de keren] lai-le.
Zhangsan de guest arrive-asp
'Zhangsan's guests arrived.'

Unlike English, the sentences that are structurally parallel to (2) are grammatical in Mandarin. In (4a) and (4b), there are two noun phrases occurring in preverbal and postverbal positions, and the sentences are grammatical.

- (4) a. Zhangsan si-le fuqin.
Zhangsan die-asp father
'Zhangsan's father died.'
- b. Zhangsan lai-le keren.
Zhangsan arrive-asp guest
'Zhangsan's guests arrived.'

According to Huang (1989) and Yang (1999), *si* 'die' in (2a) and *lai* 'arrive' in (2b) are both unaccusative verbs, and I call this kind of sentence unaccusative split argument construction in this paper. As discussed above, unaccusative verbs cannot assign accusative Case, and thus, the Case assignment in Mandarin unaccusative split argument constructions such as (4a) and (4b) is worth discussing. Furthermore, Burzio (1986) argues that unaccusative verbs also do not have the ability to assign a theta-role to the preverbal position. The theta-role of the preverbal noun phrase should also be investigated.

Although numerous studies have proposed analyses of unaccusative split argument constructions, none has convincingly explained both the Case assignment and the theta-role assignment involved. Building on Chomsky's labeling theory (2013), this study proposes that the occurrence of unaccusative split argument constructions is related to the labeling ambiguity. The proposal in this study can explain both Case assignment and theta-role assignment.

The paper is structured as follows: Section 2 reviews the Unaccusative Hypothesis, which was discussed by Perlmutter (1978), Burzio (1986) & Levin & Rappaport (1995). In Section 3, I present unaccusative split argument constructions such as (4) as an interesting feature of Mandarin unaccusative constructions that do not exist in English. Section 4 presents the Base-Generation analysis and the Possessor Raising analysis, two representative analyses of the Mandarin unaccusative split argument constructions. I point out the limitations of both analyses. The Base-Generation analysis suffers from the problem of theta-role assignment to the preverbal noun phrase. In contrast, the Possessor Raising analysis lacks a convincing explanation for the Case of the postverbal noun phrase. In Section 5, I also maintain the Possessor Raising analysis but adopt the labeling theory to explain the postverbal noun phrase's Case assignment. Section 6 concludes the paper with some future directions.

2 Background

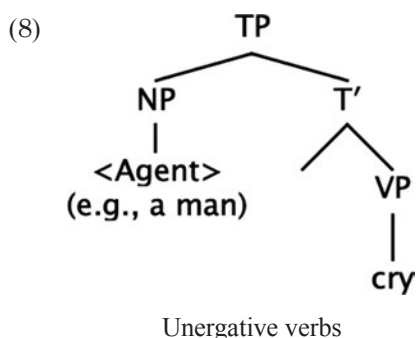
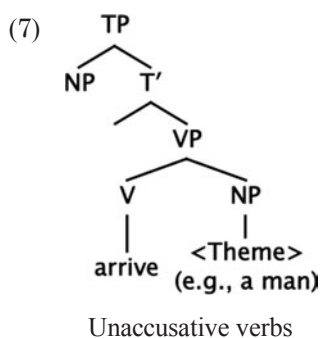
Perlmutter (1978) proposes the Unaccusative Hypothesis within the framework of Relational Grammar. According to Perlmutter (1978), intransitive verbs can be classified into two types: unaccusative and unergative. The surface subject in unaccusative constructions is actually an object in the underlying structure while the surface subject is base-generated in unergative constructions. Let us take examples in English as in (5) and (6). *Arrive* in (5) is an unaccusative verb, and *cry* in (6) is an unergative verb.

(5) A man arrived.

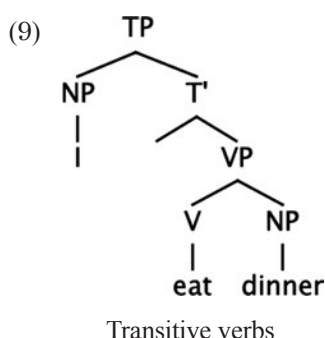
(6) A man cried.

On the surface, sentences (5) and (6) seem to have the same structure, but they have different grammatical relations: *a man* in (5) is not a subject but an object in the underlying structure while *a man* in (6) is the initial subject. This distinction has later been reinterpreted within generative grammar by Burzio (1986) and Levin & Rappaport (1995).

Burzio (1986) and Levin & Rappaport (1995) argue that unaccusative verbs have underlying syntactic structures in which the sole argument is generated inside the VP. Unergative verbs have a sole argument outside the VP. Burzio (1986) further proposes that the sole argument in unaccusatives is assigned a Theme theta-role, and the Agent theta-role is assigned in unergatives. On this view, the underlying structures of unaccusative and unergative verbs can be represented as in (7) and (8).



A comparison of the underlying structures of the transitive verb *eat*, as illustrated in (9), and the two intransitive verb types makes their structural differences explicit.



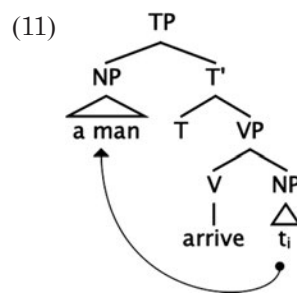
There are two arguments that occur in the underlying structure of the transitive construction, one argument is outside the VP (the Spec-TP position), while the other argument is inside the VP.

Burzio (1986) also argues that *there*-insertion construction is one diagnostic for distinguishing unaccusative from unergative verbs in English.

