

Unaccusatives and unergatives in Mandarin Chinese

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0. Introduction¹

This paper discusses the structure of verbal predicates in Mandarin Chinese. The main focus is on verbs with a single meaningful argument. Many languages have two types of intransitive verbs: unergatives and unaccusatives. In Mandarin, only unaccusatives are truly intransitive. Verbs that are often unergative in other languages are syntactically transitive in Mandarin. This paper focuses on verb phrases like those in (1), where transitivity is the result of insertion of a dummy object.

- (1) a. Ta pao bu.
he run step
'He is running.'
- b. Zhangsan liu bing.
Zhangsan slide ice
'Zhangsan is skating.'
- c. Lisi zou lu.
Lisi walk road
'Lisi is walking.'

The verbs in (1) are activities, and select an agent as their external argument. The internal argument position is not left open, however. Instead it is filled with a semantically null object selected by the verb, creating a transitive structure. Telic verbs that select a single patient argument are syntactically intransitive in Mandarin, as can be seen in (2). These verbs have only a single argument.

- (2) a. Zhangsan si-le.
Zhangsan die-LE
'Zhangsan died.'
- b. Boli po-le.
glass break-LE
'The glass broke.'
- c. Wangpeng dao-le.
Wangpeng arrive-LE
'Wangpeng arrived.'

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In this paper I argue that verbs in Mandarin must have a complement. Intransitive unergative verbs are missing in Mandarin because the complement position must be filled. The verbs in (1) may appear without their dummy objects exactly when they combine with another element that fills the complement position. Dummy objects are inserted to fill the complement position when no other element is present. Unaccusatives in Mandarin have only one argument on the surface, a result of the complement position of the verb being filled by the trace of the surface subject.

The paper is organized as follows. Section 1 presents data on ‘unergative’ verbs and outlines the environments where dummy objects are and are not needed. Section 2 presents the proposal that verbs in Mandarin require a complement. Post-verbal modifiers in the Mandarin VP are discussed in Section 3. Section 4 presents data on unaccusative verbs, and addresses the role of Case. In Section 5, I present evidence for the connection between unaccusativity, telicity and thematic role assignment in Mandarin, focussing on an interesting alternation in activity verbs. Section 6 concludes.

1. Unergative verbs

The unaccusativity hypothesis (Perlmutter 1978; Burzio 1981) claims that there are two types of intransitive verbs, each with a unique syntactic structure. Unergatives have an external argument but no internal argument, while unaccusatives have an internal but no external argument. Mandarin seems to lack unergative verbs. Verbs that are usually assigned to the unergative class cross-linguistically are syntactically transitive in Mandarin. In the majority of cases, transitivity results from insertion of a dummy object. There are also some examples of verb-object strings where the verb is the dummy.

1.1 Dummy objects

Most ‘unergative’ verbs in Mandarin are made transitive through insertion of a dummy direct object. Verbs in this class are contentful (lexical) and take both an external argument and a semantically ‘dummy’ internal argument. Some examples are given in (3).

- | | | |
|-----|-----------|-----------------------------|
| (3) | chi-fan | ‘eat-rice’ = ‘eat’ |
| | he-dongxi | ‘drink-something’ = ‘drink’ |
| | kan-shu | ‘read-book’ = ‘read’ |
| | chang-ge | ‘sing-song’ = ‘sing’ |
| | shuo-hua | ‘speak-speech’ = ‘speak’ |
| | jiao-shu | ‘teach-book’ = ‘teach’ |
| | xie-zi | ‘write-character’ = ‘write’ |
| | zou-lu | ‘walk-road’ = ‘walk’ |
| | kai-che | ‘drive-car’ = ‘drive’ |
| | ban-jia | ‘move-house’ = ‘move’ |
| | pao-bu | ‘run-step’ = ‘run’ |
| | liu-bing | ‘slide-ice’ = ‘skate’ |

In (3), each verb selects its own unique dummy object. Often, this is a cognate noun or a canonical direct object. The object, however, does not contribute to the meaning of the verb, as will be seen in more detail in Section 1.3.

Lexical selection between a verb and its dummy object could be seen as akin to the relationship between a noun and its classifier. In Mandarin, noun roots must occur with a classifier if they are preceded by a numeral or by the demonstratives *nei* ‘that’ or *zhe* ‘this’. While there is a generic classifier that can be used for many common nouns (*ge*), each noun also has a lexically specified classifier.

- | | | | | |
|-----|--------------------|------------------|-------------------------|--------------------|
| (4) | yi feng xin | nei pi ma | zhei bu dianying | san ben shu |
| | one CL letter | that CL horse | this CL movie | three CL book |
| | ‘one letter’ | ‘that horse’ | ‘this movie’ | ‘three books’ |

Nominal classifiers are used to measure out countable units of a kind. It seems possible that dummy objects are doing something similar, they divide the event into countable or measurable units.

Cheng and Sybesma (1998) show that the dummy objects in (3) are syntactically direct objects. The strings in (3) are truly verb-object; they are not lexical compounds. First, dummy objects are in complementary distribution with contentful objects, either referential (5) or not (6).

- (5) a. Wo chi *(fan).
I eat *(rice)
‘I eat.’
- b. Wo chi (*fan) pingguo (*fan).
I eat (*rice) apple (*rice)
‘I eat apples.’ [Cheng & Sybesma #12, pg. 85]

- (6) a. Wo pao *(bu).
I run *(step)
‘I run.’
- b. Wo pao (*bu) shang-dian (*bu).
I run (*step) shop (*step)
‘I am running from shop to shop.’ [Cheng & Sybesma #13, pg. 85]

Dummy objects also behave exactly like referential objects with respect to modification by the quantitative expression *yi-xia* ‘for a bit’. *Yi xia* forms a constituent with a following nominal, as indicated by the bracketing in the following examples.

- (7) a. Wo pao [_{NP}yi-xia bu].
I run a-bit step
‘I ran a bit.’
- b. Wo kan [_{NP}yi-xia shu].

