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### Abstract

This paper tries to explain the well-observed constraint that no conjunct may move. It is claimed that with respect to final conjuncts, this constraint simply manifests the clitic property of coordinators. As clitics, coordinators need their complement as their phonological host. Final conjuncts thus may not move. Based on the assumption that the categorial features of initial conjuncts are transferred to the coordinator *and*, it is claimed that this transference keeps initial conjuncts in situ, since elements without category-features may not move overtly. This new account for the immobility of initial conjuncts is supported by two facts. First, in the Chinese *de* constructions, kernel elements provide categorial features for *de*, which has no intrinsic categorial features and is the head of the whole complexes, and they may not move. Second, in the comitative coordinate constructions in Chinese, initial conjuncts do not provide categorial features for the coordinators, which have their intrinsic categorial features, and they may move. The paper specifies the semantic condition of initial conjunct movement: the coordination must be non-distributive. The new account of the immobility of conjuncts suggests that the constraint is not a construction-specific syntactic constraint. Instead, it is related to the lexical/morphological makeup of coordinators. Conjuncts as regular Spec and Complement elements may undergo syntactic movement. It has been generally assumed that movement is driven by morphological considerations. This study further shows that the blocking of movement can also be related to morphological properties of specific syntactic elements, in addition to the generally recognized locality restrictions.

# Explaining the Immobility of Conjuncts

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## 1. Introduction

### 1.1 The CCI and CCE

Coordinate Structure Constraint (CSC, Ross 1967:89) states: "In a coordination structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct." As emphasized by Postal (1998:95), the CSC was intended as a linguistic universal. However, it is implausible that the theory of syntax has, in addition to the operations such as Merge and Remerge, which apply to the computation system in its constructive sense, construction-specific stipulations such as the CSC, which give the instructions where the normal operations cannot apply. Nevertheless, in the current literature, it seems that the CSC has remained relatively immune to reduction to other more general principles. When Riemsdijk and Williams (1986:28) introduce various constraints, they state "All the principles discussed here have since been modified, generalized, or replaced. The fate of the CSC has been somewhat different, however, because it has not interacted with the other constraints under these revisions." The goal of this paper is to reduce the CSC to other general principles.

The CSC has been split into two parts (Grosu 1972, 1973). The first part is that no conjunct may be moved, and the second part is that no element may be extracted from conjuncts. Following Grosu (1972), we call the first part of the CSC Conjunct Constraint (CC), and the second part Element Constraint (EC). This paper discusses the CC only. CC effects are shown in (1) and (2).

- (1) a. \*John<sub>i</sub> seems to be [<sub>t<sub>i</sub></sub> and Mary] in the room.  
b. \*[All the heaviness]<sub>i</sub> had [<sub>t<sub>i</sub></sub> and the height] gone.  
c. \*Who<sub>i</sub> did John kiss [<sub>t<sub>i</sub></sub> and a girl]?  
d. \*What table<sub>i</sub> will he put the chair between [<sub>t<sub>i</sub></sub> and some sofa]?  
e. \*The speaker who<sub>i</sub> I watched [<sub>t<sub>i</sub></sub> and Bill] was vain.  
f. \*[Go to the club]<sub>i</sub> John might [<sub>t<sub>i</sub></sub> and [have some fun]].  
g. \*Can<sub>i</sub> you [<sub>t<sub>i</sub></sub> and will] stay at home?
- (2) a. \*Mary<sub>i</sub> seems to be [John and <sub>t<sub>i</sub></sub>] in the room.  
b. \*[The height]<sub>i</sub> had [[all the heaviness] and <sub>t<sub>i</sub></sub>] gone.  
c. \*Who<sub>i</sub> did John kiss [a girl and <sub>t<sub>i</sub></sub>]?  
d. \*What sofa<sub>i</sub> will he put the chair between [some table and <sub>t<sub>i</sub></sub>]?  
e. \*The speaker who<sub>i</sub> I watched [Bill and <sub>t<sub>i</sub></sub>] was vain.  
f. \*[Have some fun]<sub>i</sub> John might [[go to the club] and <sub>t<sub>i</sub></sub>].  
g. \*Will<sub>i</sub> you [can and <sub>t<sub>i</sub></sub>] stay at home?

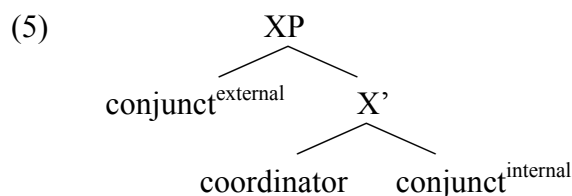
In each of the data in (1), the first conjunct moves, and in each of the data in (2), the second conjunct moves. The CC is violated in both groups of data. The movement is an A-movement in (1/2a) and (1/2b), interrogative wh-movement in (1/2c) and (1/2d), relativization wh-movement in (1/2e), topicalization movement in (1/2f), and head movement in (1/2g).

CC effects are also observed in other languages. In the following Norwegian examples, a conjunct of the coordinate object complex is raised in (3a), and a conjunct of the post-verbal coordinate subject complex is raised in (3b). Neither is acceptable (Johannessen 1998:222). The failure of the subject raising out of the Spanish coordinate complex in (4a) shows the same restriction (Zoerner 1995:78 (25)).

- (3) a. \*Ola<sub>i</sub> sa jeg [Per og t<sub>i</sub>]. (Norwegian)  
 Ola saw I Per and  
 ‘Ola, I saw, Peter and.’  
 b. \*Per<sub>i</sub> vasket klær [Ola og t<sub>i</sub>].  
 Per washed clothes Ola and  
 ‘Peter washed clothes, Ola and.’
- (4) a. \*Él<sub>i</sub> con cuidado [t<sub>i</sub> y ella] manejaron el coche. (Spanish)  
 he with care and she drove the car  
 b. [Él y ella] con cuidado manejaron el coche.  
 he and she with care drove the car  
 ‘He and she carefully drove the car.’

Postal (1998:83) states: “The Conjunct Constraint is almost never questioned.” The current development of the minimalist program has kept silent on the CC.

The theoretical background of this paper is the following. I assume the following complementation structure for coordinate constructions. In this structure, the coordinator is the head, the initial conjunct, called external conjunct, is the Spec element and the final conjunct, called internal conjunct, is the complement (Munn 1987, Zoerner 1995, Johannessen 1998, Zhang 2006, among others).



It is well-recognized that the categorial features of a coordinate complex are identical to those of at least one of the conjuncts. Since Sag et al. (1985:165), data like the following have been observed:

- (6) a. You can depend on my assistance and that he will be on time.  
 b. \*You can depend on that he will be on time.  
 b. \*You can depend on that he will be on time and my assistance.
- (7) a. Pat was annoyed by the children's noise and that their parents did nothing to stop it.  
 b. \*Pat was annoyed by that their parents did nothing to stop it.  
 c. \*Pat was annoyed by that the parents did nothing to stop the children's noise and the bad radio sound.

(6b) shows that the preposition *on* may not take tensed clauses as complements. However, if the complement of a preposition is a coordinate complex, the internal conjunct can be a tensed clause. In (6a) the internal conjunct is a tensed clause and the external one is a DP. (6c) shows that if we switch the order of the two conjuncts in (6a), the result is not acceptable. The contrast indicates that it is the external conjunct that satisfies the c-selection of the preposition. Zhang (2007cat) presents more arguments to show that if the coordinator is *and*, the categorial features of the coordinate complex are always identical to those of the external conjunct.

Since *and* is the head of the whole coordinate complex, and it has no intrinsic categorial features, Zhang (2007cat:sec. 3.3.1) claims that the categorial features of the external conjunct are transferred to *and*. But if the coordinator is specified with certain

categorial features, such as *gen*, a nominal coordinator in Chinese, or *ergie*, a verbal coordinator in Chinese, the categorial features of the external conjunct are not transferred to the coordinator.

The feature dependency of XP on the Spec of X has also been independently seen in *wh* and negation feature percolation. For instance, the negation feature is percolated from Spec in (8a), and the *wh*-feature is percolated from Spec in (8b) (Grimshaw 1991, Webelhuth 1992, Koopman & Szabolcsi 2000:41):

- (8)    a.        Nobody's car would I borrow.        [Neg feature percolation]  
           b.        Whose book did you read?        [Wh feature percolation]

If the negation in (8a) is a sentential negation, which is able to trigger the subject-modal inversion, the [Neg] feature must move out of the word *nobody*, which is the Spec element of the possessive DP. Likewise, in (8b), in order to check the [Wh] feature of C, the relevant feature must move out of the word *whose*, which is the Spec element of the possessive DP.

I will argue that the CC should be split into the CCe, i.e., no external conjunct may move, and the CCI, i.e., no internal conjunct may move. The CCI means that no coordinators may be stranded. Coordinators are clitics, taking their complement as their phonological hosts. As for the CCe, external conjuncts cannot move simply because their categorial features have been transferred to the coordinators such as *and*, which do not have any categorial features (Zhang 2004T, 2007cat). Shortly speaking, it is the lexical/morphological properties of the specific type of coordinators that are responsible for the effects of the CC.