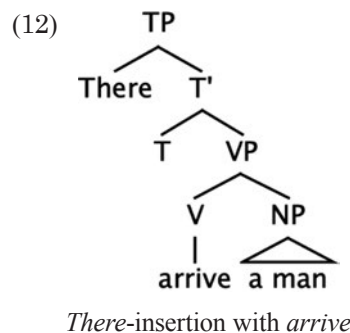
- (10) a. There arrived a man.
b. *There cried a man.

In short, unaccusative and unergative constructions appear to have the same surface structure, but they differ in their underlying structures. The argument of the unaccusative verb is base-generated inside the VP, while the argument of the unergative verb is base-generated outside the VP. There are also differences in the theta-role assignment: the argument in the unaccusative construction obtains the Theme theta-role at the VP internal position; the argument in the unergative construction is base-generated outside VP and is assigned the Agent theta-role at the same position.

Now let us see how (5) and (6) are derived from the underlying structures depicted in (7) and (8). In the underlying structure of (5), the nominal argument *a man* is base-generated as an internal argument of the unaccusative verb *arrive*, and it receives a Theme theta-role. As stated in Chomsky's (1981) Case Filter, an overtly realized noun phrase needs to be Case-marked. Therefore, moving *a man* to the subject (Spec-TP) position to receive nominative Case as shown in (11) is a way to explain the Case assignment of *a man*.



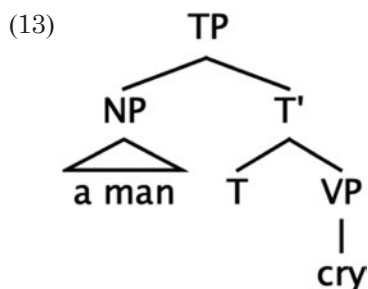
Alternatively, the nominal argument *a man* may stay in-situ. According to Chomsky's (1982) Extended Projection Principle, a noun phrase is required in the subject position in English, and thus the expletive *there* is inserted in the Spec-TP position to satisfy the Extended Projection Principle. The structure of *there*-insertion with the unaccusative verb *arrive* is illustrated in (12).



On discussing Definiteness Effect observed in unaccusative constructions, Belletti

(1988) proposes that unaccusative verbs can assign a partitive¹ Case to an indefinite postverbal nominal argument. In (10a), the indefinite nominal argument *a man* receives a partitive Case from *arrive*.

Turning to the unergative *cry*, the single external argument *a man* is base-generated in the external argument position as in (13).



A man receives an Agent theta-role and is assigned a nominative Case. In addition, *there*-insertion does not occur, as in (10b). Since the argument of the unergative verb is already at the Spec-TP position in the underlying structure, it would need two unmotivated operations, that is, lowering of *a man* and insertion of *there*.

In brief, there are differences in the derivation of English unaccusative constructions and unergative constructions. Theta-role assignment and Case-marking are also different: The argument in the unaccusative construction obtains the Theme theta-role at the VP internal position and moves to the Spec-TP to receive the nominative Case or stays in-situ to receive the partitive Case from the unaccusative verb; in contrast, the nominal argument in the unergative construction is base-generated at Spec-TP, and thus it receives the structural nominative Case and Agent theta-role at the same position.

Let us now turn to Mandarin intransitive verbs. Huang (1989) and Yang (1999) propose that the intransitive verb *si* 'die' in Mandarin is an unaccusative verb, and *ku* 'cry' is an unergative verb. Look at the contrast between (14) and (15). In (14), the nominal argument *yi-ge-ren* 'a man' can appear in the preverbal or the postverbal position, but in (15), the nominal argument can only appear in the preverbal position.

- (14) a. Yi-ge-ren si-le.
 one-classifier-person die-asp
 'A man died.'
 b. Si-le yi-ge-ren.
 die-asp one-classifier-person
 'A man died.'

- (15) a. Yi-ge-ren ku-le.
 one-classifier-person cry-asp

►1 On Belletti's (1988) analysis, partitive Case arises only when an internal argument remains in an internal argument position and is interpreted as indefinite in an unaccusative construction. For example, in English *there*-constructions such as *there arrived a man*, the internal argument *a man* remains in its internal argument position and being indefinite, is eligible for partitive Case. By contrast, a definite noun phrase cannot be assigned partitive Case in the same position. This explains the ungrammaticality of sentences such as *there arrived the man*, since the definite NP *the man* can receive neither accusative Case nor partitive Case in this construction. Structural nominative Case is satisfied independently, typically by an expletive such as *there*. When a definite noun phrase moves to the subject position, the conditions for partitive Case are no longer met, and no partitive Case is assigned.

‘A man cried.’

- b. *Ku-le yi-ge-ren.
cry-asp one-classifier-person

In the underlying structure of (14a) and (14b), *yi-ge-ren* ‘a man’ is base-generated as an internal argument inside VP. It receives a Theme theta-role, but how its Case is assigned remains unclear. One way to assign Case to the postverbal nominal argument is to move it to the Spec-TP position, where it can receive a nominative Case. Sentence (14b) is similar to (10a), but because null subject structures are possible in Mandarin (Fang & Tan, 2006), expletive words such as *there* are not required in (14b). Xu (1999, 2001) adopts Belletti's (1988) analysis to Mandarin data and claims that the indefinite nominal argument *yi-ge-ren* ‘a man’ in (14b) receives a partitive Case from the unaccusative verb *si* ‘die’. Because *yi-ge-ren* ‘a man’ can receive a Theme theta-role and a partitive Case in (14b), the Case Filter and theta-criterion (Chomsky, 1981) are satisfied in (14b). On the other hand, in the underlying structure of (15a), the nominal argument *yi-ge-ren* ‘a man’ is base-generated in the preverbal position. It receives an Agent theta-role and a nominative Case without movement. (15b) is ungrammatical because it requires an unmotivated operation lowering to derive the structure.