I read a-bit book
'I read a bit.'

- c. Wo kan [_{NP}yi-xia zhei-ben shu].
I read a-bit this-CL book
'I read this book a bit.'

[Cheng & Sybesma #15, pg. 86]

This constituent structure, where temporal or durational modifiers combine syntactically with the object instead of the verb, is a general property of Mandarin, discussed in Paul (2000), Sybesma (1999), Huang (1988). A temporal or durational modifier may precede a direct object, but may never follow it.

- (8) a. *Wo pao bu yi-xia.
I run step a bit
'I ran a bit.'
- b. *Wo kan shu yi-xia.
I read book a bit
'I read a bit.'
- c. *Wo kan zhei-ben shu yi xia.
I read this-CL book a bit
'I read this book a bit.'

Nominal modifiers are pre-verbal in Chinese. The fixed order of modifier and direct object is explained if the modifier and direct object form a constituent. This hypothesis is supported by the optional presence of the particle *-de* between the modifier and the direct object, (9).

- (9) a. Wo pao [_{NP}yi-xia de bu].
I run a-bit DE step
'I ran a bit.'
- b. Wo kan [_{NP}yi-xia de shu].
I read a-bit DE book
'I read a bit.'

The particle *-de* appears between a relative clause and the head noun (10a) and in nominal modification by an adjective (10b).

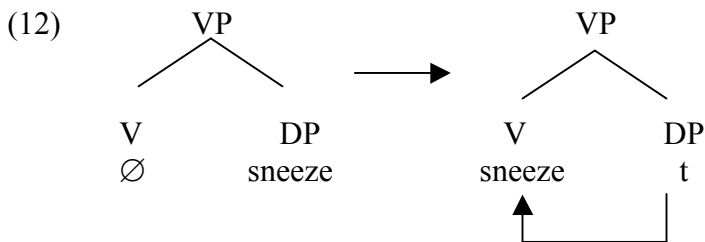
- (10) a. qu zai Shanghai de ren
go to Shanghai DE person
'the person who went to Shanghai'
- b. da de zhuo-zi
big DE table
'big table'

1.2 Dummy verbs

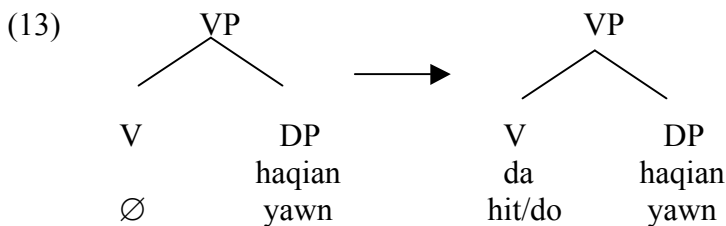
The previous section showed contentful verbs that occur with a semantically dummy object. There are also a few examples of verb-object strings where the verb is the dummy. In the examples in (11), the object is contentful and preceded by the dummy *da*. *Da* is literally ‘hit’ when occurring on its own, but as a dummy or light verb it functions as ‘do’ or ‘make’.

- (11)
- | | |
|-----------|-----------------------------|
| da-haqian | ‘hit-yawn’ = ‘yawn’ |
| da-ge | ‘hit-hiccough’ = ‘hiccough’ |
| da-penti | ‘hit-sneeze’ = ‘sneeze’ |
| da-hulu | ‘hit-snore’ = ‘snore’ |

Hale and Keyser (1993) argue that verbs like ‘yawn’ and ‘sneeze’ in English are derived from the homophonous nouns by incorporation into a null verbal head. In (12), the lexical noun is base-generated as the complement of a null verb, and then incorporates to become a verb.



A possible explanation for the light verb in the examples in (11) is that Chinese cannot derive denominal verbs through head-movement. Light verb insertion is the alternative solution to a sentence without a lexical verb. The derivation of *da-haqian* ‘yawn’ could be as in (13).



Dummy verb insertion is a rescue strategy for a certain syntactic configuration. If nouns may not incorporate into a null head, as is the case in many languages, the null head must be filled in some other way. Dummy verb insertion fills the empty head.

Verbs that are intransitive in other languages correspond to transitive structures in Mandarin. The previous two sections have shown that transitivity results from insertion of either a dummy verb or dummy object. There is an interesting difference between these two strategies, however. When the object is contentful and the verb is light, the dummy verb is consistently *da*, regardless of the contentful object. When the object is the dummy, however, it is selected by the verb. A dummy object is not the same from one verb to the next; each verb selects its own unique dummy object. This observation could be taken to show that there

is a process of selection or agreement between a verb and its dummy object but not between an object and a dummy verb.

1.3 Where a dummy object is not needed

The previous two sub-sections showed that a verb in Mandarin cannot take an external argument without also taking an internal argument. Put differently, verbs in Mandarin always have an internal argument. Unergative verbs are made transitive through the insertion of a dummy verb or the presence of a semantically dummy direct object. While both types of verb show that there is a requirement of some type governing the structure of VP in Mandarin, the discussion in this paper will focus on the verbs in (3), which require a dummy object. In order to understand the nature of the requirement on verbs in Mandarin, and how dummy objects fulfill it, this sub-section examines when a dummy object is needed and the conditions under which the verbs in (3) may appear *without* their dummy objects.

As shown in (14) and (15), a dummy object is necessary where there is no other element in the clause. A subject-verb string is ungrammatical.

- (14) a. * Wo pao.
I run
b. Wo pao bu.
I run step
'I run.'
- (15) a. * Wo chi.
I eat
b. Wo chi fan.
I eat rice
'I eat.'

There are four environments, listed below with examples, where a verb does not need to take its dummy object.

I. no dummy object with contentful object

- (16) a. Wo chi pingguo.
I eat apple
'I am eating apples.'
- b. Wo chi-le yi-wan tang.
I eat-LE one-CL soup
'I ate one bowl of soup.'
- c. Wo pao shang-dian.
I run shop
'I am running from shop to shop.'

