

# ON DE IN THE CHINESE EXTENT ADVERBIAL CONSTRUCTION

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## 1. INTRODUCTION

The Chinese Extent Adverbial Construction<sup>1</sup> (henceforth CEAC) refers to sentences such as the following:<sup>2</sup>

- (1) a.    ta        chi        de        hen                    zixi.  
         he        eat        DE        very                    careful<sup>3</sup>  
         "He eats very carefully."
- b.    ta        ku        de        yanjing zhong        le.  
         he        cry        DE        eye        swell        PAST  
         "He cried (so much) that his eyes became swollen."

One of the unique characteristics of these sentences is that there are two verbal elements in each<sup>4</sup>: (e.g. *chi* and *zixi* in (1a) and *ku* and *zhong* in (1b)). Another special characteristic of these sentences is that there is a constant morpheme *de* (glossed here simply as "DE" for lack of a better term) somewhere between the two verbal elements. If V1 and V2 are used to represent the two verbal elements, the structure of these sentences can be roughly formalized as follows:

- (2)            (NP) V1 DE (NP) V2 (NP)

One hot debate in current literature concerns which of the two verbal elements is the main verb. Although it is clearly the case in the English translation that the element corresponding to the first verb, that is, V1, in a CEAC is the main verb, such clarity is not found in the Chinese sentences. In fact, Huang and Margione (1985) provide several pieces of evidence against treating V1 as the main verb. Their arguments are briefly presented in the following section.

## 2. HUANG AND MARGIONE'S ARGUMENTS

### 2.1. Inability to Form V-not-V Questions

The first argument produced by Huang and Margione (1985, henceforth, H&M) points to the fact V1 cannot form V-not-V<sup>5</sup> questions as main verbs normally can. The following examples illustrate their point:

- (3) a.    i)    ta        chi        fan.  
         he        eat        food  
         "He eats (food)."

- ii) ta chi bu chi fan?  
 he eat not eat food  
 "Does he eat (food)?"
- b. i) ta zixi.  
 he careful  
 "He is careful."  
 ii). ta zixi bu zixi?  
 he careful not careful  
 "Is he careful?"
- c. i). ta chi de zixi.  
 he eat DE careful  
 "He eats carefully."  
 ii) ta chi de zixi bu zixi?  
 he eat DE careful not careful  
 "Does he eat carefully?"  
 iii) \*ta chi bu chi de zixi?  
 he eat not eat DE careful  
 ???

The (i) examples in the above are statements while (ii)s are questions derived from the statements. The derivation, called V-not-V question formation, is a process of suffixing a "not-V<sup>1</sup>" sequence to the verb V<sup>1</sup> of the statements. There are two verbs that are involved here, *chi* "eat" and *zixi* "(be) careful". Both can form V-not-V questions in simple sentences, as shown in (aii) and (bii). Yet, when they appear in a CEAC, the verb in V1 position, *chi* "eat", cannot undergo this operation any more (ciii), while the verb in V2 position, *zixi* "(be) careful", can (cii).

H&M argue that any adequate grammar must explain the ungrammaticality of the sentence in (ciii), and treating V2 as the main verb seems to promise such an explanation.

## 2.2. Inability to Take an Aspect Marker

Another reason given by H&M for treating V2 as the main verb is based on the following observation.

- (4) a. ta ku le.  
 he cry ASP  
 "He cried."  
 b. yanjing zhong le.  
 eyes swell ASP  
 "(His) eyes became swollen."  
 c. ta ku de yanjing zhong le.  
 he cry DE eyes swell ASP  
 "He cried (so much) that his eyes became swollen."

- d. \*ta ku le de yanjing zhong.  
 he cry ASP DE eyes swell  
 ???

The above examples show that a verb can usually have an aspect marker such as *le* "PAST or PERFECTIVE" (glossed here simply as ASP) immediately follow it when the verb appears in simple sentences ((a) and (b)) and in V2 position (c), but it cannot do so as V1 in a CEAC (d).

It is thus argued by H&M that if V1 is treated as the main verb, such treatment would have difficulty explaining the above observation, whereas treating V2 as the main verb does not entail such a problem.

### 2.3. Inability to Be Negated

A third argument against treating V1 as the main verb comes from the observation that V1 cannot be negated by the negation morpheme *bu* "not" in the way that main verbs can in simple sentences.

- (5) a. ta bu chi lingshi.  
 he not eat junkfood  
 "He does not eat junkfood."  
 b. ta bu zixi.  
 he not careful  
 "He is not careful."  
 c. ta chi de bu zixi.  
 he eat DE not careful  
 "He does not eat carefully."  
 d. \*ta bu chi de zixi.  
 he not eat DE zixi  
 ???