The layout of this paper is as follows. I will show the problems of current approaches of the CC in 1.2. Then I present my own analysis of the CCI and CCe in Section 1.3. In Section 2, I present three arguments for my new account of the CCI. My two arguments for the new account of the CCe are given in Section 3 and Section 4. Section 5 is a brief summary.

## 1.2 A brief introduction to various unified approaches to the CC

The CC has been analyzed as a unified constraint in syntactic approaches (Sag 1982, Pesetsky 1982, Pollard & Sag 1994, and Zoerner 1995), a semantic approach (Johanessen 1998), a phonological approach (Merchant 2001), and a Parallelism Requirement approach (Napoli 1993).

### 1.2.1 The unified syntactic approaches to the CC

#### I. The A-over-A Principle account

Sag (1982:334) and Pesetsky (1982:435) (see also Riemsdijk & Williams 1986:20) claim that CC effects are accounted for by the so-called A-over-A Principle. This approach claims that in (9), neither of the two lower NPs may be moved, since they are hosted by the upper NP.

- (9)
- $$\begin{array}{c}
 \text{NP} \\
 \swarrow \quad \searrow \\
 \text{NP} \quad \text{and} \quad \text{NP}
 \end{array}$$

Let us examine the A-over-A Principle itself. There are two versions of the principle. One version says that if a rule ambiguously refers to A in a structure of the form of (10), the rule must apply to the higher, more inclusive, node A. This principle is claimed to prevent extraction of the NP *Africa* out of the NP *my trip to Africa* in which it is included in (11a) (Ross 1967, Chomsky 1964).

- (10) ... [A ... [A ...  
 (11) a. I won't forget [<sub>NP</sub> my trip to [<sub>NP</sub> Africa]]  
 b. \*Africa, I won't forget my trip to.  
 c. My trip to Africa, I won't forget.

Chomsky points out several potential counterexamples to the A-over-A Principle:

- (12) a. Who would you approve of my seeing?  
 b. What are you uncertain about giving to John?  
 c. What would you be surprised by his reading?

In (12a), for instance, the nominal *who* moves out of the containing nominal *my seeing who*. Data like the following (13) also show that the principle is too strong. The extraction of the DP *that book* is possible, although it is contained in the DP *five reviews of that book*.

- (13) That book, they published [<sub>DP</sub> five reviews of t]. (Gazdar et al. 1985:148)

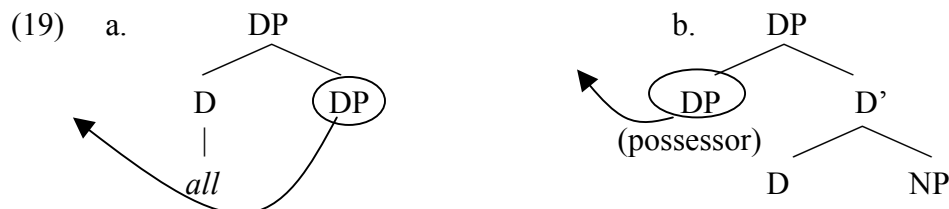
Since this version of the A-over-A principle is empirically not adequate, we do not think its application to the CC can be justified. Some effects of the principle can be covered by other constraints. The acceptability contrast between (11b) and (12)/(13), for instance, can be accounted for by Davis & Dubinsky's (2003) study of constraints on extraction from nominals.

Another version of the principle says that if a rule ambiguously refers to A in a structure of the form of (10), the rule must apply to the immediate higher, more inclusive, node A. The following examples may show the principle (Sag 1982:334):

- (14) a. Fido jumped [<sub>PP</sub> from [<sub>PP</sub> under [<sub>DP</sub> the table]]].  
 b. Fido ran [<sub>PP</sub> out [<sub>PP</sub> into [<sub>DP</sub> the meadow]]].  
 (15) a. From under the table jumped Fido \_.  
 b. Out into the meadow ran Fido \_.  
 (16) a. From under which table did Fido jump \_?  
 b. Out into which meadow did Fido run \_?  
 (17) a. Which table did Fido jump from under \_?  
 b. Which meadow did Fido run out into \_?  
 (18) a. \*Under which table did Fido jump from \_?  
 b. \*Into which meadow did Fido run out \_?

The two sentences in (14) are canonical forms. In (15a), the matrix PP is topicalized, and in (15b), the matrix PP is also topicalized. In (16a), the matrix PP has undergone a wh-movement, and in (16b) the matrix PP has also undergone a wh-movement. Since the topicalization and the wh-movement apply to the matrix PP, rather than the embedded PP, in (15) and (16), the A-over-A principle is not violated. In (17a), the moved wh-phrase is a DP, rather than PP. Similarly, in (17b), the moved wh-phrase is a DP. The A-over-A principle does not apply to (17), since the trace of the wh-DP is not immediately dominated by another DP. Instead, it is immediately dominated by the PP headed by *under* or *into*. In (18a), however, the trace of the PP *under which table* is immediately dominated by another PP, which is headed by *from*. In this case, the A-over-A principle is violated. Similarly, in (18b), the trace of *into which meadow* is immediately dominated by another PP, which is headed by *out*. As expected, the A-over-A principle is violated. Sag claims that the unacceptability of the two sentences in (18) is captured by the A-over-A principle.

Like the former version, the latter version is also empirically inadequate. Firstly, the A-over-A Principle cannot explain quantifier floating (Sportiche 1988). It is generally assumed, as shown in (19a), that the quantifier *all* is a D-element, takes a DP complement, and projects another DP. In quantifier floating constructions, the DP complement of *all* is raised out of the hosting DP (see Adger 2003:263 for a summary).



Secondly, the possibility of possessor DP raising out of possessive DP, as illustrated in (19b) (Szabolcsi 1983, 1994, Landau 1999, among others), indicates that the principle is too strong to rule in such movement of Spec elements.

Since A-over-A Principle is not a valid principle with respect to movement of either complements or Spec elements, it cannot be used to account for CC effects.

## II. The trace subcategorization account

Pollard & Sag (1994:201) claim that under virtually any assumptions about the nature of coordinate structures, it is the mother of the coordinate structure that is (strictly) subcategorized, not the individual conjuncts. Since a conjunct is never subcategorized for, it can never be realized as a trace — because of the Trace Principle, in their theory. The assumed Trace Principle states that “Every trace must be subcategorized by a substantive head” (p. 172). Note that they indeed discuss how the Trace Principle is also considered in the movement of adverbials (p.176), which are generally considered not subcategorized. However, first of all, the movement illustrated in (19b) is wrongly ruled out in this account, since it is the top DP rather than the possessor DP that is subcategorized by a head; and secondly, the account is not able to explain the contrast between *Can and will you stay at home* and *\*Can<sub>i</sub> you [t<sub>i</sub> and will] stay at home*. The contrast has nothing to do with subcategorization.

Sag (2000:8) claims that the CC can be accounted for by the assumption that wh-traces are not syntactic constituents and conjuncts must be syntactic constituents. His claim might cover the c-, d-, and e-sentences in (1) and (2), but it cannot cover other data there, where no wh-conjunct shows up. Thus the CC seems to have nothing to do with the status of wh-traces.

## III. The Minimal Link Condition account

Zoerner (1995:75ff) proposes that CC effects can be covered by the Minimal Link Condition, since, he assumes, an attracting feature external to a coordinate complex never looks as low in the structure as the conjunct; instead, it sees the feature on the &P node and stops its search there. This proposal is too strong. If coordinate complexes have a complementation structure, as he argues for, conjuncts are Spec and Complement elements. Raising of Spec elements and Complement elements is possible in general.<sup>1</sup>

### 1.2.2 A semantic approach

Johannessen (1998:235) proposes that the possibility of the EC violation (see Grosu 1973) and the impossibility of the CC violation can be accounted for semantically:

<sup>1</sup> Goodall (1987) proposes an account for the CC in terms of Principle C of the binding theory. Obviously, his effort does not consider non-nominal conjuncts, and thus it still needs another account for such conjuncts. See Sag (2000:6) for arguments against Goodall’s proposal.

“When something is extracted a special relationship is triggered between two elements. However, when a whole conjunct is extracted, there are no longer two available elements between which such a relationship could exist, and extraction must be ruled out. Thus the semantic factors not only constrain extraction of parts of conjuncts, but constrain extraction of whole conjuncts – to such an extent that the latter is not possible.”

Any movement will cause an element to be away from its merger-position, where it is integrated into the structure semantically, and thus seems to have the same problem, according to this semantic approach. Consider possessor raising. If the possessor is moved away from the possessed nominal, does that mean the semantic relation between the two is lost? Also, in data like *What kind of beer does John normally drink*, the verb *drink* s-selects the liquid-denoting *what kind of beer*. When the latter moves, does that mean the semantic selection is lost? Since this semantic approach is not plausible, it cannot be used to account for CC effects

### 1.2.3 A phonological approach

Grosu (1981:56) proposes a Null Conjunct Constraint (NCC), which states that conjuncts may not be phonologically null. Merchant (2001) claims that the CC can be covered by the NCC. In Merchant's approach, the CC is related to PF. Considering the cases of null external conjuncts (conjunct-drop), to be presented in Section 2.1, we do not think that the NCC is applicable to external conjuncts. Null internal conjuncts, however, are indeed not seen. The NCC can explain CCI effects. We will discuss this issue in Section 2.