A dummy object is unnecessary when a semantically contentful NP follows the verb. A dummy object is also absent when the verb is followed by a resultative or a depictive clause.

II. no dummy object with resultative or depictive clause

- (17) a. Wo pao-de hen lei. resultative
I run-DE very tired
'I ran myself tired.'
- b. Wo pao-de hen kuai. depictive
I run-DE very fast
'I run fast.'/ 'I am a fast runner.'

Both resultative and depictive clauses are linked to the verb via the element *-de*, a verbal enclitic. These two types of clauses have different semantics and different internal structure (Wei 2006), which will be addressed in Section 3.

Dummy objects are also not found when the verb is followed by an adverb of duration or iteration.

III. no dummy object with post-verbal adverbs

- (18) a. Wo pao-le liang-ge xiaoshi. duration
I run-LE two-CL hour
'I ran for two hours.'
- b. Wo pao-le liang-ci. iteration
I run-LE two-time
'I ran twice.'

Mandarin word order is SVO². Many adverbs are required to appear between the subject and the verb. These are adverbs of time (e.g. *yi dian-shi* 'at one o'clock', *zuotian* 'yesterday') and location (e.g. *zai xuexiao* 'at school'), as well as things like *zhi* 'only' and *yiqian* 'already', among others. Adverbs of duration and iteration, however, occur exclusively in post-verbal position, obviating the need for the dummy object, as shown in (18) above. The distribution of Mandarin adverbs will be discussed and analyzed in Section 3.

The final environment where a verb does not need its dummy object is when the verb is followed by the aspect marker *-le*. *-le* is a verbal enclitic, like *-de* in (14), and is associated with perfective (Smith 1991) or inchoative (Rohsenhow 1978, Liu 1988) aspect.

IV. no dummy object in V-*le* sentences

- (19) optionally transitive verbs – null object
- a. Wo chi-le. cf. *Wo chi.
I eat-LE I eat
'I ate it.'

² SOV order is also possible. With this order, the object is always interpreted as definite and is preceded by the particle *ba*.

b. Wo kan-le. cf. *Wo kan.
 I read-LE I read
 ‘I read it.’ [Cheng & Sybesma #5,pg. 83]

(20) strictly intransitive (motion) verbs – motion away

a. Wo pao-le. cf. *Wo pao.
 I run-LE I run
 ‘I ran away.’ / ‘I escaped.’

b. Wo ban-le. cf. *Wo ban.
 I move-LE I move
 ‘I moved away.’

c. Zei liu-le. cf. *Zei liu.
 thief slide-LE thief slide
 ‘The thief slid away’ / ‘The thief is gone’

d. Huoche kai-le cf. *Huoche kai.
 train drive-LE train drive
 ‘The train is gone.’

[Cheng & Sybesma # 6, pg. 83]

Sentences of the form Subj-V-*le* have two types of meanings, as shown in (19) and (20). In (19), with optionally transitive verbs, a specific direct object is understood, suggestive of object *pro*. Note that this interpretation is *only* available when the verb is followed by *-le*. A null object is impossible without *-le*. In (20), verbs without a transitive counterpart are interpreted as motion ‘away’ when followed by *-le*. This interpretation again is only possible when the verb is followed by *-le*. The connection between these two interpretations of V-*le* sentences is discussed in more detail in Section 4.

To summarize, when the verb is followed by one of the elements in (21), a dummy object is not needed.

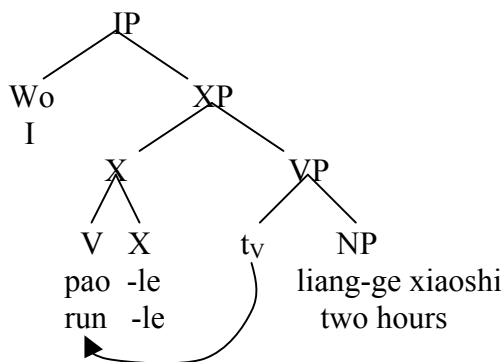
- (21) **I. contentful object**
II. resultative or depictive clause
III. post-verbal adverb (duration or iteration)
IV. -le

The most impressionistic, informal generalization that can be made about Mandarin, based on the environments in (21), is that the verb must be followed by *something*. It is possible that the requirement on verbs or verb phrases in Mandarin is simply prosodic. Dummy objects are inserted when there is nothing else following the verb, presumably to form a particular type of prosodic phrase. It is not clear to me, however, what this prosodic target would be, given the diverse size and shape of post-verbal elements. I take a different stance: that the condition on verb phrases in Mandarin is syntactic. Understanding the requirement on verbs then involves understanding what common syntactic relation the elements in (21) and dummy objects have to the verb. In the next section, I put forth the hypothesis that the requirement in Mandarin is

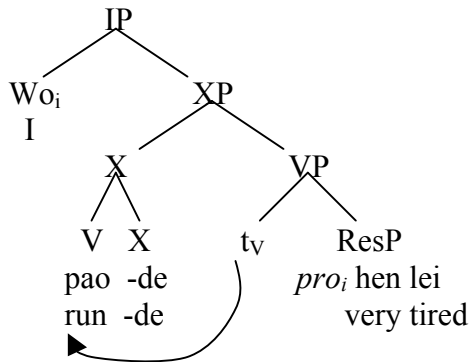
the dummy object is not allowed. A broader generalization about Mandarin syntax is that the verb is never followed by two constituents (Huang 1982, many others). The *V NP NP restriction is discussed and accounted for in Section 3.

I propose that post-verbal adverbs, resultative and depictive clauses are also complements of V in Mandarin, as shown in (25). They satisfy the requirement in exactly the same way as dummy and contentful direct objects. I assume that the enclitics *-de* and *-le* head a higher maximal projection above VP. The verb undergoes head-movement to host the clitic (or possibly also for some other reason). The role of *-le* in V-*le* strings is discussed below. For now, it is only necessary to assume that *-le* is not the complement of the verb but rather heads a higher functional projection.