To recapitulate, in both English and Mandarin, unaccusative and unergative verbs seem to have the same surface order but they have different semantic and underlying structures. In the unaccusative constructions, the nominal argument is base-generated inside the VP and is assigned a Theme theta-role. Because unaccusative verbs do not have the ability to assign an accusative Case, the nominal argument moves to the Spec-TP position to seek a nominative Case or receive a partitive Case from unaccusative verbs in-situ. In contrast, the nominal argument in the unergative construction is base-generated outside VP. It is assigned an Agent theta-role and a nominative Case there, i.e., Spec-TP.

3 | Puzzle: Unaccusative Split Argument Construction in Mandarin Chinese

In this section, this study introduces another peculiar property that Mandarin unaccusative verbs have but English unaccusatives do not. Following the discussion in Section 1, the sentences in (3), repeated here as (16), are examples of such a unique unaccusative construction. In both (16a) and (16b), two noun phrases appear in the preverbal and postverbal positions. English sentences parallel to (16) are ungrammatical as in (17).

(16) a. [_{NP} Zhangsan] si-le [_{NP} fuqin].
 Zhangsan die-asp father
 'Zhangsan's father died.'

b. [_{NP} Zhangsan] lai-le [_{NP} keren].
 Zhangsan arrive-asp guest
 'Zhangsan's guests arrived.'

(17) a. *John died father.

b. *John arrived guests.

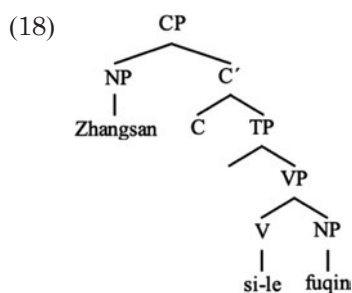
As mentioned above in the canonical unaccusative constructions as shown in (11), the internal noun phrase in the underlying structure moves to the Spec-TP position where it receives nominative Case. What is interesting in (16) is that the unaccusative verb cannot assign an accusative Case (Burzio 1986) but two noun phrases occur, and the sentence is grammatical. A question naturally arises: How are Case and theta-role assigned in the unaccusative split argument constructions?

4 Previous Studies

This section introduces two representative analyses that attempt to explain the Mandarin unaccusative split argument constructions: The Base-Generation analysis (Pan & Han, 2005; Pan & Han, 2008) and the Possessor Raising analysis (Xu, 1999, 2001; Han, 2000; Qiu, 2017). Researchers who argue for the Base-Generation analysis propose that noun phrases such as *Zhangsan* in (16) are base-generated in the external argument position. On the other hand, researchers who advocate the Possessor Raising analysis claim that noun phrases such as *Zhangsan* in (16) are generated in postverbal position and move to the preverbal position. Although these two analyses can yield the surface structure of (16), there are problems regarding the theta-role assignment of the surface preverbal noun phrase in the Base-Generation analysis and the Case assignment of the surface postverbal noun phrase in the Possessor Raising analysis.

4.1 The Base-Generation analysis

The Base-Generation analysis is a prominent analysis for the Mandarin unaccusative split argument constructions, which proposes that a surface preverbal noun phrase such as *Zhangsan* in (16) is base-generated there. For instance, Pan & Han (2005) claim that a sentence such as (16a) has the structure shown in (18).



(Based on Pan & Han 2005)

Pan & Han (2005) propose that the preverbal noun phrase *Zhangsan* is base-generated at the Spec-CP position and is a dangling topic. The dangling topic is a unique topic that exists in Mandarin. Following Li & Thompson (1976), a dangling topic does not have a syntactic relation with the verb and the comment clause². It connects to the comment clause semantically and relies on the aboutness relation, which means the comment clause discusses the topic. For example, *na-ci di-zhen* 'that earthquake' in (19) qualifies as a dangling topic.

- 2 According to Shi (2000), the comment is an open clause. It has a position where a vacant category or a resumptive pronoun fills in. It is also coreferential with the topic.

(19) [na-ci di-zhen], [xingkui fangzi meiyou ta].
 That-classifier earthquake fortunately building not collapse
 [dangling topic] [comment clause]
 'As for that earthquake, fortunately, the building didn't collapse.'

In (19), the noun phrase *fangzi* 'building' is assigned a Theme theta-role and does not have volition in the comment clause. The verb *ta* 'collapse' is an unaccusative verb. Thus, there is only a sole argument *fangzi* 'building' that can appear in the comment clause. It means that the noun phrase *na-ci di-zhen* 'that earthquake' does not have a structural position within the comment clause. The comment clause is an extended explanation for the noun phrase *na-ci di-zhen* 'that earthquake'. In other words, the sentence-initial noun phrase *na-ci di-zhen* 'that earthquake' is semantically related to the comment clause *xingkui fangzi meiyou ta* 'fortunately, the building didn't collapse'. The noun phrase *na-ci di-zhen* 'that earthquake' in (19) is a dangling topic.

Pan & Han (2005) propose that the preverbal *Zhangsan* is also a dangling topic because it does not have a syntactic relation with *fuqin* 'father': *Zhangsan* does not have a structural position in the predicate since the unaccusative verb *si* 'die' already has a sole argument *fuqin* 'father'. Instead, *Zhangsan* has a semantic relation with *fuqin* 'father' and is interpreted as its possessor. Turning to the Case assignment of the postverbal noun phrase, Pan & Han (2005) assume that the preverbal position or postverbal position in Mandarin unaccusative constructions can both be given the nominative Case. Because the moved noun phrase *Zhangsan* is a topic rather than a subject in (16a) under Pan & Han's (2005) proposal, it does not need Case. Therefore, the nominative Case is assigned to the postverbal position

such as *fuqin* ‘father’ in (16a).