Just as in (4), (a) and (b) in (5) are simple sentences, while (c) and (d) are CEAC sentences. It is clearly shown that a verb can be negated by *bu* "not" in normal sentences ((a) and (b)), and can still be thus negated in V2 (c). The same negation is, however, not permitted for V1 in a CEAC (d).

### 2.4. Inability to Form a "Complex Verb Compound"

H&M also point out that a verb which can normally form a "complex verb compound" as a main verb cannot do so in V1 position but can in V2:

- (6) a. ta chi zhemo duo.  
 he eat so much  
 "He eats so much."

- b. ta chi-bu-liao zhemo duo.  
 he eat not finish so much  
 "He cannot eat so much."
- c. fan duo de ta chi-bu-liao.  
 food much DE he eat not finish  
 "There is so much food that he cannot eat it all"
- d. \*ta chi-bu-liao de zhemo duo.  
 he eat not finish DE so much  
 ???

In (6), both (a) and (b) are normal sentences where both the verb *chi* "eat" in (a) and the derived complex verb compound *chi-bu-liao* "eat-not-finish" in (b) can occur as the main verb. However, a CEAC sentence is grammatical when the derived form appears in the V2 position (c) while ungrammatical when it appears in the V1 position (d).

## 2.5. Inability to Take a Post-Verbal Object

It has been argued convincingly by Sun and Givon (1985) that Chinese, just as English, is essentially a language with an SVO word order. However, H&M observe, V1 in a CEAC has to have its object preceding rather than following it.

- (7) a. ta chi fan.  
 he eat food  
 "He eats (food)."
- b. ta xia de bu chi fan.  
 he scared DE not eat food  
 "He is so scared that he stops eating."
- c. \*ta chi fan de zixi.  
 he eat food DE careful  
 ???
- d. ta fan chi de zixi.  
 he food eat DE careful  
 "He eats (food) carefully."

In (a) where the sentence is a simple one, the verb *chi* "eat" and the object *fan* "food" are in the normal VO order. The same word order is found in V2 position in (b). When the same verb appears in the V1 position, the sentence becomes ungrammatical if the object occurs after the verb (c). This object has to appear before the verb as is shown in (d).

All of the above observations, argued H&M, seem to suggest that V2 be treated as the main verb.

### 3. HUANG'S ARGUMENTS

Huang (1988) provides several arguments to reject the V2-as-main-verb treatment. His arguments are based on observations having to do with scope of negation, scope of question and the homophonic state of *de*.

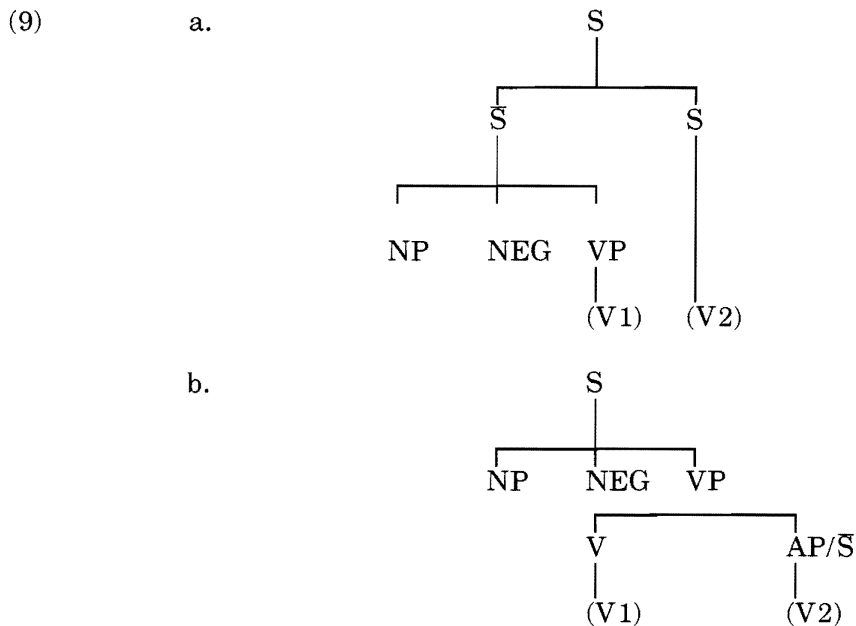
#### 3.1. Scope of negation

Huang (1988) argues that although V1 cannot be directly preceded by the negative morpheme *bu* "not" (see Section 1.1.3.), its negation is nevertheless possible if the negation is carried out by two other morphemes with *bu* "not" as one of them. Huang then argues that when such negation operation occurs, the V2-as-main-verb position runs into a problem in wrongly predicting the scope of negation. The following examples illustrate his point:

- (8) a.    ta     bu     shi    pao    de     hen    kuai.  
          he    not    be     run    DE    very   fast  
          "It is not the case that he runs fast."
- b.    ta     bu     hui    pao    de     hen    kuai.  
          he    not    will   run    DE    very   fast  
          "He will not run fast."