### 1.2.4 A Parallelism Requirement approach

Napoli (1993:409) speculates that the CC might be the result of a Parallelism Requirement. However, in the presence of *and*, the CC cannot be the result of Parallelism Requirement, since even both conjuncts are moved, satisfying the Parallelism Requirement, the coordinate complex is still unacceptable. Here are some unacceptable examples of the Across-The-Board type of dependency (Grosu 1981):

- (20) a. \*Which books did Bob read [\_\_ and \_\_]?  
 b. \*I wonder who you saw [\_\_ and \_\_]? (Gazdar et al 1985:178)  
 c. \*Eagerer though John seemed to be growing \_\_ and \_\_, Mary was still reluctant to introduce herself to him. (cf. Eagerer and eagerer though John seemed to be growing...)  
 d. \*The Pre-Raphaelites, we found [\_\_ and \_\_]. (Sag 1982:332)

Russian allows multiple wh-movement, However, wh-movement of both conjuncts is impossible, either:

- (21) \*[kokogo mal'čika]<sub>i</sub> [kakuju devočku]<sub>j</sub> ty l'ubiš' [t<sub>i</sub> i t<sub>j</sub>]?  
 which boy which girl you love and

In the above discussion, I have shown that none of the unified syntactic, semantic, phonological, and the parallelism approaches reveals the full nature of the CC. The effects of the CC are observed whenever a coordinator such as *and* in English or *i* in Russian is present. Since no satisfactory account for the CC is available, I pursue my own account of the CC.

### 1.3 My new account of the CC

#### 1.3.1 The CCI: internal conjuncts are phonological hosts of coordinators

The CCI effects in the presence of *and* is well-observed, as seen in (2). I make the following claim: internal conjuncts cannot move in the presence of an *and*-like coordinator because such coordinators are clitics attached to their complement phonologically. For *and*-like coordinators, they are proclitics and need a phonological host to their right. Thus, internal conjuncts may not be silent, regardless of whether the silence is caused by movement or deletion.

This property of coordinators is also seen in other head elements. Certain head elements do not allow their complements to be silent. For instance, the complementizer *that* cannot be stranded (the examples are cited from Adger 2003:290):

- (22) a. Everyone claimed [that the poison was neutralized].  
b. ?[That the poison was neutralized] was claimed by everyone.  
c. \*[The poison was neutralized] was claimed that by everyone.  
d. It was claimed by everyone [that the poison was neutralized].  
e. \*It was claimed that by everyone [the poison was neutralized].

The complementizer *for* cannot be stranded, either (Law 2002:84):

- (23) \*[John to leave]<sub>i</sub> is impossible [<sub>CP</sub> [for t<sub>i</sub> ]]

Articles, Degree head elements such as the word *very* in English, and prepositions in many languages including Chinese do not license the movement of their complements, either. It is possible that coordinators have the same property. They neither license movement of their complements, nor allow their complements to be deleted at PF.

I will present three arguments for this proposed account of the CCI in Section 2.

#### 1.3.2 The CCE: categorial features are carriers of overt movement

I make the following claim on the CCE. External conjuncts cannot move in the presence of *and*, because the categorial features of the former have been transferred to the latter (see Zhang 2004T, 2007cat).

The theoretical background of this claim is the following. Any element that undergoes overt movement must have categorial features. In Chomsky (1995:265, see also Ochi 1999:90), all overt movement chains are composed of two sub-chains: a chain of formal features that take part in the required checking (CH <FF>) and a chain of categorial features (CH <CAT>). The latter chain does not involve feature checking, but it is simply the carrier of the former chain. In Chomsky's terms, overt formal feature movement is always pied-piped with a categorial chain. This implies that in the absence of categorial features, no overt movement is possible. If the categorial features of the external conjunct have been transferred away, the conjunct cannot move anymore, since the carrier is gone.

It needs to be emphasized that no copying operation occurs in categorial feature movement. As asserted in Chomsky (2005:6), movement does not create any new copy of the moved element. Instead, it is simply an operation of remerge. For arguments against copy theory of movement, see Zhang (2004).

I will present two arguments for this claim in Section 3 and 4, respectively.



## 2. Three arguments for the new account of the CCI

I claim that internal conjuncts are phonological hosts of coordinators, therefore, internal conjuncts may not move, stranding the coordinator. Three arguments are presented in this section.

### 2.1 Argument A: No internal conjunct drop

Our first argument for the phonological approach to the CCI is the conjunct drop asymmetry. In neither English nor Chinese, internal conjuncts can be null, whereas external conjuncts can, in the languages.

It is possible for one conjunct to be silent, when its meaning is recoverable from the linguistic or discourse context. I call this silence of conjuncts a "conjunct-drop" effect.

The conjunct that is allowed to be contextual or implicit is consistent. In languages such as English and Chinese, it is always the first conjunct. In (24), for instance, the speaker directly starts the sentence with the coordinator *and*. (Hankamer & Sag 1976:410).

- (24) [Observing Ivan playing pretty good ragtime piano]  
And he doesn't have a left hand!

A coordinator used in such a way is called discourse-initial or utterance-initial coordinator (Hankamer & Sag 1976:410. See George Huttar's (April 22, 2003) summary of the relevant literature in *Linguist List*). Hankamer & Sag (1976:411) state: "It seems that such cases involve essentially pragmatic omission of an understood left conjunct." Similarly, in (25), the last sentence starts with *and*, and the meaning of the first conjunct is implied in the previous sentence (One can find Chinese data parallel to (24) and (25) in Shi 1986:sec 2.3. Shao & Rao 1985:6 also discuss contextual or discourse conjuncts in Chinese).

- (25) "It's time to put sentiment aside," announced *New York Times* columnist Nicholas Kristof one day last month. And who can disagree?  
Michael Kinsley, *The Washington Post*, Sept. 14, 2002

We however hardly see the silence of second conjuncts. Although we use the elided expression "And you?" we do not say "You and?" In this unacceptable cluster, the coordinator is stranded. The contrast can also be seen in (26). (26a) is much more natural than (26b). The latter is uttered hesitantly like an incomplete fragment of speech. Coordinator-final clusters, such as (26b), usually occur as a result of a bad processing or a special performance strategy to achieve a certain stylistic effect. They are not acceptable forms in normal contexts.

- (26) a. But I don't want to go! (Dik 1968:50).  
b. I would like to, but...

Furthermore, the following (27b), (28b), and (29b) show that the coordinator-final clusters, when used alone are totally unacceptable. The underlined part in each of the examples is not a constituent. Note that the negation encoded by *not* scopes over the whole coordinate complex in each case, parallel to the corresponding a-sentences. The a-sentences are cited from Postal (1998:87) and Lawler (1974) (See Goldsmith 1985:141 for a semantic description of the construction).

- (27) a. Can linguists [study negation]? Not e and stay sane they can't.  
b. \*Can linguists [stay sane]? Not study negation and e they can't.

- (28) a. Can Carol [take seven courses for credit]? Not e and (still) stay sane and (still) make the varsity hockey team she can't.  
 b. \*Can Carol [stay sane and make the varsity hockey team]? Not take seven courses for credit and e she can't.
- (29) a. Can I [go outside without any clothes on]? Not e and stay healthy, you can't.  
 b. \*Can I [stay healthy]? Not go outside without any clothes on and e, you can't.

The contrast between the a-sentences and the b-sentences in (26) through (29) indicates that the combination of the coordinator and the first conjunct cannot function independently of the second conjunct.

Similarly, as pointed out by Borsley (1994), a parenthesis can be a combination of a coordinator and a following conjunct, as in (30a), but not a combination of a coordinator and a preceding conjunct, as in (30b):

- (30) a. The professor, and he is an expert, thinks the recession will continue.  
 b. \*The professor, he thinks the recession will continue and, is an expert.

In Chinese, a transitive verb can end a clause, and the meaning of the implied object can be recovered in the context

- (31) Wo-shushu xihuan huabing, wo ye xihuan.  
 I-uncle like skating I also like  
 'My uncle likes skating, so do I.'

Regardless of how such sentences are derived (pro object, deletion of the object, or VP deletion after raising of the verb), the surface order of the above sentence is verb-final. Unlike verbs, coordinators cannot end a sentence or phrase in Chinese. This means that like proclitics, coordinators must be followed by some phonological material in the language.

In contrast to *and*-like coordinators, Japanese coordinators *-shi* and *-to*, and disjunction *-toka* behave like enclitics. Accordingly, a contextual or implicit conjunct is always the last conjunct for such coordinators, and the combination of one of the coordinators and its initial conjunct functions independently. Hinds (1986:93) describes this fact as follows. "For each of the types of coordination – *and*, *but*, and *or* – there is a sentence type in which the coordinator ends the utterance. While there may be a feeling of lack of closure, this feeling is not necessarily there at all times." He presents both types of examples. For the first type, he uses three dots at the end to show the lack of closure in data like (32):

- (32) a. Kyoo-wa atsui-shi, ... (Hinds 1986:86)  
 today-TOP hot-and  
 'It's hot today, and (moreover) ... '  
 b. Kyooto-e-wa ikanai-shi, ...  
 Kyoto-to-TOP go.not-and  
 '[I]'m not going to go to Kyoto, and (moreover) ... '

For the second type, Hinds describes that in the following (33a) (= his (318) in p. 93), however, "the first sentence ends in falling intonation. The second sentence is reproduced so the reader can see that it is not a continuation of the first sentence. Similarly, in (33b) (= his (319) in p. 93), "the coordinator *toka* appears with falling intonation in answer to a question." (QT = quotative morpheme).