(25) a. post-verbal adverbs



b. resultative/depictive clause



Support for the complement status of post-verbal adverbs and *-de* clauses will be given in the next section.

So far it has been proposed that direct objects, post-verbal adverbs and resultative and depictive clauses are all complements of V. Each of these elements is in complementary distribution with dummy objects, supporting the hypothesis that dummy objects exist to fill the complement position. The remaining environment where a verb is not required to take a dummy object is when the verb is immediately followed by *-le*. In order to maintain the hypothesis, the V-*le* sequence must involve a filled complement position.

- (29) a. Wo kan nei ben shu.
I read that CL book
'I am reading that book.'
- b. Wo kan-de hen kuai.
I read-DE very fast
'I read fast.'
- c. *Wo kan nei ben shu de hen kuai.
I read that CL book DE very fast

A verb in Mandarin may only be followed by a single constituent, a restriction discussed in detail in Section 3. *-le*, however, can follow a verb even when that verb is followed by an overt object, as shown in (30) and (31).

- (30) a. Wo chi pingguo.
I eat apples
'I am eating apples.'
- b. Wo chi-le.
I eat-LE
'I ate it.'
- c. Wo chi-le pingguo.
I eat-LE apple
'I ate the apples.'
- (31) a. Wo kan san ben shu.
I read three CL book
'I read three books.'
- b. Wo kan-le.
I read-LE
'I read it.'
- c. Wo kan-le san ben shu.
I read-LE three CL book
'I read three books.'

The proposal in this sub-section unifies the *V-le* construction with the generalization that dummy objects are not required when the verb's complement position is filled by other material. The non-transparent readings of *V-le* strings suggests that there is null material in the complement position. This hypothesis also explains why *-le* may cooccur with other post-verbal elements while normally a verb may not be followed by two complements.

This analysis of *V-le* strings raises many questions. If null elements may fulfill the requirement that a verb have a complement, why is this option only taken when the verb is

followed by an aspect marker? Why are overt dummy objects needed when an aspect marker is not present? Second, what is the connection between *pro* and the mysterious <away> element? What controls the interpretation or distribution of null elements? These questions will be taken up in Section 5.

3. Post-verbal adverbs, resultatives and depictives

3.1 The position of adverbs in Mandarin

Support for the structures in (25), where adverbs and clauses following *-de* are complements of V, comes from the distribution of adverbs in Mandarin. First, post-verbal adverbs are members of the class of *situation delimiters*. Situation delimiters have a special status compared to other adverbs in many languages (Korean (Wechsler and Lee 1996), Hungarian (Csirmaz 2005), Greek, Finnish): they can or must be case-marked. While there is no morphological case in Mandarin, situation delimiters are special in occurring strictly in post-verbal position. Other adverbs may only occur in pre-verbal position, immediately following the subject.

- (32) a. Wo pao-le liang-ge xiaoshi.
 I run-LE two-CL hour
 ‘I ran for two hours.’
- b. *Wo liang-ge xiaoshi pao-le
 I two-CL hour run-LE
 intended: ‘I ran for two hours.’
- (33) a. Wo zuotian pao bu.
 I yesterday run step
 ‘I ran yesterday.’
- b. *Wo pao-le zuotian.
 I run-LE yesterday
 ‘I ran yesterday.’

As can be seen in (32), adverbs of duration must occur in post-verbal position and may not occur pre-verbally. An adverb like *zuotian* ‘yesterday’, however, has the opposite distribution: it occurs exclusively in pre-verbal position. The post-verbal position of some adverbs can be understood if we assume that case is assigned post-verbally in Mandarin, and never pre-verbally. Then the exceptional behavior of these adverbs in Mandarin is unified with their behavior in other languages. Certain adverbs in Mandarin must get Case, and consequently must appear in a Case marked position.

Resultative and depictive clauses also occur exclusively in post-verbal position. I propose that the strict post-verbal position of resultatives and depictives is also the result of a Case requirement.

- (34) a. Wo pao-de kuai. **depictive**
 I run-DE fast.
 'I am a fast runner.' or 'I ran fast.'
- b. *Wo kuai pao-bu/le.
 I fast run-step/LE
 intended: 'I am a fast runner.' or 'I ran fast.'
- (35) a. Wo ti-de qiuxie po-le. **resultative**
 I kick-DE ball break-LE
 'I kicked the ball broken.'
- b. *Wo qiuxie po ti-le.³
 I ball break kick-LE
 intended: 'I kicked the ball broken.'

The inclusion of resultative and depictive clauses into the class of Case-requiring elements seems to refute the idea in Wechsler and Lee (1996) that Case-requiring adverbs are only situation delimiters. To account for Mandarin, the class of non-nominal elements that need Case must be redefined. The proposal is that Case-marked elements modify some aspectual property of the event denoted by the verb, specifically the end-point. While adverbs of duration specify the time at which an event is completed, resultative and depictive clauses in Mandarin specify the degree or extent to which an action is taken. Resultatives specify the end result of an action, thereby delimiting the event. Depictives similarly specify the extent of an action. Depictive clauses contrast with pre-VP manner adverbs, an example of which is given in (36).

- (36) a. Ta menmen-de zuo-jin-le jiao-shi.
 he slow-slow-de walk-enter-LE classroom
 'He slowly walked into the room.'

The preverbal adverb in (36) has a manner reading, it says that the way in which the walking action was done was slow. The post-verbal depictive clause in (32) has a slightly different reading, and is best paraphrased in English as something like 'I ran to the point that I was fast' (James Huang, p.c.). In this way, the depictive clauses, like resultatives, specify the end result or state of an event.

A similar phenomenon is found in Hungarian, where certain adjectives appear with accusative case-marking (Csirmaz 2006) when they are modifying the verb.