Although Pan & Han (2005) propose that the surface preverbal noun phrase such as *Zhangsan* in (16a) is a dangling topic, there are several pieces of evidence that show it is problematic. Firstly, Quan & Han (2021) show that a sentence such as *Zhangsan si-le fuqin* can be the complement clause of Exceptional Case-Marking³ while the dangling topic cannot. For instance, in the sentence *ni-de-pengyou, Mali zui bu xihuan Zhangsan* ‘Among your friends, Mary dislikes Zhangsan the most’, *ni-de-pengyou* ‘your friends’ here is a dangling topic. This sentence cannot appear at the complement position as shown in (20b). By contrast, in (20a), the sentence *Zhangsan si-le fuqin* ‘Zhangsan's father died’ appears in the complement position, and this sentence is grammatical.

- (20) a. Lisi rang/shi Zhangsan si-le fuqin.
Lisi make Zhangsan die-asp father
‘Lisi caused Zhangsan's father to die.’
b. *Lisi rang/shi ni-de-pengyou, Mali zui bu xihuan Zhangsan.
Lisi makes your friend, Mary most not like Zhangsan

This indicates that *Zhangsan* in (16a) is not a dangling topic. Secondly, the sentences with a topic and the unaccusative split argument constructions exhibit a different behavior when they have a *wh*-word. According to Shi (2001), the element which is topicalized cannot be replaced by the *wh*-phrase. For example, in (21a), *Zhangsan* is a topic, and when *Zhangsan* is replaced by *wh*-phrase *shui* ‘who’, the sentence is ungrammatical as in (21b).

- (21) a. Zhangsan, ta you ma wo.
Zhangsan he again scold I
‘It is Zhangsan who scold me again.’
b. *Shui, ta you ma wo.
Who he/she again scold I

In contrast, the noun phrase *Zhangsan* in the sentence *Zhangsan si-le fuqin* can be replaced by *shui* ‘who’ as shown in (22).

- (22) Shui si-le fuqin?
Who die-asp father
‘Whose father died?’

This provides another piece of evidence that, the preverbal noun phrase such as *Zhangsan* in unaccusative split argument constructions is not a topic. Taken together, these two pieces of evidence indicate that the surface preverbal noun phrase is not a dangling topic.

►3 Exceptional Case-Marking is a non-typical Case assignment to the subject of the embedded clause. Some verbs have this capacity. For example, in (i-b), the subject of the small clause is *her*, and the infinitive *to* cannot assign nominative Case to the subject. Therefore, the Case of *her* is assigned by the verb *believe*.

(i) a. John believes [that she is an honest girl]. b. John believes [her to be an honest girl].

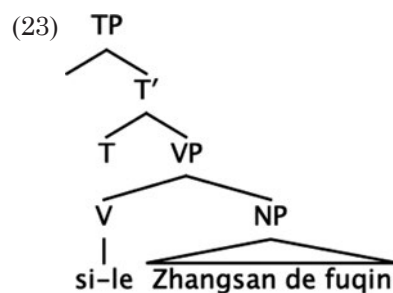
(According to Chomsky 1986a)

The Case assignment mechanism proposed by Pan & Han (2005) also appears to be insufficient. They assume that in unaccusative constructions, nominative Case can be assigned to either the preverbal or postverbal position. Under their analysis, the postverbal noun phrase receives nominative Case because unaccusative split argument constructions lack a canonical subject. If the assumption were correct, it would be unclear why sentences like *si-le Zhangsan* ‘died Zhangsan’ are ungrammatical. This discrepancy poses a serious challenge to their proposal and highlights the need for a more precise explanation of how Case is assigned in unaccusative split argument constructions.

4.2 The Possessor Raising analysis

This section reviews three representative Possessor Raising analyses of unaccusative split argument constructions: Xu (1999), Qiu (2017), and Han (2000). Xu (1999) proposes that unaccusative split argument constructions such as (16a) are derived through *Zhangsan*'s movement and argues that the remaining part of the postverbal noun phrase receives a partitive Case from the unaccusative verb. Qiu (2017) enhances the Possessor Raising analysis by proposing that if the definite noun phrase can be construed as a part of a larger set, it can receive a partitive Case from the unaccusative verb. Han (2000) applies the chain to explain the Case of the remaining part of the postverbal noun phrase which has been refuted by many researchers.⁴

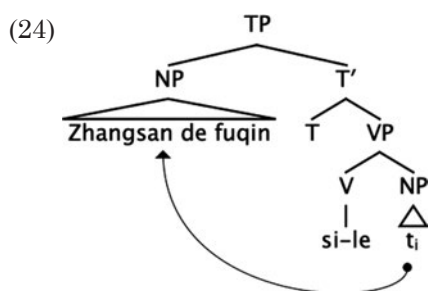
Xu (1999), Qiu (2017) and Han (2000) propose the same underlying structure and derivation of unaccusative split argument constructions. For example, in their analyses, (16a) is derived from the underlying structure shown in (23) below.



(Based on Xu, 1999; Qiu, 2017; Han, 2000)

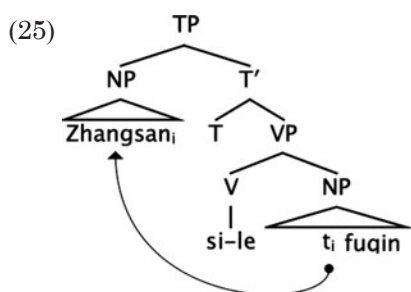
The unaccusative verb *si* ‘die’ does not have the ability to assign an accusative Case to its internal argument (Burzio, 1986). Xu (1999), Qiu (2017) and Han (2000) propose that the noun phrase has two ways to obtain the Case. One solution is to move the entire noun phrase *Zhangsan de fuqin* ‘Zhangsan’s father’ to the subject position to receive a nominative Case as shown in (24).