The scope of negation by *bu shi* "be not" (a) or *bu hui* "will not" (b) in the above examples is over the entire string that follows which includes both V1 and V2.

Huang argues that if scope of negation, as generally understood, is determined by c-command, namely, the negative morpheme c-commands what is in its scope of negation, it follows that a grammar which treats V1 as being in a subordinate clause would wrongly predict that the scope of negation covers only V1 and nothing else. Compare (a) and (b) in the following:



In (9a), the NEG node appears in the higher  $\bar{S}$ , and thus c-commands only V1 and no others, yielding the incorrect result that its scope of negation is over V1 only. The configuration of (9b), on the other hand, correctly predicts that the NEG has scope over everything that follows it.

### 3.2. Scope of question

As mentioned previously, one of the problems pointed out by H&M (1985) is that V1 cannot form V-not-V questions (see Section 1.1.1.). Huang argues again that V1 can be "questioned" if the V-not-V is formed out of *shi* "be" or *hui* "will", just as in the case of negation.

He contends that when such question formation occurs, the position of treating V2 as the main verb runs into difficulty in wrongly predicting the scope of question.

- (10) a.    ta     shi     bu     shi     pao     de     hen     kuai?  
           he     be     not    be     run     DE     very    fast  
           "Is it the case that he runs fast?"
- b.    ta     hui     bu     hui     pao     de     hen     kuai?  
           he     will    not    will    run     DE     very    fast  
           "Will he run fast?"

The scope of question by *shi bu shi* "be not be" in (a) or *hui bu hui* "will not will" in (b) is over the entire string that follows. Since scope is determined by c-command, the H&M's position (9a) applied on (10a or b) yields a false result. It wrongly predicts that the scope of negation is over V1 only, while it should be over the entire sentence.

### 3.3. DE-clash

Another argument by Huang is illustrated in the following:

- (11)       ta     zheng   de     hen   lan.  
           he/it   steam   DE     very   soft  
       a.     "He steamed it very soft."  
       b.     "What he steamed is very soft."

The sentence in (11) is ambiguous allowing for two interpretations, (a) and (b). This ambiguity arises as a result of the homophony of *ta* "he" (a) and *ta* "it" (b), and of the CEAC *de* as in the (a) interpretation and the normalizer *de* as in the (b) translation.

Huang argues that if the sentence in (11) is analyzed as having V1 in the subordinate clause, there is no way to differentiate the two interpretations structurally: both will have the same phrase structure. On the other hand, he argues, if the sentence is to be analyzed with V1 as the main verb, the two homophonic sentences may be distinguished structurally.

Huang also discusses the controversial issue of the Binding Conditions and the Chinese empty categories in CEAC sentences, but, again, due to the complicated nature of the problem, I have to refrain from getting into it here.<sup>6</sup>

#### 4. TOWARD A UNIFIED ACCOUNT

In the above sections, arguments from two competing theories regarding the phrase structure of the Chinese Extent Adverbial Construction were briefly reviewed. In this section, the position that V1 should be treated as the main verb is further defended, and a unified analysis is developed to account for the observations brought forth by H&M which are used as evidence against treating V1 as the main verb.

##### 4.1. In Defence of the V1-as-the-Main-Verb Position

It is interesting to point out that H&M's position suffers a dilemma. That is, on the one hand, a verb may still be restricted exactly as V1 is even though it is clearly the main verb of a full sentence; on the other, a verb is not normally restricted as V1 is even if it is the predicative verb of a clause.

Recall that H&M argue that V1 cannot be the main verb of a CEAC because it is restricted from appearing in certain syntactic contexts. Their underlying assumption is that the main verb of a full sentence (versus that of a clause) cannot be thus restricted. This assumption is, however, not founded. There are clear cases where main verbs whose main-verb-hood is completely transparent are similarly restricted.

- (12) a.        ta    chi    zhe            lingshi.  
              he    eat    PROG        junk-food  
              "He is eating junk-food."
- b.    (i)    \*ta    chi    bu    chi    zhe            lingshi.  
                      he    eat    not    eat    PROG        junk-food  
                      ???  
                      (ii)    ta    shi    bu    shi    chi    zhe            lingshi?  
                          he    be    not    be    eat    PROG        junk-food  
                          "It is the case that he is eating junk-food?"
- c.    (i)    \*ta    bu    chi    zhe            lingshi.  
                      he    not    eat    PROG        junk-food  
                      ???  
                      (ii)    ta    bu    hui    chi    zhe            lingshi        kan    dianshi.  
                          he    not    will    eat    PROG        junk-food    watch    T.V.  
                          "He will not be eating junk-food while watching T.V."
- d.        \*ta    chi    le            zhe            lingshi.  
                      he    eat    PAST        PROG        junk-food  
                      ???
- e.        \*ta    chi    lingshi    zhe.  
                      he    eat    junk-food    PROG  
                      ???