- (33) a. Nihon kaet-te ojisan ii tsut-tara unten suru kamoshirenai shi. Nihon  
 Japan return-when uncle OK QT-say-if drive do probably and Japan  
 konde-ru kara wakannai.  
 crowded since know-NEG  
 ‘When [I] return to Japan if my uncle says it’s OK [I]’ll probably drive, and.  
 Japan’s crowded, so [I] don’t know.’  
 b. Tatoeba ojiichan-ga shi-shinda toki toka.  
 e.g. grandfather-NOM died time or  
 ‘The time Grandfather died, or.’

The following data (Zoerner 1995:33) further show that unlike English, Japanese does not allow the first conjunct to be contextual or implied in the discourse.

- (34) a. A: Robin ate fish. B: And rice!  
 b. A: Robin-wa sakana-o tabeta. B: \*to gohan!  
 Robin-TOP fish-ACC ate and rice

The *-to* and *-shi* coordinate complexes in Japanese are left-branching (Zoerner (1995:11)). Therefore their external conjunct is the last one. All of the data in this subsection show that external conjuncts can be silent whereas internal ones cannot.<sup>2</sup>

## 2.2 Argument B: No CCi effects in covert movement

Another argument for our phonological approach to the CCi comes from the fact that there is no CCi effect in covert movement:

- (35) a. Who reported that [Max and who] disappeared?  
 b. Robin thinks that [Kim and who] went to the store?  
 c. ?Who saw John and who?  
 (36) a. Ta mai-le shu he shenme?  
 he buy-PRF book and what  
 ‘What is the thing x such that he bought some books and x?’  
 b. Shei zhidaolao Wang he shui dang-xuan-le?  
 who know Lao Wang and who be-elected-PRF  
 ‘Who knows Lao Wang and who have been elected?’

In the English data (Fiengo et al. 1988:81, Zoerner 1995:43, Reinhart 1997:339, Bošković & Franks 2000:110) and Chinese data (Cheung 2006:9), the internal conjuncts are wh-phrases. If wh-elements must move (Pesetsky 2000, Soh 2005), the acceptability of these

<sup>2</sup> In German, the word *oder* ‘or’ can occur at the end of root sentences, building yes-no questions. The *oder*-final sentences are always uttered with a rising intonation. Speakers of such sentences expect a confirmation. Thus the function of this *oder* is similar to that of [*isn’t it?*] in English (André Meinunger and Hans-Martin Gärtner, p.c). In some dialect, the counterpart of *oder* in this usage does not share its form with any disjunction (André Meinunger, p.c). It seems to me that the syntactic status of this sentence-final *oder* is similar to that of the disjunctive *-oo* in Malayalam:

(i) John wannu-(w)oo? (Jayaseelan 2001:67)  
 John came-or  
 ‘Did John come?’

data indicates that the CCI does not work for covert movement. This in turn suggests that the CCI can be a PF constraint on representations rather than on syntactic operations.<sup>3</sup>

### 2.3 Argument C: No CCI effects in sluicing

Our third argument for the phonological account for the CCI is the type of sluicing that Merchant's (2001) considers.

According to Merchant's PF deletion analysis of sluicing, (37a) has the structure in (37b). In (37b), before the PF-deletion of the whole IP, the internal conjunct *who* undergoes wh-movement, violating the CCI.

- (37) a. Irv and someone were dancing in the hall, but I don't know who.  
 b. ... but I don't know who<sub>i</sub> [~~he and t<sub>i</sub> were dancing together~~]

In Merchant's approach, the violation of the CC is not offending, because the CC is taken to be a PF-island effect, which disappears if the relevant island is deleted at PF. He claims that the CC is "a condition whose effects are due to a principle operative at PF, not a principle that bans extraction of a conjunct as a condition on movement rules." (p. 194)

We have illustrated before that violation of the CCI in the presence of *and* is never acceptable. If data like (37a) are derived by PF-deletion, and the CCI itself is a PF-constraint on coordinators, the acceptability of such data is accounted for by the disappearance of the coordinators. This is basically Merchant's account, which we adopt. What we want to make precise is that this phonological account works for the CCI, but it does not work for the CCE.<sup>4</sup>

In this section we argued that CCI effects are covered by the general surface constraint that excludes stranded heads that are clitics. In our approach, CCI effects do not come from any construction-specific syntactic constraint. Instead, they are syntax-phonological interface effects. The fact that coordinators, as well as certain other types of head elements, require an overt complement shows the phonological side of CCI effects. This requirement rules out any representations in which the complement of the elements is a trace or is affected by deletion. On the other hand, the sensitivity of the requirement to the part of speech of the head elements shows the morphological side of CCI effects. For instance, the complementizer *that* does not allow any null complement, whereas prepositions such as *with* and *of* (as in (13)) do. Consequently, we do not consider the CCI as a syntactic constraint specific to coordinate constructions.

<sup>3</sup> I put aside the issue of Quantifier Raising of whole conjuncts. It has been pointed out to me that such a covert operation is impossible. For instance, *everyone* may not scope over *someone* in (i) (Thomas Lee, p.c.).

(i) Someone saw [John and everyone].

<sup>4</sup> Merchant (2001, 2007:6,10) uses the following data to show that unlike in sluicing, CCI effects emerge in VP ellipsis:

- (i) a. \*They persuaded Kennedy and some other Senator to jointly sponsor the legislation, but I can't remember which one they did.  
 b. \*They got the president and 37 Democratic Senators to agree to revise the budget, but I can't remember how many Republican ones they DIDN'T.

In our approach, we link CCI effects with the phonological realization of coordinators. The unacceptability of the above data, in which coordinators are deleted, cannot be covered by our analysis of the CCI. Logically speaking, such data do not pose counter-examples to our claim. There could be independent reasons for their unacceptability. I hope future studies can explain such data.

### 3. Argument A for the new account of the CCE: similar effects in the *de* constructions

We have seen that external conjuncts can be null (2.1). Thus the CCE cannot be a phonological constraint. I have proposed that external conjuncts cannot move in the presence of *and*, because the categorial features of the former have been transferred to the latter.<sup>5</sup>

My arguments for this new account of the CCE come from two sources. (A) If categorial transference also occurs in other constructions, the categorial feature-providing elements may not move. In other words, CCE-like effects should be attested independently of coordinate constructions. (B) If coordinators have categorial features, the CCE may be violated, since external conjuncts keep their categorial features and thus are able to move. In other words, CCE effects should be absent in certain type of coordinate constructions. I will present argument A in this section, and argument B in Section 4.

In Mandarin Chinese, *de* is a particle occurring either between a modifier and the modified element, as in (38a), or between a relational element and its semantic licenser, as in (38b).

- |      |    |   |    |   |
|------|----|---|----|---|
| (38) | a. | honghong de pingguo<br>red DE apple<br>'red apple(s)' | b. | Baoyu de linju<br>Baoyu DE neighbor<br>'Baoyu's neighbor' |
|------|----|---|----|---|

In Li & Thompson (1981), *de* is called associative marker, since it occurs between two elements that have certain semantic relationship.<sup>6</sup> *De* is phonologically weak (it has an intrinsic neutral tone, which means that the syllable is short and cannot bear any stress), and cliticizes on the element to its left (C.R. Huang 1989). The modified element and the relational element of the *de* constructions are both called Head elements in grammar books. In order to avoid confusion, I will call such a Head element kernel element, and the other element that is associated with the kernel one non-kernel element.

In this section, I first distinguish two types of associative markers in Mandarin Chinese, the one that occurs in kernel-final constructions and the one that occurs in kernel-initial constructions (3.1), then present data to show that the *de* of the former type occurs with kernel elements of various categories (3.2), argue that *de* heads the whole complexes that contain both the modifiers and the modified elements (3.3), and finally report that in such constructions, the modified elements may not move (3.4). If *de* is indeed the head of the whole complex, as I conclude, and get its categorial features from the kernel elements, this

<sup>5</sup> One might wonder whether the other two issues discussed in Section 2, i.e., the covert movement and sluicing issues, can be considered in the investigation of the CCE. Indeed, external conjuncts behave differently from internal ones. If we switch the order of the two nominal conjuncts of the English data in 2.3 and 2.4, the resultant sentences all become unacceptable. For instance, if we switch the order of the two nominal conjuncts of (37a), as in (i), the resultant sentence is marginal (I am grateful to Steven Franks for discussing the data with me):

(i) ?\*Someone and Irv were dancing in the hall, but I don't know who.

However, a WH element may be conjoined with a non-WH element in Chinese (Tai 1969:121):

(ii) Ni xihuan shenme gen li?  
you like what and pear

The source of the unnaturalness of (i), as pointed out to me by James Myers (p.c.), could be that if an indefinite conjunct is followed by a definite conjunct, the coordinate complex is always unnatural, thus the complex [*someone and Ive*] itself is already not as natural as the complex [*Ive and someone*]. Consequently, the unnaturalness of (i) may be related to its information structure rather than any CCE effect before the PF deletion in sluicing. I assume that this may also account for the unnaturalness of any coordinate nominals in which the first conjunct is a WH element whereas the second one is not, in English.