►4 This paper agrees with the problems argued by other researchers. Therefore, I will not provide a detailed discussion of Han’s (2000) proposal.



(Based on Xu, 1999; Qiu, 2017; Han, 2000)

The other solution is to move *Zhangsan* to the external position to receive a nominative Case there as shown in (25).



(Based on Xu, 1999; Qiu, 2017; Han, 2000)

Although Xu (1999), Qiu (2017) and Han (2000) propose the same underlying structure and derivation, they offer slightly different analyses of the Case assignment. As for the Case assigned to the noun phrase *fuqin*, Xu (1999) adopts Belletti's (1988) theory of partitive Case and proposes that the unaccusative verb *si* 'die' assigns a partitive Case to the indefinite noun phrase *fuqin* 'father'. This is based on Xu's (1999) interpretation that the noun phrase *fuqin* 'father' becomes indefinite after the movement of *Zhangsan*. The reason that *de* disappears after *Zhangsan* moves to the external argument position is not discussed in detail by Xu (1999).⁵

This study concurs with Qiu (2017) and Han's (2000) refutation of Xu's proposal, which argues that the partitive Case assignment to the surface postverbal noun phrase in (25) is problematic. Although *Zhangsan* moves to the preverbal position, it does not imply that the structure of the postverbal noun phrase has changed. The structure of [*t_i fuqin*] that follows the unaccusative verb *si* 'die' is still definite. As long as it is definite, it cannot receive a partitive Case.

Based on Xu's (1999) proposal, Qiu (2017) proposes a supplementary explanation of Case assignment. Qiu (2017) proposes that if the definite noun phrase can be construed as a part of a larger set, it can receive a partitive Case from the unaccusative verb. Qiu (2017) analyzes that *fuqin* 'father' can receive a partitive Case because it is a member of *Zhangsan*'s family. Under this proposal, a sentence such as (26) should be correct, as *Zhangsan de fuqin* 'Zhangsan's father' might be inter-

►5 Xu (1999) briefly mentions two possible explanations for the (dis) appearance of *de*. One is *de*-insertion, and the other is *de*-deletion. The *de*-insertion takes place during a later stage of derivation process. In the *de*-deletion analysis, *de* exists in the original structure, and is deleted as *Zhangsan* moves forward.

►6 Chomsky (1986b:95-97) proposes that a chain reflects 'a history of movement'. It means that the chain is formed by the moved element and its trace. For details, refer to Chomsky (1986b).

►7 For the details, refer to Wen & Chen (2001), and Quan & Han (2021).

preted as a relative of *Zhangsan*; yet the sentence (26) is ungrammatical.

(26) *Si-le Zhangsan de fuqin.
Die-asp Zhangsan 's father

Instead of the partitive Case, Han (2000) adopts chain⁶ to analyze the Case assignment of the surface postverbal noun phrase, forming *Zhangsan* and [_{NP} t_i (de) fuqin] as the chain (*Zhangsan*_i, [_{NP} t_i (de) fuqin]). Han (2000) proposes that through this chain, not only *Zhangsan* obtains a nominative Case in the external argument position after the movement, but also the nominative Case percolates up to the entire [_{NP} t_i (de) fuqin]. This proposal has been widely refuted by researchers, such as Wen & Chen (2001) and Quan & Han (2021). For example, they argue that it is problematic to propose *Zhangsan*_i and [_{NP} t_i (de) fuqin] can form a chain.⁷ This paper agrees with their criticism and does not provide further discussion of Han's proposal.

4.3 Summary

In this section, the specific analyses of previous studies and their problems are examined. In the Base-Generation analysis, the surface preverbal noun phrase is base-generated in the preverbal position. This analysis cannot explain what theta-role the surface preverbal noun phrase receives. Pan and Han (2005) analyze the surface preverbal noun phrase as a dangling topic; the evidence presented in this section, by contrast, suggests that it does not exhibit this property. Researchers who adopt the Possessor Raising analysis, on the other hand, propose that the surface preverbal noun phrase is raised from the postverbal position. Yet this analysis also struggles to explain how Case is assigned to the surface postverbal noun phrase. In the next section, labeling theory is applied to the Possessor Raising analysis to explain how the surface postverbal noun phrase receives Case.

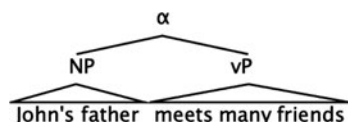
5 Proposal based on the Labeling Theory

In this section, this study suggests maintaining the Possessor Raising analysis to analyze unaccusative split argument constructions and argues that the postverbal noun phrase is assigned a partitive Case following Xu (1999) and Qiu (2017). Unlike Xu (1999) and Qiu (2017), this study proposes to apply the labeling theory to the Possessor Raising analysis to explain the feasibility of partitive Case assignment.

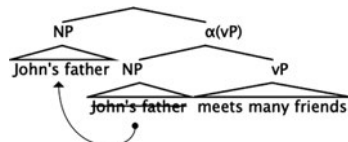
5.1 The Labeling Theory

Chomsky (2013) proposes the labeling theory under the minimalist program, and *Merge* is a fundamental syntactic operation that combines two elements, X and Y, to form a constituent $\{_{\alpha} X, Y\}$.⁸ Labeling plays a crucial role and is required when the structure is transferred to the interfaces. According to Chomsky's (2013) labeling algorithm (LA), labels are determined via minimal search. When a head H merges with phrase YP, as in $\{_{\text{H}} H, YP\}$, the label is easily identified as H, since H is readily accessible by minimal search. In configurations like $\{_{\alpha} XP, YP\}$, where neither element is a head. Chomsky (2013) proposes two solutions to resolve the ambiguity of $\{_{\alpha} XP, YP\}$'s labeling. One is the feature sharing: If XP and YP share a feature (e.g., ϕ -feature), this shared feature can serve as the label. The other one is movement: If one of the constituents (XP or YP) undergoes movement, only the remaining element at the surface is visible for labeling. An example of this labeling-by-movement mechanism is illustrated in (27), where movement renders one element invisible, allowing the remaining one to project as the label.