- f.           \*ta   chi-bu-liao       zhe   lingshi.  
              he   eat-not-finish   PROG   junk-food  
              ???

In the above examples, the verb *chi* "eat" is clearly the main verb in every case. However, it behaves almost exactly as V1 in a CEAC in terms of the restrictions on V1 observed by H&M. Like V1, it cannot, for example, transform into V-not-V shape (b-i), be negated by *bu* "not" (c-i), take the aspect marker *le* "PAST" (d), be followed immediately by its own object (e), or be a complex verb compound (f).

These examples clearly indicate that those restrictions on V1 cited by H&M as evidence against treating V1 as the main verb should bear no significance whatsoever in determining the main-verb-hood of a sentence.

In any event, by treating V1 as the verb of the subject clause, H&M have by no means solved the very problems they observe. This is because there is no reason for the verb of a subordinate clause to be thus restricted.

- (13) a.   [[ta chi-bu-chi   rou] shi   jian   da   shi].  
           he eat-not-eat meat is   one   big   thing  
           "Whether he eats meat or not is an important issue."  
       b.   [[ta bu   chi   rou] shi   jian   huai   shi].  
           he not   eat   meat is   one   bad   thing  
           "That he does not eat meat is bad."  
       c.   [wo zhidao       [ta   qu   le            zhongguo]].  
           I   know         he   go   PAST        China  
           "I know he has gone to China."

Each of the sentences in (13) contains a subordinate clause -- a subject clause in (a) and (b) and an object clause in (c). Contrary to the belief of H&M, the verb in these clauses is not at all prevented from turning into V-not-V shape (a), being negated by *bu* (b), being followed immediately by the aspect marker *le* (c), or being followed immediately by its own object (a and b).

Besides providing evidence to reject the assumption that only main verbs can appear in all of these contexts, the examples in (13) also suggest that the verbs which can appear in these contexts may not necessarily be the main verbs.

All the above cases clearly indicate that H&M's position has no empirical support and cannot be accepted, while the traditional position held by such linguists as Huang (1988) is indeed the right configuration.

#### 4.2. The *de*-Constraint

If V1 is the main verb, why is it that it exhibits those "peculiar" syntactic behaviors observed by H&M? It is argued in this section that these behaviors are as a matter of fact the result of a surface structure constraint, called here the *de*-constraint, which is developed and expounded in the following paragraphs.



(14) *de*-Constraint

In surface syntactic representation, the CEAC DE node must be the only overt sister node to V1.

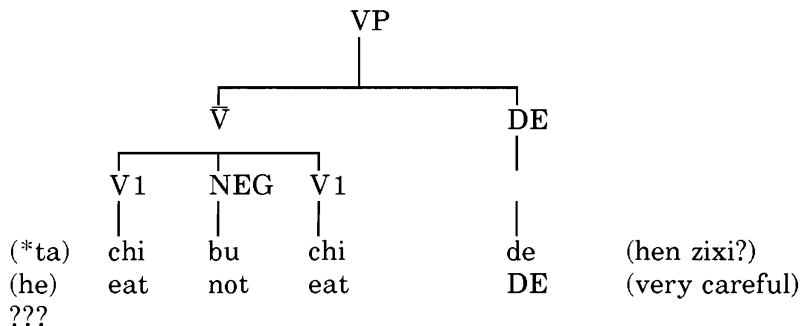
The *de*-constraint ensures that in the surface representation of a CEAC sentence, the node DE must form an immediate constituent with V1 and that this constituent has only DE and V1 as its overt (i.e. not including traces of movement) components.

In what follows, it is demonstrated that this constraint achieves a high degree of success in accounting for why it is that V1 cannot form V-not-V questions, be followed by the aspect marker *le*, be followed by its object, or be a "complex verb compound".