<sup>6</sup> I do not discuss other uses of *de*, such as the one in resultative constructions, the one in *shi...de* 'be ...DE' constructions, and the one in nominalization. I assume that the paritical *de* in such constructions is different from the associative marker discussed here.

immobility of the kernel elements supports my claim that if the categorial features of an element are transferred to another element, it cannot move (1.3.2).

### 3.1 Two kinds of *de* constructions

*De* may follow a modifier, as in the following (39a) and (40a), forming a kernel-final construction. It may also precede a modifier, as in (39b) and (40b), forming a kernel-initial construction. The kernel elements are underlined and the non-kernel ones are in brackets in all of the data in this subsection.

- (39) a. Baoyu zai [hen kuai] de langdu. - kernel-final  
 Baoyu PRG very fast DE read.aloud  
 ‘Baoyu is reading (something) aloud fast.’  
 b. Baoyu langdu de [hen kuai]. - kernel-initial  
 Baoyu read.aloud DE very fast  
 ‘Baoyu read (something) aloud fast.’  
 (40) a. Baoyu [hen shangxin] de ku-le. - kernel-final  
 Baoyu very sad DE cry-PRF  
 ‘Baoyu cried sadly.’  
 b. Baoyu ku de [hen shangxin]. - kernel-initial  
 Baoyu cry DE very sad  
 ‘Baoyu cried sadly.’

These two constructions are different in at least two aspects. First, the phonological host of *de* may be a phrase in kernel-final constructions, such as *hen kuai* ‘very fast’ in (39a), however, it must be a head element in kernel-initial constructions, such as *langdu* ‘read aloud’ in (39b) (Tang 1990:431). Data like the following show that *de* may not follow a phrase in kernel-initial constructions:

- (41) \*Baoyu langdu na pian wenzhang de [hen kuai]. - kernel-initial  
 Baoyu read.aloud that CL paper DE very fast  
 Intended: ‘Baoyu read that paper aloud fast.’

Since the categorial-levels of the phonological hosts of the *des* in the two constructions are different, following Tang (1990:431), we claim that they are different kinds of enclitics.

Second, the modified element must be verbal in kernel-initial constructions, whereas it can be other categories in kernel-final constructions. We have seen the verbal kernel elements *langdu* ‘read aloud’ and *ku* ‘cry’ in both types of constructions in (39) in (40). The following examples show that the kernel element can be a noun in kernel-final constructions (also (38)), but not in kernel-initial constructions.<sup>7</sup>

- (42) a. [hen shangxin] de xuesheng - kernel-final  
 very sad DE student  
 ‘very sad students’  
 b. \*xuesheng de [hen shangxin] - kernel-initial  
 student DE very sad

<sup>7</sup> In writing, many people use different characters to distinguish the associative marker that precedes a nominal kernel elements (的), as in (38), (42a), the one that precedes a verbal kernel elements (地), as in (39a) and (40a), and the one that occurs in kernel-initial constructions (得), as in (39b) and (40b). But well-accepted grammar books (e.g. Chao 1968, Zhu 1984) do not make this distinction.

We can see that *de* is similar to coordinators in that they both occur with two syntactic constituents. Specifically, the *de* in kernel-final constructions is similar to the English coordinator *and* in that the aspect that they both occur in complexes of different categories, whereas the *de* in kernel-initial constructions is similar to the Chinese coordinator *erqie* in the aspect that neither may occur in complexes of non-verbal categories.

I will present more details of kernel-final constructions, i.e., the one with the *and*-like *de*, in the following subsections.

### 3.2 Various categories of kernel-final constructions

*De* in kernel-final constructions in Mandarin Chinese exhibits two major properties.

First, *de* may occur with non-kernel elements of various types.

- |      |    |   |    |  |
|------|----|---|----|--|
| (43) | a. | lao de jiaoshou<br>old DE professor<br>'old professor(s)'                                     | b. | wu-li de jiaoshou<br>room-in DE professor<br>'the professor(s) in the room'                        |
|      | c. | yiqian de jiaoshou<br>past DE professor<br>'professor(s) of the old days'                     | d. | women de jiaoshou<br>1PL DE professor<br>'our professor(s)'  |
|      | e. | yan malu de shangdian<br>along street DE shop<br>'the shops along the street'                 | f. | dui zongjiao de taidu<br>toward religion DE attitude<br>'the attitude towards religions'           |
|      | g. | zuotian lai de jiaoshou<br>yesterday come DE professor<br>'the professor that came yesterday' | h. | zuotian lai de Li Jiaoshou<br>yesterday come DE Li professor<br>'Professor Li, who came yesterday' |
|      | i. | qita de jiaoshou<br>rest DE professor<br>'other professors'                                   | j. | suowei de jiaoshou<br>so-called DE professor<br>'so-called professor(s)'                           |

The non-kernel element is an adjective in (43a), a locative nominal in (43b), a temporal nominal in (43c), a personal pronoun in (43d), a prepositional phrase in (43e) and (43f), a relative clause in (43g), a non-restrictive relative clause in (43h), and a non-predicative adjective in (43i) and (43j).<sup>8</sup>

Second, *de* may occur with kernel elements of various categories (Tang 1990:421). We have seen that the kernel elements in (43) are nominal, whereas those in (39) and (40) above are not. More data are shown in (44). The kernel elements are underlined in (44).

- |      |    |  |    |
|------|----|--|----|
| (44) | a. | Na ge [hen deyi] de <u>xiaohai</u> ling-le jiang.<br>that CL very proud DE kid receive-PRF award<br>'That proud kid received the award.'   | NP |
|      | b. | Na ge xiaohai [hen deyi] de <u>ling-le</u> jiang.<br>that CL kid very proud DE receive-PRF award<br>'That kid received the award proudly.' | VP |

<sup>8</sup> Proper names and pronouns can be modified by adjectives or RCs in Chinese, a language that has no articles. Like the adjective *charitable* in *the charitable Miss Murry*, the modifiers of proper names and pronouns are always non-restrictive in Chinese (Lin 2003). They can be either eventive, as in (43h), or stative, as in (i).

(i) Bu yuan fa-pang de ni yinggai duo yundong.  
not want get-fat DE you should more exercise  
'You, who do not want to get fat, should do more exercise.'

- |    |  |                       |
|----|--|-----------------------|
| c. | Na tian wanshang ta [tebie] de <u>xingfen</u> .<br>that day evening he especially DE excited<br>'That evening, he was especially excited.'   | AP (stage-level)      |
| d. | Na du qiang [feichang] de <u>gao</u> .<br>that CL wall very DE high<br>'That wall is very high.'   | AP (individual-level) |
| e. | [Diu-le qianbao] de <u>ta</u> hen zhaoji.<br>lost-PRF wallet DE he very worried<br>'He, who has lost his wallet, was very worried.'          | Pronoun               |
| f. | [Diu-le qianbao] de <u>Baoyu</u> hen zhaoji.<br>lost-PRF wallet DE Baoyu very worried<br>'Baoyu, who has lost his wallet, was very worried.' | Proper name           |

The kernel element is the nominal *xiaohai* 'kid' in (44a), the eventive predicate (verbal) *ling-le jiang* 'received the award' in (44b), the stage-level stative predicate (adjectival) *xingfen* 'excited' in (44c), the individual-level stative predicate (adjectival) *gao* 'high' in (44d), the pronoun *ta* 'he' in (44e), and the proper name *Baoyu* in (44f). *De* occurs in all of these examples, which are all kernel-final constructions.

In the two examples in (45), the non-kernel element is the same, *hen kuaile* 'very happy.' However, the kernel element is the nominal *xuesheng* 'student' in (45a), but the verbal *qian-le zi* 'signed the name' in (45b).

- (45) a. Wo kanjian-le yi ge [hen kuaile] de xuesheng.  
I see-PRF one CL very happy DE student  
'I saw a very happy student.'
- b. Na ge xuesheng [hen kuaile] de qian-le zi.  
that CL student very happy DE sign-PRF name  
'That student signed {his/her} name happily.'

Considering such a wide range of data, Tang (1990:424) states "all the occurrences of *de* in question have the same behavior in that they do not carry any specific semantic content but express a modifier/modifiee relation. It does not appear to be the case that these *des* are of different sorts." She proposes that *de* is a functional head in all of these constructions.

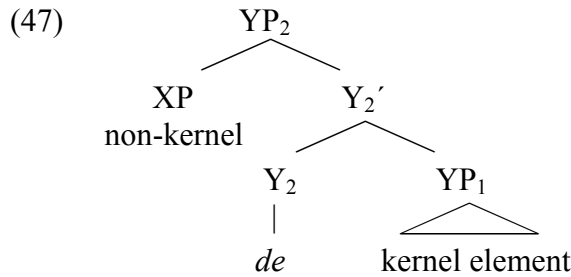
We have mentioned that the *de* in kernel-final constructions is similar to the English coordinator *and*. The two constituents linked by these elements can be any category. However, for *and*-coordinate constructions, it is the external conjunct that determines the category of the whole complex (see Zhang 2007cat), whereas for *de*-constructions, it is the kernel element that determines the category of the whole complex.