³Examples with pre-verbal *-de* clauses are hard to construct. It is not clear if, for example, the verb would take a dummy object or an aspect marker if the *-de* clause were pre-verbal (29,30b). It is also not clear if *-de* would remain on the verb, or if it would cliticize to some other element, or be absent entirely. The ungrammatical examples given conform to independent principles of Mandarin phrase structure (ie. a bare verb does not end the sentence, *-de* only occurs between a verb and its dependent clause).

- (37) a. János nagyot sétált.
 János-NOM large-ACC walked
 ‘János walked a large distance.’
- b. János nagyot kiáltott.
 János-NOM large-ACC shouted
 ‘János gave a loud cry.’

Csirmaz argues that accusative marked adjectives in Hungarian ‘introduce and modify a result’ (pg. 186), and shows that they have a similar distribution as frequency adverbs. Situation delimiters are elements that introduce the endpoint of the event. Accusative marked adjectives in Hungarian and post-verbal *-de* clauses in Mandarin all modify the endpoint of the event, making it not at all surprising that they pattern like situation delimiting adverbs.

The distribution of adverbs and *-de* clauses can be taken as evidence that Case is assigned post-verbally in Mandarin. It is possible to make a stronger claim, however. Case in Mandarin is only assigned to the *complement* position of the verb. Moreover, a verb may only take one complement. A Case-marked adverb in Mandarin may not cooccur with an object, suggesting that a verb in Mandarin may only assign Case once.

- (38) *Wo kan nei ben shu liang-ge xiao-shi.
 I read that CL book two-CL hour

This is contrast to languages like Greek or Korean where accusative case may be assigned twice by the same verb. The grammatical Greek sentence corresponding to (38) is given in (39). Here both the direct object and the durational modifier bear accusative case.

- (39) Diavazo to biblio duo ores.
 read.1sg the.acc book.acc two.acc.pl hour.acc.pl
 ‘I read the book for two hours.’

The claim in the preceding section is that dummy objects appear to fulfill a requirement that Mandarin verbs have a complement. The discussion to follow will show that the requirement on Mandarin verbs is more specific than just ‘have a complement’, rather Mandarin verbs have *exactly one* complement.

An important and often-discussed fact about Mandarin clause structure is that only one constituent may follow the verb (Huang 1988, Paul 2000, Sybesma 1999). Not only are post-verbal adverbs and *-de* clauses in complementary distribution with dummy objects, they are also in complementary distribution with contentful objects.

- (40) a. Wo kan-le (*shu) liang-ge xiaoshi. **dummy object**
 I read-LE (*book) two-CL hour
- b. Wo kan-le (*zhe-ben shu) liang-ge xiaoshi. **contentful object**
 I read-LE (*this-CL book) two-CL hour
- (41) a. Wo chi-de (*fan) hen kuai. **dummy object**

I chi-DE (*rice) very fast

- b. Wo chi-de (*mian) hen kuai. **contentful object**
I eat-DE (*noodles) very fast

The examples in (33) and (34) make the important point that dummy objects are not only not *required* when the verb is followed by an adverb or *-de* clause, they are not *allowed*. This observation could reveal two things about Mandarin. First, the fact that two post-verbal elements cannot cooccur could show that these elements are competing for the same unique structural position (complement of the verb). If a verb takes only a single complement, and both elements must be in the complement position, then only one can occur at a time. Second, it could show that a verb in Mandarin may only assign Case to a single constituent. Consequently, if two Case-requiring elements appear in the same clause one will be left without Case, leading to ungrammaticality. I claim that in fact both are true in Mandarin. There is only a single complement position, and Case is assigned only to this position. Mandarin is distinct from Greek and the other languages discussed in Wechsler and Lee (1996) in not allowing Case marking of a direct object and a modifier by the same verb. Consequently, competition for complement-hood and competition for Case are one and the same.

3.2 The verb-copy-construction

The examples in (40) and (41) above are ungrammatical because a single verb must assign Case twice. Mandarin does have a way, however, of including both a direct object and a post-verbal adverb or *-de* clause in a sentence. If two Case-requiring constituents cooccur in a sentence, two copies of the verb must appear as well. This is known as the verb-copy-construction (Gouguet 2006, Fang & Sells 2007).

- (42) a. Wo **kan** zhe-ben shu **kan-le** liang-ge xiaoshi.
I read this-CL book read-LE two-CL hour
'I read this book for two hours.'
- b. Wo **chi** mian **chi-le** liang-ge xiaoshi.
I eat noodles eat-LE two-CL hour
'I ate noodles for two hours.'
- c. Wo **kan** nei-ben shu **kan-de** hen kuai.
I read that-CL book read-DE very fast
'I read that book very fast.'

In verb-copying, the direct object, whether it is dummy or contentful, must precede the adverb (42a,b) or *-de* clause (42c). The hypothetical examples in (43) with the V-complement strings in reverse order from (42) are ungrammatical.

- (43) a. *Wo kan-le liang-ge xiaoshi kan zhe-ben shu.
I read-LE two-CL hour read this-CL book

- b. *Wo chi-le liang-ge xiaoshi chi mian.
I eat-LE two-CL hours eat noodles
- c. *Wo kan-de hen kuai nei ben shu.
I read-DE very fast that CL book

The verb-copy-construction occurs with both dummy and contentful objects. When a dummy object is included in a sentence with a depictive *-de* clause, it highlights the generic reading of the sentence and blocks the eventive reading that is possible when the verb combines only with the *-de* clause.

- (44) a. Wo kan shu kan-de hen kuai.
I read book read-DE very fast
'I am a fast reader.' not *'I read fast.'
- b. Wo kan-de hen kuai.
I read-DE very fast
'I am a fast reader.' or 'I read fast.'
- (45) a. Wo pao bu pao-de hen kuai.
I run step run-DE very fast
'I am a fast runner.' not *'I ran fast.'
- b. Wo pao-de hen kuai.
I run-DE very fast
'I am a fast runner.' or 'I ran fast.'