4.2.1. V-not-V Question Formation

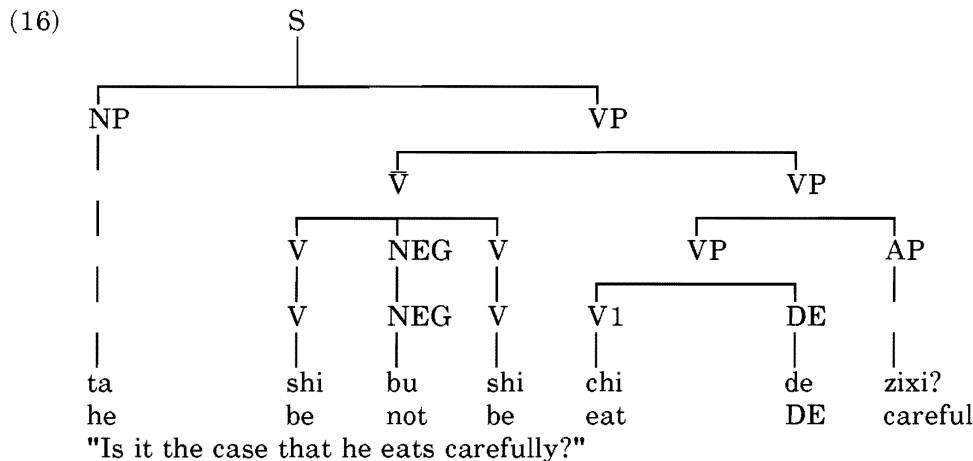
As mentioned earlier in this paper, linguists who believe that V2 is the main verb argue that V1 cannot be the main verb of the sentence since it cannot undergo the V-not-V question formation (3ciiii). Given the *de*-constraint, this fact is readily explained. The result of forming such a question "phrase" with V1 would violate the *de*-Constraint.

(15)



Sentence (15 = 3ciiii) derived from (3ci) shows that after the V-not-V question formation, the node DE in the relevant local tree becomes the only sister node to the mother node which dominates V1, rather than to V1 itself. This violates the *de*-constraint and therefore the sentence is ruled ungrammatical.

The present theory not only uncovers the mystery why V1 cannot form V-not-V questions, it can also explain why it is that when another verb immediately precedes V1, as observed by Huang (1988), this preceding verb can form a V-not-V question "phrase." The answer lies again in the existence of the *de*-constraint.

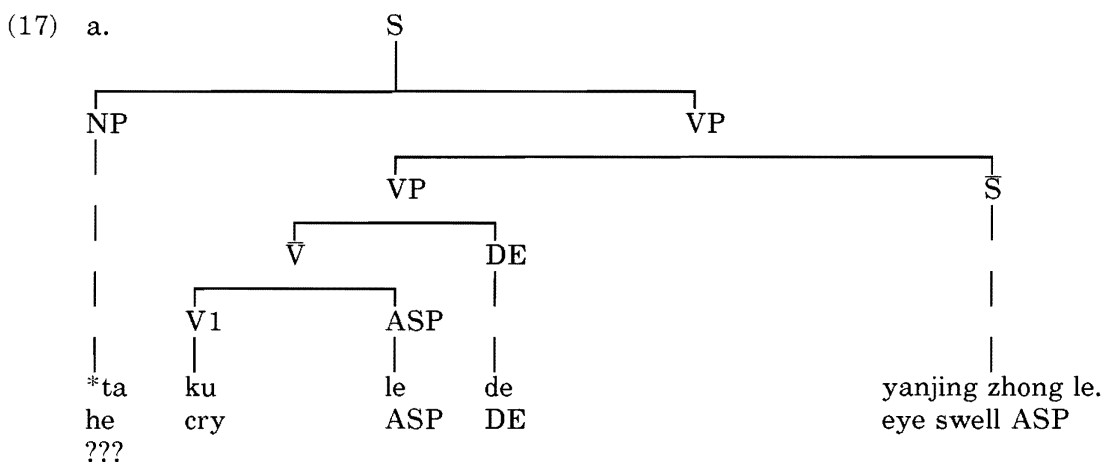


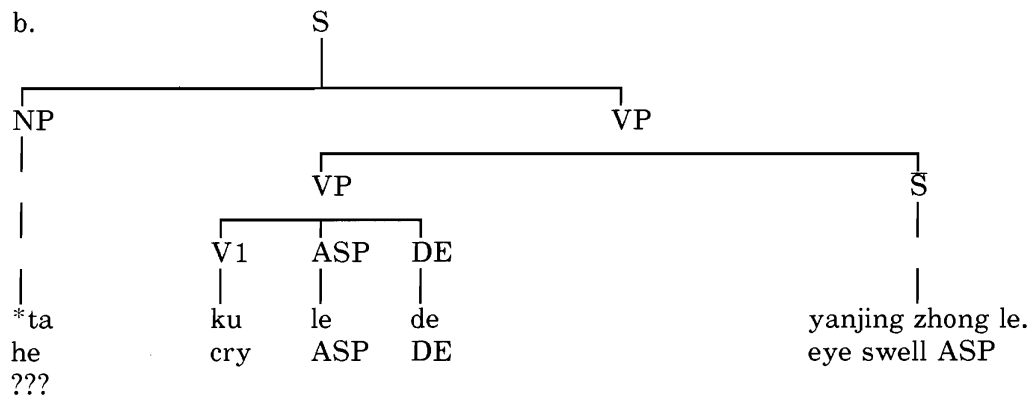
When another verb (e.g. *shi* "be") precedes V1, V to V-not-V transformation can be freely carried out with this preceding verb without affecting the syntactic relation between DE and V1 as designated by the *de*-Constraint. On the other hand, V1 would be "disconnected" from DE in such a manner that the *de*-Constraint is violated if it itself has to undergo the V-not-V transformation (see 15).