- (46) a. [<sub>XP</sub> [<sup>ext. conjunct</sup> XP] *and* [<sup>int. conjunct</sup> YP]]      b. [<sub>YP</sub> [<sup>non-kernel</sup> XP] *de* [<sup>kernel</sup> YP]]

### 3.3 The constituency of kernel-final constructions

In this subsection, I argue for the structure in (47) for kernel-final constructions. In this structure, *de* is the head, taking the non-kernel element (XP) as its specifier and the kernel element (YP<sub>1</sub>) as its complement.





In (47), *de* has an edge feature (i.e., an EPP-like feature. See Chomsky 2005 for the notion of edge feature), which requires the merger of XP at the Spec position. Therefore, although a non-kernel element can be a modifier of the kernel one, and modifiers are optional elements in general, in the presence of *de*, the occurrence of the non-kernel element becomes obligatory. Moreover, if the kernel element is relational (e.g. *taidu* ‘attitude’, *linju* ‘neighbor’, or body part terms such as *shou* ‘hand’), it is possible that the non-kernel element is merged with the kernel element first, satisfying the selection of the latter (Castillo 2001, Ogawa 2001), and then is remerged as the Specifier of *de*.

As for kernel-initial constructions, which is always verbal, I speculate that they are derived from (47) by the raising of the modified element (YP<sub>1</sub>) (cf. Karimi 2007 for Kurdish *Ezafe* constructions), when the head Y<sub>2</sub> is realized by another type of *de*, which is verbal and takes a head element as its phonological host. I leave the issue of the exact computation of kernel-initial constructions for future research. In any case, the relation between *de* and the non-kernel element is never that between a head and its complement.

In kernel-final constructions, the phonological adjacency between the non-kernel element and *de* does not mean that they form a syntactic constituent, as pointed out by C.R. Huang (1989:30). As is well-known, phonological phrases are not necessarily isomorphic to syntactic constituents. (48) demonstrates this (Jackendoff 1997:26):

- (48) a. [DP a [NP [AP big] house]]                      b. [φ [ω a big] [ω house]]

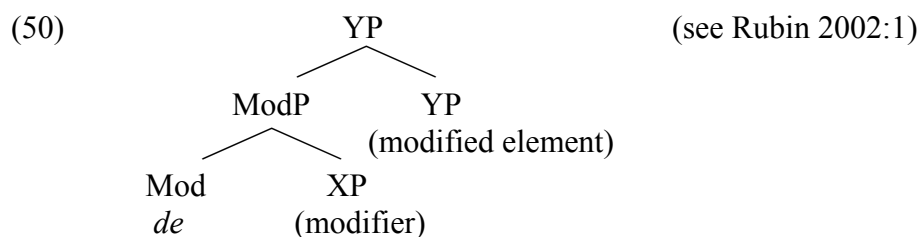
*De* may undergo morphological merger with the first phrase of the whole complex at PF, regardless of the syntactic category of the element, after the complex (i.e. YP<sub>2</sub> in (47)) has been built in syntax (see Matushansky 2006 for the notion of morphological merger). This is similar to the Latin coordinator *-que*, which consistently follows the first word of a conjunct, although it does not form a syntactic constituent with the word. Compare the two coordinators in Latin, *et* and *-que* in (49).

- (49) a.        senatus et populus romanus  
               senate and people Roman  
               ‘the senate and the Roman people’  
       b.        senatus populus-que romanus  
               senate people-and Roman  
               ‘the senate and the Roman people’

Thus phonological adjacency does not mean syntactic constituency. However, it has been indeed assumed that *de* and the non-kernel element to its left form a syntactic constituent, excluding the kernel element, in Cheng (1986), Tang (1990:424), Ning (1993), Rubin (2002, 2003), Aoun & Li (2003), among many others.

In Cheng (1986), *de* is treated as a complementizer, taking the non-kernel element to its left as its complement, although it “places no restrictions on the category of its complement” (p.319). In Tang (1990:428), *de* is treated as a functional category, it takes the non-kernel

element as its complement, and surfaces to the right of the element. In Rubin (2002, 2003), *de* is a Mod (for modification) element and “Mod is a functional category forming a shell around the content of the modifier, XP” (Rubin 2002:1), and ModP is an adjunct of the modified element (Rubin 2002, 2003):



In contrast, in Zhang’s (1999) n analysis, Simpson’s (2002) D analysis, and den Dikken’s (2006) Linker analysis of *de*, the complement of *de* is either the kernel element or the element that contains the kernel element. In other words, they do not group *de* with the non-kernel element, excluding the kernel element. This is also the basic characteristics of (47).

The arguments for the constituency of the combination of *de* and a non-kernel element, as represented in (50), are not convincing.

One argument given in Ning (1993) for the assumed complementation relation between *de* and the non-kernel element is that although the non-kernel element linked by *de* does not have to be a clause, but if it is a clause, it must contain a gap, and this requirement of a gap can be treated as a selectional property of a head on its complement. However, many gapless clauses to the left of *de* are well-accepted in Chinese (Tang 1979:243,289, Aoun & Li 2003:186, Chang 2006) (examples of gapless relative clauses in many other languages can be found in Chang 2006):

- (51) a. Wo hai jide [[ta zuotian zai wuli yong bi xie xin] de yangzi]  
 I still remember he yesterday in room with pen write letter DE scene  
 ‘I still remember the scene that he wrote letters with a pen in the room yesterday.’ (cf. Ning 1993, ch.2 (6a))
- b. Wo jisuan-chu-le [[qiche xingshi] de sudu].  
 I calculate-out-PRF car run DE speed  
 ‘I calculated the speed of that car’s running.’
- c. Wo wendao-le [[mama chao cai] de weidao].  
 I smell-PRF mom fry vegetable DE smell  
 ‘I smelled the smell from my mom’s vegetable-frying.’
- d. Ta shou-shang you [du-she yao] de shang]]  
 he hand-on have poisonous-snake bite DE wound  
 ‘There is a wound that results from a poisonous snake’s biting on his hand.’

Confronted with such data, Ning (1993) claims that in these data, we still can assume that there is a gap in the clausal modifier, and the gap is semantically associated with the kernel element. However, the alleged gap cannot be a syntactic position, for at least the following two reasons. First, it may not be filled by a copy of the kernel element, as seen in (52a). This indicates that reconstruction of the kernel element back to the clause makes the clause unacceptable, even without *de*. Second, it may not be filled by any pronoun co-indexed with the kernel element, as seen in (52b) (these two properties are also found in gapless relative clauses in other languages discussed in Chang 2006).

- (52) a. \*[qiche sudu xingshi] (cf. (51b))  
           car speed run  
       b. \*[qiche ta<sub>i</sub> xingshi] de sudu<sub>i</sub>  
           car it run DE speed

Another argument for the assumed constituency of the combination of a modifier and *de* is that every modifier can be followed by *de* (see Tang 1990), as in (53a), and the combination may occur as a conjunct, as in (53b) (Aoun & Li 2003:150, 250 fn.12):

- (53) a. jiaoshi-li (de) zhengzai jianghua de xuesheng  
classroom-in DE PROG speak DE student  
'the student who is speaking in the classroom'
- b. Zhuyao (de) erqie women yijing taolun-guo de shiqing  
main DE and we already discuss-EXP DE matter  
'the main matters that we have discussed'

A possible analysis of the multiple occurrences of *de* with multiple modifiers is seen in Simpson (2002). In Simpson's research, only nominal constructions are considered and thus the category of *de* in the constructions, as the head of the whole constructions, is specified as D. He states that the situation of multiple occurrences of *de* is similar to that of the multiple occurrences of determiners with multiple modifiers in Greek, Albanian, and Hebrew.

- (54) to megalo to kokkino to vivlio (Greek. Alexiadou & Wilder 1998:303)  
the big the red the book  
'the big red book'

If both *de* in (53) and *to* in (54) are treated as the head of the complex nominal, their property of “being spread” to each modifier may be represented in a similar way.

Moreover, in some languages including Chinese, certain types of coordinators may occur with every conjunct, which does not mean that all of the coordinators in the coordinate complex have the same syntactic and semantic properties and each coordinator is syntactically grouped with a conjunct (see Zhang 2007Ms2).

- (55) a. Na ge nūhair (you) meili you dafang. (Chinese)  
that CL girl and pretty and poised  
'That girl is both pretty and poised.'
- b. Baoyu (huozhe) yijing jie-le hun, huozhe yijing ding-le hun.  
Baoyu or already connect-PRF marriage or already order-PRF marriage  
'Baoyu is either married or engaged.'

Leaving the exact mechanism of the cross-linguistic spreading of formal elements to future study, the availability of this alternative analysis indicates that the occurrence of *de* with each modifier in multiple modifier constructions is not a convincing argument for the assumed constituency of *de* with the modifier.

The above discussion shows that the alleged constituency in which *de* is grouped with a non-kernel element is not supported by convincing arguments.

Importantly, I have found two facts that argue for our (47), and against (50). They both show the following contrast: in kernel-final constructions, the relationship between *de* and the kernel element to its right is similar to that between a head and its complement, as represented

in (47); however, in kernel-initial constructions, the relationship between *de* and the non-kernel element to its right is not like that between a head and its complement.