(27) a.



b.



(27b) illustrates the derivation corresponding to (27a). In (27a), the noun phrase *John's father* and the *vP* *meets many friends* merge, forming the constituents $\{_{\alpha} \text{NP}, \text{vP}\}$. At this point, labeling is unresolved due to the absence of a clear head. As discussed earlier, if one of the constituents undergoes movement, the label can be identified. In this case, *John's father* raises to the Spec-TP position, and thus the copy of *John's father* at the lower position becomes invisible to the labeling algorithm; the structure $\{_{\alpha} \text{NP}, \text{vP}\}$ is labeled as *vP*.

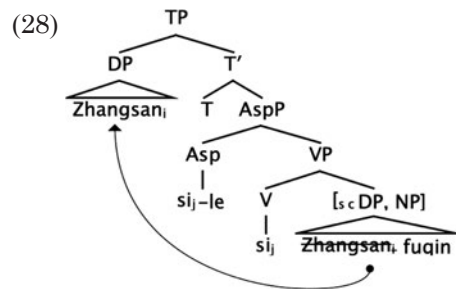
In sum, raising XP is a way to facilitate labeling, as the moved XP becomes invisible and allows the remaining constituent to be identified as its label. This mechanism of XP-raising also plays a crucial role in the proposal developed in this study.

5.2 Yang & Chen's (2016) proposal on Unaccusative Split Argument Constructions

Prior to presenting my own proposal, this study critically review Yang & Chen's (2016) proposal, which likewise employs labeling theory in explaining the derivation of unaccusative split argument constructions. Unlike the proposals of Xu

- 8 Chomsky (2013) distinguishes two types of *Merge*: External merge and internal merge. When two elements, X and Y, are combined, the operation is referred to as external merge (corresponding to *merge* in earlier theories). By contrast, when one of the merged elements is contained within the other, the operation is called internal merge (corresponding to *move* in previous theories).

(1999) and Qiu (2017) discussed in Section 4, Yang & Chen (2016) incorporate labeling theory to explain the assignment of partitive Case, and they analyze noun phrases such as *Zhangsan* in *Zhangsan si-le fuqin* ‘Zhangsan’s father died’ as DPs, which follow the DP Hypothesis (Abney, 1987). In their proposal, the derivation of the unaccusative split argument constructions proceeds as illustrated in (28).



the derivation in Yang & Chen (2016)

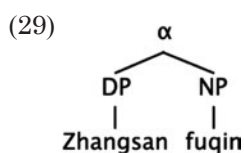
The proposal put forward by Yang & Chen (2016) is as follows: First, the DP *Zhangsan* and the NP *fuqin* ‘father’ merge to form a small clause $\{\alpha \text{ DP, NP}\}$, where *Zhangsan* serves as the subject and *fuqin* ‘father’ as the predicate. This small clause then merges with the unaccusative verb *si* ‘die’ to form a VP. Subsequently, the aspect marker *le* merges with the VP to form an AspP (*si* ‘die’ is drawn to *le* ‘aspect’ and moves to combine with it). Finally, the AspP merges with T. Since the labeling of the small clause $\{\alpha \text{ DP, NP}\}$ remains ambiguous, Yang & Chen (2016) propose that *Zhangsan* moves to the Spec-TP position allowing the structure to be labeled as NP. In Yang & Chen’s (2016) analysis, *fuqin* ‘father’ functions as the predicate of the small clause and, as such, requires neither a theta-role nor Case. In contrast, *Zhangsan* receives a possessor theta-role within the small clause and is assigned nominative Case in the Spec-TP position following movement.

However, Yang & Chen’s (2016) proposal that *Zhangsan fuqin* ‘Zhangsan father’ constitutes a small clause faces a challenge. Under their analysis, *fuqin* ‘father’ functions as the predicate within the small clause and is thus not considered an argument of the verb; it is assumed to require neither a theta-role nor Case. Crucially, this leads to a mismatch between syntax and semantics: If *fuqin* ‘father’ is indeed a predicate, it should not receive a thematic role from the verb *si* ‘die’. Semantically, *fuqin* ‘father’ is the entity undergoing the event denoted by *si* ‘die’ and must therefore be assigned a theme theta-role. In other words, *fuqin* ‘father’ serves as the internal argument of the unaccusative verb *si* ‘die’. This semantic fact undermines Yang & Chen’s (2016) claim that *Zhangsan fuqin* ‘Zhangsan father’ should be analyzed as a small clause.

5.3 A Proposal Under the view of Labeling Theory

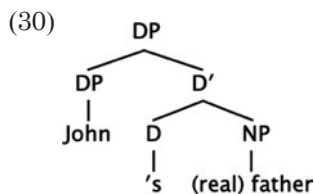
5.3.1 The Underlying Structure

This study proposes an underlying structure similar to that of Xu (1999) and Qiu (2017), in which the key difference is that *de* is not base-generated. Furthermore, Abney's (1987) DP hypothesis is adopted in this proposal. In the underlying structure of *Zhangsan si-le fuqin* 'Zhangsan died father', *Zhangsan* and *fuqin* 'father' are merged initially, without *de*, as shown in (29).



The underlying structure of *Zhangsan fuqin*

I assume *fuqin* 'father' as an NP rather than an N. Given that the structure of *Zhangsan fuqin* 'Zhangsan father' parallels that of *John's father*. The structure of *John's father* can serve as a referent. (30) presents the structure of *John's father* in English, analyzing *father* as an NP.