The above sentence suggests that the particle *de* somehow has to be a sister to a bar-zero V node. Such evidence provides further independent motivation for the *de*-Constraint.

#### 4.2.2. The Aspect Marker *le*

The fact that when V1 has the past/perfective particle *le* immediately following it the sentence becomes ungrammatical (4d) is again nothing mysterious given the *de*-Constraint. The ungrammaticality is due to the fact that the ASP between V1 and DE causes the breaking down of the V1-DE "exclusive sister-hood" relation stipulated by the *de*-Constraint.

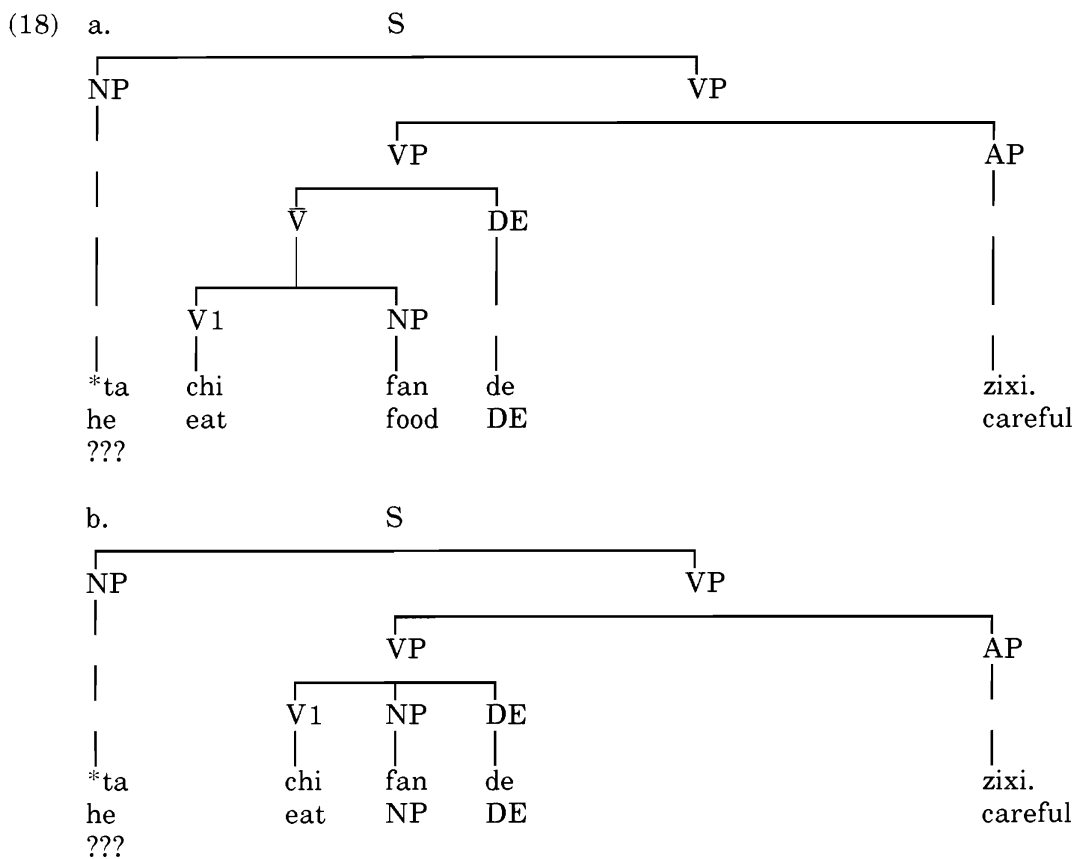




In (17a), the DE node and V1 are not sisters. In (17b), they are not the only overt sisters dominated by the same mother. In neither case, the *de*-Constraint is obeyed, and, therefore, the sentence is ruled out as ungrammatical.

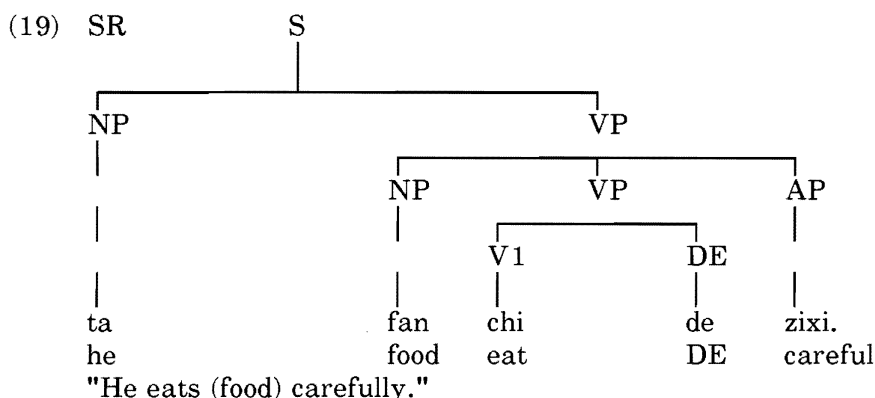
#### 4.2.3. Object Raising

The *de*-Constraint that is proposed in (14) also correctly predicts that the V1 object has to move elsewhere from its normal post-verbal position. The following are two possible phrase markers for the ungrammatical sentence in (7c).