Our first fact is about the silence of the element to the right of *de*. In a kernel-final construction, the presence of *de* can license a null kernel element, seen in so-called Headless modification constructions, as in (56a) and (57a). In contrast, if *de* is not overt, the kernel element cannot be null, as seen in (56b) and (57b).

- (56) a. [Dai yanjing de ~~na-ge ren~~] lai-le.  
wear glasses DE that CL person come-PRF  
'The person who wears glasses came.'  
b. \*[Dai yanjing ~~de na-ge ren~~] lai-le.  
wear glasses DE that CL person come-PRF
- (57) a. Zheli bi duodeshi, bie yong ni baba xie xin de bi.  
here pen many not use 2SG dad write letter DE pen  
'Here are many pens. Don't use the one with which your dad writes letters.'  
b. \*Zheli bi duodeshi, bie yong ni baba xie xin ~~de bi~~.  
here pen many not use 2SG dad write letter DE pen

If *de* and the left non-kernel element form a constituent, excluding the kernel element, it is not clear why the silence possibility of the kernel element depends on the occurrence of *de*. If *de* and the kernel element have a head-complement relation, the correlation is expected, since similar correlation is also observed in other head-complement constructions. In Chinese, ellipsis of a phrasal element is licensed by an overt head element that takes the phrase as its complement. In (58), the null object is licensed by the overt verb *mai-le* 'buy-PRF'. Similarly, in (59a), the VP ellipsis is licensed by the overt modal *hui* 'will'. In (59b), the VP ellipsis cannot be licensed by the adverb *ye* 'also', which does not take the VP as its complement. In (59c), the VP ellipsis cannot be licensed by the adverbial NP *jin-nian* 'this year,' either.<sup>9</sup>

- (58) Baoyu mai-le xigua, Daiyu ye mai-le ~~xigua~~.  
Baoyu buy-PRF watermelon Daiyu also buy-PRF watermelon  
'Baoyu bought a watermelon, so did Daiyu.'
- (59) a. Baoyu hui mai baoxian, Daiyu ye hui ~~mai-baoxian~~.  
Baoyu will buy insurance Daiyu also will buy insurance  
'Baoyu will buy insurance, and Daiyu will also buy insurance.'  
b. \*Baoyu hui mai baoxian, Daiyu ye ~~hui mai-baoxian~~.  
Baoyu will buy insurance Daiyu also will buy insurance  
c. \*Baoyu qu-nian mai-le baoxian, Daiyu jin-nian ~~ye mai-le-baoxian~~.  
Baoyu last-year buy-PRF insurance Daiyu this-year also buy-PRF insurance

In kernel-initial constructions, however, *de* does not license a null modifier to its right, as seen in (60). This is compatible with our claim that *de* never takes a modifier as its complement.

- (60) a. \*Baoyu xie de hen zixi, Daiyu ze kan de ~~hen-zixi~~.  
Baoyu write DE very careful Daiyu however read DE very careful  
Intended: 'Baoyu wrote (something) carefully, but Daiyu read (something) carefully.'

<sup>9</sup> *De* in kernel-final constructions license null elements (kernel ones) to its right. This is different from *and*. The difference is accounted for by the contrast that *de* is an enclitic rather than proclitic, whereas *and* is a proclitic, which needs phonological material to its right (see Section 2).

- b. \*Baoyu zou de hen man, Daiyu ze pao de ~~hen—man~~.  
 Baoyu walk DE very slow Daiyu however run DE very careful  
 Intended: ‘Baoyu walks slowly, but Daiyu runs slowly.’

Our second fact is about the occurrence of the focus marker (FM) *shi* ‘be’. *Shi* may occur in various positions, but not between a head and its complement. This is shown in (61) (the \_ positions are all possible positions for *shi*).

- (61) a. \_ Baoyu \_ zuotian \_ mai-le (\*shi) na ben shu.  
           Baoyu yesterday buy-PRF FM that CL book  
           ‘Baoyu bought that book yesterday.’  
 b. \_ Cong (\*shi) Taipei \_ lai-le (\*shi) yi wei kexuejia.  
           from FM Taipei come-PRF FM one CL scientist  
           ‘A scientist has come from Taipei.’

The examples in (62) show that *shi* may not occur between *de* and the kernel element to its right, either. This indicates that, as represented in (47), the syntactic relationship between *de* and the kernel element is like that between a head and its complement.

- (62) a. \_ Na jian hongse de (\*shi) qunzi \_ zai chuang dixia.  
           that CL red DE FM skirt at bed under  
           ‘That red skirt is under the bed.’  
 b. \_ Baoyu \_ hen kuai de (\*shi) pao-zou-le.  
           Baoyu very quick DE FM run-away-PRF  
           ‘Baoyu ran away quickly.’

However, in kernel-initial constructions, *shi* may occur between *de* and the non-kernel element to its right, as shown in (63). This indicates that *de* never takes a non-kernel element as its complement.

- (63) a. Baoyu xie de shi hen zixi.  
           Baoyu write DE FM very careful  
           ‘Baoyu wrote indeed very carefully.’  
 b. Daiyu ku de shi hen shangxin.  
           Daiyu cry DE FM very sad  
           ‘Daiyu cried indeed very sadly.’

The focus marker *shi* has an interrogative version, *shi-bu-shi* ‘be-not-be’, which introduces a yes-no question reading to the clause. The distribution pattern of *shi-bu-shi* is exactly the same as *shi* in the *de* constructions:

- (64) a. \_ Na jian hongse de (\*shi-bu-shi) qunzi \_ zai chuang dixia? (cf. (62a))  
           that CL red DE FM skirt at bed under  
           ‘Is that red skirt is under the bed?’  
 b. Baoyu xie de shi-bu-shi hen zixi? (cf. (63a))  
           Baoyu write DE FM very careful  
           ‘Did Baoyu write very carefully?’

My proposed structure in (47) shares with Zhang’s (1999) n analysis, Simpson’s (2002) D analysis, and den Dikken’s (2006) Linker analysis in that *de* and the non-kernel element do

not form a constituent that excludes the kernel element. However, my analysis here is different from these analyses in a derivational sense. Specifically, I claim that *de* does not have any intrinsic categorial features, and their D or n category is obtained from the kernel element, if the latter is a nominal. If the latter is not a nominal, as in (44b), (44c), and (44d), *de* cannot be D or n. My analysis thus better captures the wide range of the *de* constructions than Simpson's (2002) D analysis. In den Dikken (2006), *de* is analyzed as a Linker, which correlates with predicate inversion. However, *de* also occurs with non-predicative adjectives, such as *qita* 'rest' in (43i) and *suowei* 'so-called' in (43j). The left position of non-predicative adjectives does not seem to be derived by predicate inversion. My analysis thus more precisely captures the fact than den Dikken's (2006) Linker analysis.

As we know, the category of a *de* complex is identical to that of the kernel element. Moreover, the category of a complex should be projected from the head of the complex. If *de* takes the kernel element as its complement, it is the head of the complex. Since *de*, like the coordinator *and*, does not have categorial features, it has to get categorial features from the kernel element, so that they can specify the category of the projected complex. In other words, kernel elements provides *de* with categorial features.

### 3.4 The chameleon-like *de* keeps the modified elements in situ

In kernel-initial constructions, modified elements must be verbal. Their left position might be derived by movement. We leave this speculation for future research. What is important to us is the fact that in kernel-final constructions, modified elements can be any category and they may not move.

We do not consider contrastive constructions like the following (65a). It is hard to rule out the possibility that the sentence-initial topic is base-generated there and thus it is not moved from the gap position. Presumably, the gap position is taken by a null element, which may be replaced by an overt noun, as in (65b).

- (65) a. Yinliao, ta mai-le san bei leng de \_\_\_\_.  
           beverage he buy-PRF three cup cold DE  
           'As for beverage, he bought three cups of cold one.'  
       b. Yinliao, ta mai-le san bei leng de niunai.  
           beverage he buy-PRF three cup cold DE milk  
           'As for beverage, he bought three cups of cold milk.'

Instead, we investigate a case in which a type of elements may move in other constructions and may be separated from their modifiers in the absence of *de*, but may not move in the presence of *de*. The type of elements are proper names and pronouns.

First, proper names and pronouns may move in general:

- (66) {Ta/Baoyu}, wo zhao jiu renshi.  
       he/Baoyu I early then know  
       'He/Baoyu, I got to know long time ago.'