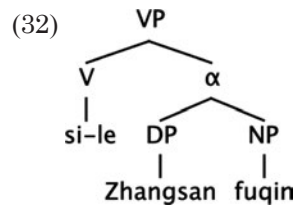
The structure of *John's father*

As shown in (30), *father* can co-occur with the adjective *real*. This study therefore assumes that *fuqin* 'father' should be analyzed as an NP even when there is no adjective to co-occur. Additionally, it is well established that bare nouns can function as arguments in Mandarin Chinese. For instance, in (31), the bare noun *xie* 'shoes' serves as an argument.

- (31) Lisi qu mai xie.
 Lisi go buy shoes
 'Lisi go to buy a pair of shoes/some shoes.'

Therefore, it is reasonable to assume that *fuqin* 'father' in the structure *Zhangsan fuqin* 'Zhangsan father' is an NP.

Drawing on the preceding discussion, this study proposes that (32) is the underlying structure of the unaccusative split argument construction (16a).

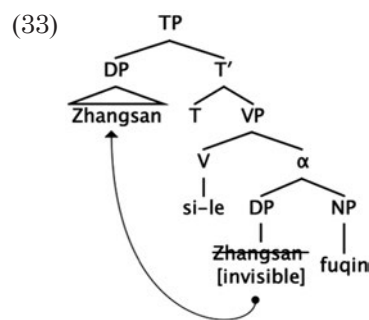


In this structure, DP *Zhangsan* and NP *fuqin* ‘father’ first merge to form the constituent $\{\alpha \text{ DP, NP}\}$. This constituent then merges with the unaccusative verb *si* ‘die’ to form the VP. However, the label of $\{\alpha \text{ DP, NP}\}$ is ambiguous. Following Chomsky’s (2013) proposal, this study also argues that raising *Zhangsan* to a higher position resolves the labeling ambiguity as proposed by Yang & Chen (2016). This analysis will be elaborated in the next section.

5.3.2 The Derivation from the Underlying Structure

This paper proposes that under the labeling theory, the underlying structure discussed in (32) not only derives the unaccusative split argument construction, but also generates a commonly used sentence type, such as *Zhangsan de fuqin si-le* ‘Zhangsan’s father died’, which will be referred to as the unaccusative argument-raising construction in this study. This section will discuss the derivation of both the unaccusative split argument construction and the unaccusative argument-raising construction.

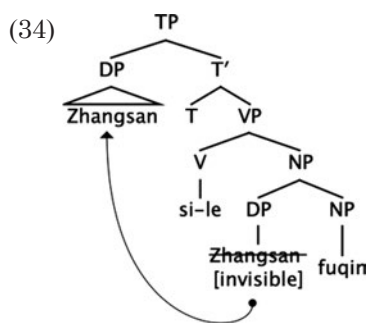
Based on the underlying structure discussed above, I propose that the derivation of unaccusative split argument constructions is as shown in (33).



►9 Following Chomsky (2013) and given that the copy theory of movement provides a more appropriate framework for the present discussion, I adopt the copy theory in this proposal.

►10 According to Chomsky (2013), internal merge (i.e., movement) is a free operation. Whether such movement is legitimate relates to the labeling and interface conditions.

As mentioned above, the constituent $\{\alpha \text{ DP, NP}\}$ is ambiguous to decide the label of $\{\alpha \text{ DP, NP}\}$. According to Chomsky (2013), the lower copy is invisible to labeling algorithm; thus, raising *Zhangsan* to a higher position provides a way to decide the label of $\{\alpha \text{ DP, NP}\}$. After the movement, the remaining *Zhangsan*⁹ as shown in (33) is invisible.¹⁰ As a result, the label of $\{\alpha \text{ DP, NP}\}$ is identified as an NP, as shown in (34).



Regarding the Case of the surface postverbal NP $\{_{NP} \text{Zhangsan}, \text{fuqin}\}$, I assume that, from the perspective of labeling, definiteness is interpreted as tied to DPs, whereas bare NPs are interpreted as indefinite.¹¹ It should be noted that this assumption is not universally shared. In this paper, however, it is adopted as a simplifying assumption for the purposes of the analysis. This assumption is informed by DP-based approaches in which definiteness and referential properties are determined by functional structure rather than NP (Abney, 1987; Longobardi, 1994). Therefore, $\{_{NP} \text{Zhangsan}, \text{fuqin}\}$, labeled as NP, lacks functional structure associated with definiteness. As a result, partitive Case becomes available in this construction. Simultaneously, as discussed in the part of the partitive Case, an indefinite NP can receive a partitive Case from the unaccusative verb. The $\{_{NP} \text{Zhangsan}, \text{fuqin}\}$ can obtain the partitive Case from *si* ‘die’. The moved *Zhangsan* receives a nominative Case in the surface subject position.¹²

Meanwhile, *Zhangsan* and *fuqin* ‘father’ can both receive appropriate theta-role in this proposal. This paper proposes that *Zhangsan*’s theta-role is assigned by the head NP *fuqin* ‘father’ as a possessor. *Zhangsan fuqin* ‘father’ receives a Theme theta-role from the unaccusative verb *si* ‘die’. In this analysis, neither the Case assignment nor the theta-role problems found in previous analyses arise. The sentence *Zhangsan si-le fuqin* ‘Zhangsan died father’ can be derived successfully.

In addition to unaccusative split argument constructions, the unaccusative argument-raising construction can also be derived from the underlying structure shown in (32) under labeling theory. The entire noun phrase, *a man* in sentence (5) (repeated below as (35)) and *yi-ge-ren* ‘a man’ in sentence (14a) (repeated below as (36)), can raise to the preverbal position.