Both syntactic phrase structures in (a) and (b) fail to satisfy the *de*-Constraint by having the node DE not in the stipulated syntactic position with reference to V1. In (a), DE is a sister to a  $\bar{V}$  rather than the V1, while in (b), although DE and V1 are sisters, there is also a third sister -- an overt NP node which shares, in violation of the *de*-Constraint, such a syntactic relation. On the other hand, when the object NP is preposed to the front of V1, the requirement of the *de*-Constraint is met and, consequently, the sentence becomes grammatical.

Given that Chinese is essentially an SVO language (Sun and Givon, 1985), the phrase marker (18a) (or 18b) can be regarded as the underlying representation from which the following surface representation is derived through object raising:

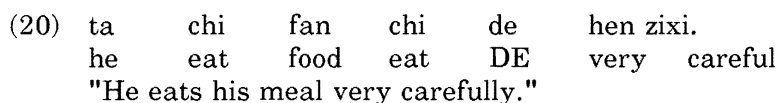


After the object *fan* "food" is moved to the other side of V1, DE and V1 become the only overt sister nodes in the local tree -- a result that no longer violates the *de*-Constraint. The sentence is consequently accepted as being grammatical.

#### 4.2.4. V1 Reduplication

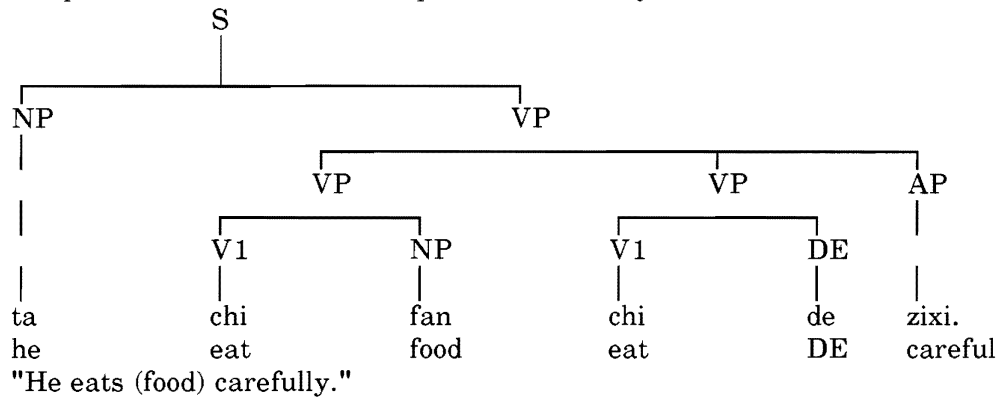
Further support for the *de*-Constraint comes from evidence that is related to the object raising cases. This is the case of V1 reduplication.

There is a type of CEAC sentences which contain two V1s. Presumably, the second in the sequence is a reduplication of the first. The following is an example of such a sentence.



It should be noted that the sentence in (20) is "related" to that in (19). The relatedness of the two sentences comes from the fact that the two are in fact alternative ways of saying the same thing. It is interesting to see that the present theory actually provides a principled account for the identity in the meaning of the two sentences. In particular, the equivalence in meaning of the two sentences is due to the fact that both sentences are surface syntactic representations derived from the same deep syntactic structure (namely, either (18a) or (18b), depending on one's theory). The difference in the two surface structures are the result of two alternative transformation rules applied on the same single deep structure.

As noted before, the transformation from the deep structure (e.g. 18b) to one of the surface structures is in fact triggered by the *de*-Constraint. Just as the object is raised so that V1 can be construed to form an immediate constituent with DE, V1 is reduplicated so that a local tree with this reduplicated V1 and DE as the only daughter nodes is created, as in (21). Either operation, object raising or V1 reduplication, is carried out on the same UR (either (18a or b)) in order to meet the requirements of the *de*-Constraint. If (18b) is taken as the underlying representation, the surface representation after the reduplication rule may be in (21). (21) SR



As is shown in (21), V1 reduplication is obligatorily performed in observation of the *de*-Constraint, and after V1 reduplication, the only sister node to DE becomes V1, and such a surface representation obeys the *de*-Constraint.