The verb-copy-construction suggests that Case is not assigned to *any* element that follows the verb, but only the constituent that *immediately* follows it. If being post-verbal were sufficient to be Case-marked, we would expect both an object and an adverb to be able to be assigned Case by a single copy of the verb. The ungrammatical sentences in (46) should be fine.

- (46) a. *Wo kan shu liang-ge xiaoshi.
I read book two-CL hours
- b. *Wo chi mian liang-ge xiaoshi.
I eat noodles two-CL hours

The difference in grammaticality between (41), with two verb copies, and (46), with one verb copy, shows that adjacency to a verb is the relevant requirement of direct objects, adverbs and resultative/depictive clauses. The need to be strictly adjacent to the verb makes sense if Case is only assigned to a complement and verbs only have a single complement. That adverbs and *-de* clauses pattern together in needing to be adjacent to a verb is evidence that these constituents are complements of the verb.

3.3 The internal structure of resultatives and depictives

In English, intransitive resultatives contain a self-anaphor. This anaphor serves as the direct object which the resultative clause predicates of. Resultatives in Mandarin lack a self-anaphor. The comparison is shown in (47).

- (47) a. I ran **myself** tired. **resultative**
b. Wo pao-de **hen lei**.
I run-DE very tired
'I ran myself tired.'

Initially, (47b) suggests that the Direct Object Restriction (DOR) (Levin & Rappaport 1995) is not obeyed in Mandarin. It looks like the resultative clause predicates of the subject of the main clause, while resultatives are only supposed to predicate of objects. Though not obligatory, the Mandarin resultative may contain a self-anaphor.

- (48) Wo pao-de *ziji* hen lei.
I run-DE self very tired
'I ran myself tired.'

Interestingly, depictives may *not* contain a self-anaphor.

- (49) a: Wo pao-de hen kuai. **depictive**
I run-DE very fast
'I am a fast runner./'I ran fast.'
b: * Wo pao-de *ziji* hen kuai.
I run-DE self very fast

Wei (2006) argues that the ungrammaticality of (49b) above shows that resultatives have an argument position that depictives lack, i.e. resultative clauses are bigger than depictives. The possibility of *ziji* 'self' in resultatives shows that there are two argument positions in intransitive resultatives in Mandarin. Perhaps when *ziji* is absent a null *pro* is in the argument position and the DOR is not violated.

- (50) a. Wo pao-de *pro* hen lei.
I run-DE very tired
'I ran myself tired.'
b. Wo qi ma qi-de *pro* hen lei.
I ride horse ride-DE very tired
'I rode the horse and as a result I am tired.'

Little *pro* is interpreted as co-referential with the subject, whether an object is present or not. An overt object can take the place of little *pro*, in this case it appears after *-de*.

- (51) Wo qi de ma hen lei.
I rode DE horse very tired
'I rode the horse and as a result the horse is tired.' [Cheng 2007]

3.4 Time adverbials and telicity

This section looks at the relationship between the complement position of the verb and telicity, specifically the difference between 'for X time' and 'in X time' adverbials. Giorgi and Pianesi (2001) argue that telicity is a property only of predicates specified for terminativity, a privative feature of events. The distinction between telic and atelic events has to do with whether an event has a natural endpoint. The examples in (52) are telic because there is a point at which the event could no longer continue. In (52b), for example, the event of John running cannot continue past his arrival at home.

- (52) a. John ate an apple.
b. John ran home.
c. John reached the top.
d. John died.

The sentences in (53) are atelic. While they describe events that are no longer on-going, these are events that could have continued. In (53d), for example, John could have continued pushing the cart.

- (53) a. John ate apples.
b. John ate.
c. John ran.
d. John pushed the cart.

A reliable test for whether a sentence is telic or atelic is whether it can be modified by adverbials of the form 'for X time' and 'in X time'. 'In X time' adverbials are only compatible with telic predicates (54), while 'for X time' adverbials modify atelic events (55).

- (54) a. John ate an apple in/*for ten minutes.
b. John ran home in/*for ten minutes.
- (55) a. John ate apples *in/for ten minutes.
b. John ran *in/for ten minutes.

To show that the existence of a distinction between telic and atelic predicates is dependent on further aspectual properties, Giorgi and Pianesi compare the simple past with the imperfect in Italian. The imperfect gives rise to a continuous reading: the event began in the past but is still possibly true in the present. With the continuous reading of the imperfect, modification by 'for X time' and 'in X time' adverbials are both impossible.

- (56) Mario mangiava (una mela) *in/*per un'ora.
 Mario ate-IMP (an apple) in/for an hour

In Mandarin, both ‘for X time’ and ‘in X time’ adverbials combine with verbs marked by perfective *-le*. The examples in (57) are ungrammatical without *-le*.

- (57) a. Ta **zai shi fenzhong nei** chi-*(le)
 he PREP ten minute within eat-LE
 ‘He ate it **in ten minutes.**’
- b. Ta chi-*(le) **shi fenzhong.**
 he eat-LE ten minutes
 ‘He ate **for ten minutes.**’

While ‘for X time’ adverbials occur exclusively in post-verbal position, as shown in previous sections, ‘in X time’ adverbials can only occur *pre*-verbally. The difference in placement of these two types of adverbials establishes a connection between Case assignment and telicity in Mandarin. ‘For X time’ adverbials appear in a Case marked position and modify atelic predicates. These adverbials create a telic event, by specifying a telos. In (57b), the telos of the eating event is the end of ten minutes. In (57a), the ‘in X time’ adverbial is pre-verbal and modifies a telic event. The verb here is followed only by the aspect marker *-le*. We saw earlier that V-*le* strings are in fact V-*pro-le* strings, where *pro* is in the case marked complement position of the verb. In the VP *chi-le* ‘eat-LE’ in (57a), the telos is contributed by little *pro*. (57a) is actually (58).

- (58) Ta zai shi fenzhong nei chi-*(le)
 he PREP ten minute within eat-*pro*-LE
 ‘He ate **it** in ten minutes.’