(35) A man arrived.

(36) Yi-ge-ren si-le.
one-classifier-person die-asp
‘A man died.’

Therefore, sentences such as *Zhangsan de fuqin si-le* ‘Zhangsan’s father died’ are proposed to be derived from the same underlying structure as unaccusative split argument constructions. The derivation is illustrated in (37).

► 11 Admittedly, exceptions do exist and require plausible explanation. This is a commonly observed issue, and further research will be necessary to account for it more fully.

► 12 This analysis of Chinese raises the question of why the similar sentences such as (2) are ungrammatical in English. I argue that this ungrammaticality is not attributed to the failure of the noun phrase *father* to receive partitive Case. It follows from a constraint on extraction, known as the Left Branch Condition (LBC). Ross (1986) proposes the Left Branch Condition, which bans the extraction of a leftmost constituent out of a larger NP. English strictly observes this constraint. For example, *whose* cannot be extracted independently from *whose dish*, yielding ungrammaticality in (i-a), whereas extraction of the entire NP is permitted in (i-b).

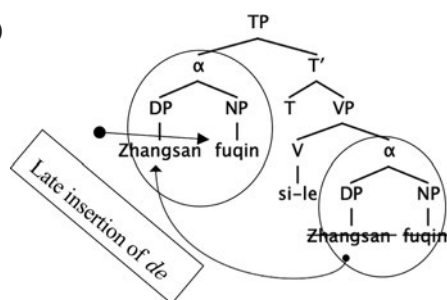
- (i) a. *Whose do you like dish?
b. Whose dish do you like?

By contrast, Chinese has been argued to allow apparent violations of the Left Branch Condition (Hsu, 2009), as illustrated in (ii).

- (ii) Na-zhi-tuzi, wo mingming
kanjian-le [t_i erduo]!
That -classifier-rabbit I
obviously see-asp ear
‘It is true of that rabbit that I
saw its ears!’ (Hsu, 2009)

Consequently, even if the sentence in (2) were eligible for partitive Case, it would still be excluded as a violation of the LBC. Why the Left Branch Condition is strictly in English but more flexibly in Chinese remains an open question with significant implication for linguistic theory.

(37)



- 13 The assignment of partitive Case is not obligatory; therefore, redundant Case assignment does not arise in this construction.

- 14 The unacceptability of *si-le Zhangsan de fuqin* raises a question. This pattern is not yet fully understood. It is possible that the ungrammaticality cannot be reduced to labeling alone, but instead reflects independent constraints related to interpretive requirements or information structure. A full analysis is left for future research.

In this derivation, the $\{\alpha \text{ DP, NP}\}$ is ineligible to receive partitive Case from the unaccusative verb *si* ‘die’ in postverbal position.¹³ The movement of the whole *Zhangsan fuqin* to the Spec-TP position resolves this issue, as it allows *Zhangsan fuqin* to receive nominative Case in that position. As for the *de* which appears between *Zhangsan* and *fuqin* ‘father’, I will not treat it as a purely morphological requirement; rather it is analyzed as a component that interacts with the labeling algorithm. Following Chomsky (2013), labeling is assumed to occur at the phase level, prior to transfer to the interfaces. This study proposes that *de* is inserted after movement of *Zhangsan fuqin* and before the structure is transferred. The insertion of *de* makes the DP *Zhangsan* invisible to the labeling algorithm, allowing the remaining NP to be identified as the label. This proposal is inspired by Saito's (2016) analysis of the Japanese particle *no*, which has been proposed function as an anti-labeling device. Although this paper does not pursue the full empirical consequences of this proposal, the similarity between Chinese *de* and Japanese particle *no* suggests that the proposed analysis is empirically testable. Finally, *de* is not required until the structure reaches a phase boundary.¹⁴

5.3.3 Summary

In this section, this study proposed that both unaccusative split argument constructions and unaccusative argument-raising constructions share the same underlying structure: For example, [_{VP} [_V *si-le*] [_α *Zhangsan fuqin*]]. The surface divergence between the two different constructions arises from different derivational mechanisms. In the unaccusative split argument constructions, after DP *Zhangsan* merges with NP *fuqin* ‘father’, the labeling of the constituent $\{\alpha \text{ Zhangsan fuqin}\}$ cannot be decided, as it is unclear which element serves as the head. Consequently, *Zhangsan* raises to Spec-TP, leaving a copy in its original position (*Zhangsan*). Since *Zhangsan* is too weak to contribute to labeling, the constituent is labeled as NP. The unaccusative verb *si* ‘die’ can then assign a partitive Case to the postverbal noun phrase, yielding the grammatical sentence *Zhangsan si-le fuqin* ‘Zhangsan's father died’.

In the derivation of unaccusative argument-raising constructions, the entire constituent *Zhangsan fuqin* moves to the Spec-TP position where it receives nominative Case, and *de* is inserted between *Zhangsan* and *fuqin* after the movement in order to decide the label.

Under this proposal, the phenomenon that postverbal noun phrases in unaccusative split argument constructions are necessarily indefinite (e.g., Xu, 1999) is derived as a consequence of this analysis. This phenomenon is not explicitly derived in the analysis proposed by Yang & Chen (2016).

6 Conclusion

This study set out to investigate the derivation of unaccusative split argument constructions in Mandarin and has proposed a novel analysis to account for their derivation. By applying the labeling theory (Chomsky, 2013), the Case problem that remained unsolved in previous studies is solved. While the present analysis offers a solution to the Case assignment of the postverbal noun phrase in unaccusative split argument constructions, further research is still required. In particular, the relationship between labeling and the definiteness effect, as well as the insertion of *de*, deserve exploration in future work.

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