It has been shown that the present theory does provide a unified analysis for both the object raising and the verb reduplication processes; both of which are but one process of transforming an underlying structure to one that would satisfy the requirements of a surface structure constraint.

#### 4.2.5. "Complex Verb Compound"

The so-called "complex verb compounds" which we briefly mentioned earlier consist of two verbs each. Chao (1968) treats them as a type of verbal compound partly because the two component verbs always share the same arguments. There has, however, never been rigorous support provided to show that this is indeed the case. In fact, some researchers have challenged such a position with some very convincing evidence.

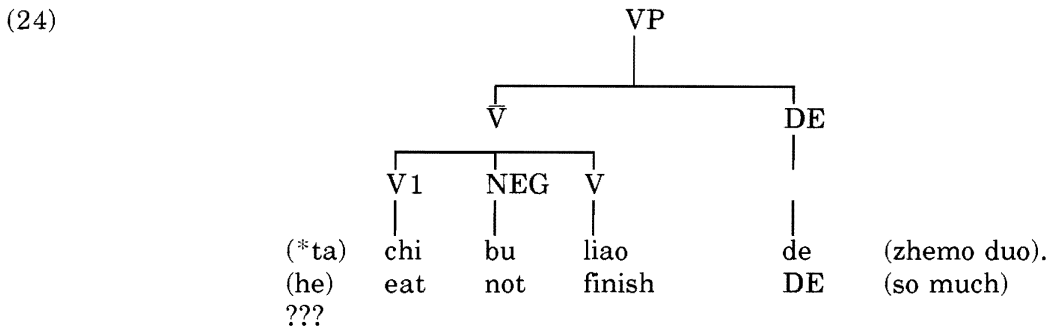
Hansell (1987), for instance, argues that such a construction is in fact a serial verb construction. He supports his argument by pointing out that while normal two-verb compounds denote only a single action (22a), the two component verbs of the so-called "complex verb compounds" denote separate actions, and usually the action denoted by the first verb must precede that denoted by the second (22b).

- |      |    |                                |   |   |
|------|----|--------------------------------|---|---|
| (22) | a. | jiao-xun<br>han-jiao<br>da-sao | "teach" + "train"<br>"yell" + "call"<br>"beat" + "sweep"      | "to chide"<br>"to yell"<br>"to clean"                                 |
|      | b. | chi-liao<br>kan-dong<br>da-po  | "eat" + "finish"<br>"read" + "understand"<br>"beat" + "break" | "finish eating"<br>"understand through reading"<br>"break by beating" |

In addition, Hansell observes that a normal two-verb compound cannot have another morpheme such as *de* "DE" or *bu* "not" occur in between its two verbal morphemes, as in (23a), while a "complex verb compound" can, as in (23b).

- |      |    |              |                     |              |                        |
|------|----|--------------|---------------------|--------------|------------------------|
| (23) | a. | *jiao-de-sun |                     | *jiao-bu-xun |                        |
|      |    | *han-de-jiao |                     | *han-bu-jiao |                        |
|      |    | *da-de-sao   |                     | *da-bu-sao   |                        |
|      | b. | chi de liao  | "can finish eating" | chi bu liao  | "cannot finish eating" |
|      |    | kan de dong  | "can be understood" | kan bu dong  | "cannot be understood" |
|      |    | da de po     | "can break"         | da bu po     | "cannot break"         |

If what Hansell argues for is true, and if we believe that it is a series of individual verbs rather than a compound that is concerned here,<sup>8</sup> the phrase structure for the ungrammatical sentence in (6d) can be represented as in (24) (irrelevant details of the phrase marker are ignored here).



In (24), the DE node is a sister to a VP rather than a bar-zero V in violation of the *de*-Constraint. The sentence is consequently starred as ungrammatical.

#### 4. SUMMARY

This paper has proposed a unified theory regarding the behavior of *de* in the Chinese Extent Adverbial Construction. It has been demonstrated that these "peculiar" distributional facts about V1 in CEAC sentences are best accounted for by assuming a constraint, called here the *de*-Constraint, which applies at the surface syntactic representation.

This *de*-Constraint has been very successful in providing a unified explanation for the non-occurrence in V1 position of such forms as the V-not-V question or the "complex verb compounds", for V1's inability to be immediately followed by an aspect marker such as *le* or by its own object, and for V1's inability to be immediately preceded by *bu* "not".

#### NOTES

- 1 The name, Chinese Extent Adverbial Construction, was proposed by Li and Thompson (1981).
- 2 Each of the example sentences in this paper contains three lines. The first is the Chinese sen-



Zhang, 1987) have questioned the current phonological approach to reduplication by Marantz (1982) and Prince and McCarthy (1986).

8 As the reader may already know, Chinese is rich in serial verb constructions.

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