Eating is over when *pro* is gone. The ‘in X time’ adverbial then specifies the amount of time it took to reach this telos, but not does not define the telos in any way. In both sentences in (57), then, telicity of the VP is contributed by the Case marked element in the complement position of the verb.

4 Case and unaccusativity

4.1 A possible alternative: verbs must assign Case

The proposal argued for in the previous sections is that verbs in Mandarin require complements. Dummy objects are inserted into the complement position of a verb that otherwise would have no complement. In this way, unergative intransitives are absent from the language. A possible alternative explanation for the distribution of dummy objects is that verbs must assign Case. Under this view, dummy objects are inserted when there is no other Case-bearing element in the clause. In each of the four environments where dummy objects do not occur, Case must then be assigned to some other constituent. The data looked at so far do not choose between these two proposals.

The complementary distribution of dummy and contentful objects is unproblematic under either account. A verb assigns Case to its object, regardless of its semantic content. Given the discussion of verb-copying in the previous section, post-verbal adverbs and *-de* clauses also do not distinguish between the two analyses. The distribution of post-verbal adverbs and *-de* clauses shows that they need Case. In theory, Case could be assigned to any post-verbal position, and the complement position could be empty. In Mandarin, however, the verb-copy-construction shows that Case is only assigned to the complement position of the verb. This explanation of the verb-doubling facts makes it impossible to distinguish between an analysis where verbs require complements and one where they must assign Case. Assigning Case requires a complement.

The *V-le* sentences also do not distinguish between the complement and Case analysis. The null elements (*pro* and *<away>*) that were claimed to fill the complement position of the verb could just as well be appearing in order to give the verb something to assign Case to. Regardless of whether a Case or complement analysis is chosen, it is still a mystery why null elements may fulfill the requirement only when an aspect marker is present. Why the null element has the meaning ‘away’ with verbs which cannot take contentful objects also remains a mystery under either analysis. The next sub-section will explain these facts.

The data presented so far do not elucidate whether dummy objects appear to bear Case or to fill the verb’s complement position. Unaccusative verbs, presented in the next section, can distinguish between the two analyses. The existence of unaccusative verbs favors the complement analysis and shows that Mandarin verbs are not required to assign Case.

4.2 Unaccusatives

While intransitive unergatives do not exist in Mandarin, intransitive unaccusatives do. An external argument implies an internal argument in Mandarin, but not the reverse. A verb may take an internal argument and not have an external argument. Unaccusative verbs in Mandarin differ from the ‘unergative’ verbs in Section 1 in that they do not take a dummy object. The unaccusative verbs in (59) are all monosyllabic and predicate of a single argument.

(59)	si	‘die’
	lai	‘come’
	chen	‘sink’
	kai	‘open’
	po	‘break’
	dao	‘arrive’
	hua	‘melt’
	lo	‘fall’
	zhou	‘leave’
	chu	‘exit’

The verbs in (59) most often appear with the aspect marker *-le*. The important distinction between the unaccusative verbs in (59) and the ‘unergative’ verbs, is that unergatives must take a dummy object, resulting in a transitive structure. The verbs in (59) may combine with just a subject: they are truly intransitive. There is no object *pro* in the sentences in (60). Some

examples of sentences with the verbs in (59) are given in (60). *-Le* is obligatory in these sentences.

- (60) a. Boli po-le.
glass break-LE
'The glass broke.'
- b. Chuan chen-le.
ship sink-LE
'The ship sank.'
- c. Nansi dao-le.
man arrive-LE
'The man arrived.'
- d. Bing hua-le.
ice melt-LE
'The ice melted.'

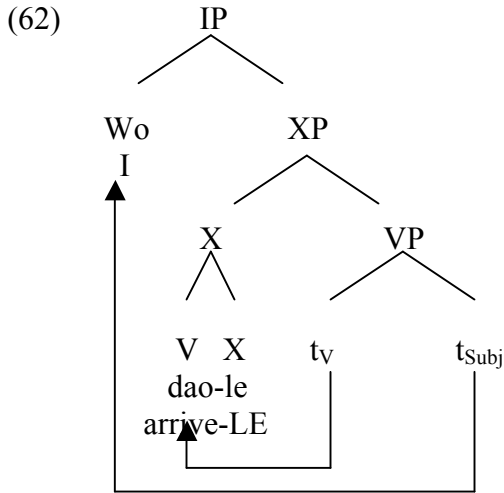
The 'unergative' verbs, like the unaccusatives in (59), may also combine with just a subject and an aspect marker. With 'unergative' verbs, however, *V-le* structures have some additional meaningful element, either object *pro* or motion 'away'. There is no additional meaningful element in *V-le* strings with unaccusative verbs. This contrast is easily observable in the English glosses in the representative examples given in (61).

- (61) a. Wo chi-le. **object *pro***
I eat-LE
'I ate *it*.'
- b. Wo pao-le. **motion 'away'**
I run-LE
'I ran *away*.'
- c. Wo dao-le.
I arrive-LE
'I arrived.'

In the unaccusative sentence in (61c) *-le* contributes only a perfective meaning, indicating that the event has been completed, and does not license the extra null elements seen in (61a,b).

The basic Subject-Verb strings like those in (60) contrast with the up to now un-violated generalization that Mandarin verbal predicates are transitive. The existence of intransitive verbs is compatible with an analysis where verbs are required to have a complement, but not one where verbs are required to assign Case. There is no constituent in (60) for the verbs to assign Case to, and yet the sentences are grammatical. If unaccusative verbs in Mandarin are truly unaccusative, their single argument originates as an internal argument, the complement of the verb. The sentences in (60) are then compatible with the complement requirement

analysis, since they have the structure in (62) where the verb's complement position is filled with the trace of the surface subject.



This section has shown that while Mandarin lacks unergative intransitives, it does have intransitive unaccusatives. This asymmetry is explained if Mandarin verbs are required to have a complement. Verbs may then have a single argument only if that argument is internal, predicting the possibility of unaccusative but not unergative verbs. Dummy objects exist in Mandarin to fill the complement position of verbs that do not select an internal argument. When no other constituent can fill the complement position of an ‘unergative’ verb, a dummy object is inserted.

5 Activity verbs and motion ‘away’

Both optionally transitive verbs like *kan* ‘read’ and *chi* ‘eat’ as well as intransitive activity verbs like *pao* ‘run’ and *zou* ‘walk’ can appear without their dummy objects when they are followed by the aspect marker *-le*. With optionally transitive verbs, the complement position is filled by object *pro*. With activity verbs, I have been assuming that the complement position is filled by some null element meaning <away>. This section addresses the motion ‘away’ interpretation of activity verbs in *V-le* sentences and proposes that the verbs in these sentences are actually unaccusatives.

The following examples show a single lexical verb in two different constructions, with its dummy object and followed only by *-le*.

- (63) a. Lisi pao bu.
Lisi run step
‘Lisi is running.’
- b. Lisi pao-le.
Lisi run-LE
‘Lisi ran away.’ or ‘Lisi escaped.’
- (64) a. Ta zou lu.
he walk road
‘He is walking.’
- b. Ta zou-le.
he walk-LE
‘He walked away.’ or ‘He left.’

- (65) a. Zei liu bing.
thief slide ice
'The thief is skating.'
- b. Zei liu-le.
thief slide-LE
'The thief slid away.' or 'The thief is gone.'
- (66) a. Zhangsan kai che.
Zhangsan drive car
'Zhangsan is driving.'
- b. Huoche kai-le.
train drive-LE
'The train is gone.'

As can be seen by comparing the English glosses in the a and b examples above, these verbs have very different meanings depending on whether they are followed by a dummy object or by *-le*. Up to this point I have been assuming that the same lexical verb is present in both a and b examples. In this section I propose that the verb in the a examples is unergative and must take a dummy object or another overt complement. The verbs in the b examples are unaccusative: the surface subject originates as the complement of the verb.

The first argument in favor of this analysis is the difference in meaning between the a and b examples. When a motion verb combines with a dummy object, the VP denotes an activity. The sentences in the a examples are atelic. When a motion verb combines with only *-le*, however, the result is a telic, change-of-state verb. The translation of V-*le* sentences as movement 'away' is somewhat misleading. Each of the V-*le* sentences in (63)-(66) has a meaning that is some shade of 'leave'. Like all unaccusative verbs seen so far in Mandarin, these are change-of-state verbs. The subject was present, and now the subject is absent. The way in which this change came about varies depending on the verb.

The proposed difference between an unergative and an unaccusative lexical entry for the verbs in (63)-(66) is most clear in (66), with the verb *kai* 'drive'. In a sentence with an unergative verb, the subject is an agent, an underlying external argument. In (66a), the surface subject is the agent, *Zhangsan* is doing the driving. In (66b), however, the surface subject is *huoche* 'train'. A train is not agentive, and cannot do driving like Zhangsan can do driving. In (66b), the train is the patient of a driving action, it is being driven away. A subject with a patient thematic role is compatible with an unaccusative structure. The subject in (66b) is derived. The agent-patient distinction between a and b examples also seems to hold for the sentences in (63)-(66).

The difference between the unergative and unaccusative use of the verb *pao* 'run', can be seen in the following examples. When one wants to say that an individual is literally running away *from* something (e.g. an exploding car, or the school building) the notion of 'away' is contributed by an overt lexical item *kai*.

- (67) Zhangsan cong xuexiao pao-kai.
Zhangsan from school run-away
'Zhangsan ran away from school.' literal

In the sentence in (67), the subject is an agent who is actually running on a path from the school building. The sentence in (68) is the same as that in (67), only *pao-kai* 'run away' has been changed to *pao-le* 'run-LE'.

- (67) Zhangsan cong xuexiao pao-le.
 Zhangsan from school run-LE
 ‘Zhangsan ran away from school.’ non-literal

The sentence in (67) has a more figurative, abstract meaning. Zhangsan has successfully avoided going to school, but there does not have to be a literal running activity of which Zhangsan is the agent. When the dummy object is present and the single contentful object is an agent, then the verb has an activity reading. With only a single argument, the verb is an unaccusative change-of-state verb. Another suggestive piece of evidence for the distinction between unergative and unaccusative ‘run’ is found in sentences designating motion towards something as opposed to motion away. The following two sentences are both grammatical. In (68a), the verb ends the sentence and is followed by nothing. In (68b), *pao* ‘run’ is followed by its dummy object *bu* ‘step’.

- (68) a. Zhangsan xiang wo pao.
 Zhangsan towards me run
 ‘Zhangsan ran towards me.’ non-literal
- b. Zhangsan xiang wo pao bu.
 Zhangsan towards me run step
 ‘Zhangsan ran towards me.’ literal

The sentence in (68a) means something like ‘Zhangsan came towards me’. The idea of ‘run’ here is non-literal, and the verb simply implies that the subject arrived at the location specified by the pre-verbal adverbial *xiang wo* ‘towards me’. In (68b), however, there must be a literal running activity. In (68a), the verb is final in the sentence, seemingly violating the generalization that verbs always have a complement. The surface subject in (68a), however, is not an agent, it originates in the object position of the verb. In (68b), however, the subject is an agent and an underlying external argument and consequently the verb must fill its complement position with its dummy object.

6 Conclusion

This paper has argued that verbs in Mandarin must always have a filled complement position. Mandarin has intransitive unaccusative verbs, with a single internal argument, but no intransitive unergative verbs. Verbs that select a single external argument appear with a dummy object in their complement position. This asymmetry is explained under the hypothesis because unaccusative verbs have their complement position filled by the trace of the surface subject. It was shown that in all of the situations where an unergative verb appears without its dummy object, some other element is filling the complement position. Lastly, a connection between subject thematic roles and syntactic structure was observed, revealing that certain verbs of motion have both an unaccusative and an unergative lexical entry.

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