Second, proper names and pronouns may be separated from their modifiers, such as non-restrictive relative clauses, cross-linguistically (de Vries 2002:190):

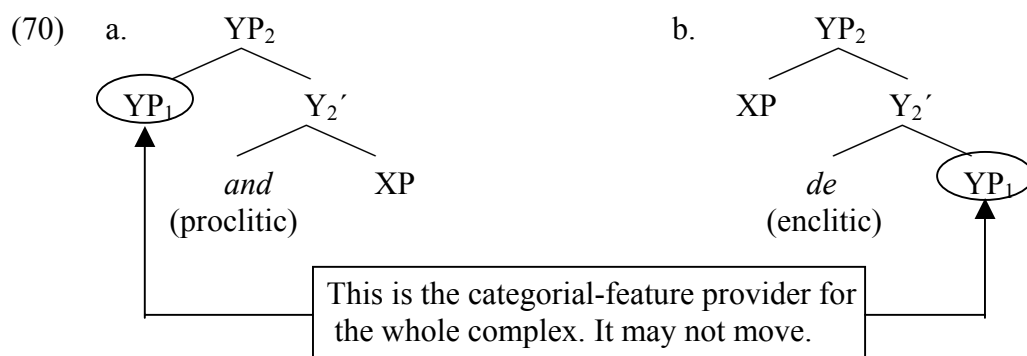
- (67) Ik heb Joop gezien, die twee zusters heeft. [Dutch]  
       I have Joop seen who two sisters has  
       'I have seen Joop, who has two sisters.'

However, modified proper names and pronouns must occur with *de* in Chinese and they may not move:

- (68) a. Diu-le qianbao \*(de) {ta/Baoyu} hen zhaoji.  
 lose-PRF wallet DE he/Baoyu very worried  
 ‘{He/Baoyu}, who lost his wallet, was very worried.’  
 b. \*{Ta/Baoyu}, diu-le qianbao de \_\_\_ hen zhaoji.  
 he/Baoyu lose-PRF wallet DE \_\_\_ very worried
- (69) a. Wo congbai boxue de Wang Jiaoshou.  
 I admire knowledgeable DE Wang Prof.  
 ‘I admire Prof. Wang, who is knowledgeable.’  
 b. \*Wang Jiaoshou, wo congbai boxue de \_\_\_\_.  
 Wang Prof. I admire knowledgeable DE

The observed contrast that *de* may license a null element or elided element (see (56a) and (57a)), but not trace, to its right, needs an explanation. Moreover, it has been noted that the sites of ellipsis are all and only those which meet the licensing conditions on traces (Zagona 1988a, Chapter 4, 1988b and Lobeck 1987a, b). In other words, if a syntactic position is a possible ellipsis site, it is also a possible launching site of movement. From this perspective, the fact that *de* licenses ellipsis but not movement also needs an explanation.

Recall that *and* also allows external conjunct to be null (see 2.1), but does not allow the movement of the conjunct. We now see a parallel situation in the *de* constructions. I use the following diagram to show the similarity of the external conjunct of *and*, YP<sub>1</sub> in (70a), and the kernel element of the *de* constructions, YP<sub>1</sub> in (70b):



I have argued in the last subsection that the categorial features of a kernel element have been transferred to *de*. The immobility of the kernel element in the *de* constructions supports my claim stated in 1.3.2: Elements may not move if they do not have categorial features as a carrier of overt movement.

#### 4. Argument B for the new account of the CCe: no CCe effect in Chinese comitatives

This section shows the possibility of the CCe violation in the absence of any *and*-like coordinator and under a certain semantic condition, i.e., in non-distributive coordination. I will draw my conclusion from the syntactic properties of the *he/gen* constructions in Chinese.

##### 4.1 Introduction: *he/gen* constructions in Chinese

The word *he* or *gen* can be translated into ‘and’, ‘with’, ‘to’, and so on. Constructions containing *he/gen* always have two nominals, such as *Baoyu* and *Daiyu* in each of the examples in (71).

- (71) a. Baoyu {he/gen} Daiyu ge mai-le yi liang che.  
Baoyu HE/GEN Daiyu each buy-PRF one CL car  
'Baoyu and Daiyu each bought a car.'
- b. Baoyu {he/gen} Daiyu he-mai-le yi liang che.  
Baoyu HE/GEN Daiyu co-buy-PRF one CL car  
'Baoyu and Daiyu bought a car together.'
- c. Jingguo yifan huxiang taojiahuanjia, Baoyu {he/gen} Daiyu mai-le yi liang che.  
after a.while mutual bargain Baoyu HE/GEN Daiyu buy-PRF one CL car  
'Baoyu bought a car from Daiyu, after they bargained for a while.'

Semantically, the construction represented by (71a) is distributive, whereas the construction represented by (71b) is non-distributive or comitative. Distributive constructions are indicated by the occurrence of a distributive adverb, such as *ge* 'each', *dou* 'all' (Lee 1986, Li 1995), and *fenbie* 'respectively.' In the distributive (71a), the individuals denoted by the two nominals *Baoyu* and *Daiyu* take part in a car-buying event separately. Non-distributive or comitative constructions, are indicated by the occurrence of a collective or relational predicate, such as *xiangzhuang* 'collide,' *jiehun* 'marry,' and *yiyang gao* 'same tall', or a collective marker, such as the verbal prefix *he-* 'co-', or the adverb *yiqi* 'together', or a collective verb, such as *hebing* 'combine'.<sup>10</sup> In the non-distributive or comitative (71b), the individuals denoted by the two nominals, *Baoyu* and *Daiyu*, take part in the relevant event (car-buying) together. In (71a), both *Baoyu* and *Daiyu* are the agent of their respective car-buying action. In (71b), *Baoyu* and *Daiyu* together are agent of a single car-buying action. In (71c), however, *Baoyu* is the agent (the buyer) while *Daiyu* is the source of the car-buying action (the seller), and thus their semantic roles are in contrast.

It is generally recognized that the word *he/gen* is a coordinator in data like (71a), and a preposition or verb in data like (71c) (Zhu 1982:176, among others). In (71a), the coordinator and the two nominals *Baoyu* and *Daiyu* form a coordinate complex. Since the distributive marker *ge* 'each' occurs there, the coordination is distributive, rather than collective. In (71c), the PP *he/gen Daiyu* is an adjunct of the predicate, not forming any complex nominal with *Baoyu*. What is unclear is the syntactic structure of examples like (71b) and the status of the *he/gen* there. In Section 4.2, I will present the syntactic differences between the construction represented by (71b) and that represented by (71c), arguing that the former is a coordinate construction, patterning with the construction represented by (71a). Then in Section 4.3, I present systematic data to show the correlation between the possible conjunct-coordinator separation and collectivity. The conclusion of this section is that the CCE is relativized in collective coordination.

Note that in comitative constructions, the coordinators *he* and *gen* have the same distributions. Thus in all of the comitative data of this section, either of the two words can be replaced with the other.

#### 4.2 The coordinator properties of the comitative *he/gen*

Early discussion of the close relationship between comitative and coordinate constructions can be seen in Jespersen (1924:90). Cross-linguistically, the linking words occurring in comitative constructions share forms with the words that have other functions (Mithun 1988, 339, 349, among others). In Chinese, the diachronical evolution order of coordinators is verb > preposition > coordinator (Liu & Peyraube 1994). In modern Chinese, in addition to their verbal uses, the words *he* and *gen* may introduce a comitative nominal, as in (72), a source, as

<sup>10</sup> See Teng (1970:355) for a list of collective predicates in Chinese (He calls them "multiple-reference verbs").



in (73a), or a goal, as in (73b).

- (72) a. Baoyu *gen* Daiyu *he-mai-le* *yi* *liang* *che*.  
 Baoyu GEN Daiyu co-buy-PRF one CL car  
 ‘Baoyu and Daiyu bought a car together.’  
 b. Baoyu *bijiao-le* *zhe* *ben* *shu* *gen* *na* *ben* *shu*.  
 Baoyu compare-PRF this CL book GEN that CL book  
 ‘Baoyu compared this book and that book.’
- (73) a. Baoyu *gen* Daiyu *xue-le* *bushao* *dongxi*.  
 Baoyu GEN Daiyu learn-PRF many thing  
 ‘Baoyu learned a lot from Daiyu.’  
 b. Baoyu *gen* *xuesheng* *jiang-qi-le* *guoqu* *de* *jingli*.  
 Baoyu GEN student tell-INCH-PRF past DE experience  
 ‘Baoyu started to tell his past experiences to the students.’

It is necessary to clarify the syntactic status of *he* and *gen* in comitative constructions, as in (72). I call the *he/gen* in such constructions *com-he/gen*, and the one that functions as a preposition, as in (73), *prep-he/gen*.

If *com-he* and *com-gen* are prepositions, they form a PP with the nominal to their right, without forming any constituent with the nominal to their left. However, if they are coordinators, they form a complex nominal with the associated two nominals.

In Zhang (2007Ms1), several arguments are given to show the coordinator status of *he* and *gen* in comitative constructions. I now introduce one of the arguments, the one that has been mentioned in Zhu (1982:176) but elaborated in Zhang (2007Ms1).

The argument for the coordinator status of *com-he/gen* is that the two nominals associated with the *com-he/gen* can exchange their positions, without affecting the basic meaning of the construction, whereas the nominals in *prep-he/gen* constructions cannot do so (see Zhu 1982:176). In (74) through (76), the pre-*com-he* nominal and the post-*com-he* nominal can switch their positions without affecting the reading.

- (74) a. Baoyu *he* Daiyu *dingqin-le*.  
 Baoyu HE Daiyu engage-PRF  
 ‘Baoyu and Daiyu are engaged.’  
 b. Daiyu *he* Baoyu *dingqin-le*.
- (75) a. Qing *he* yang *he-cheng* *shui*.  
 hydrogen HE oxygen combine-become water  
 ‘Hydrogen and oxygen make water.’  
 b. Yang *he* qing *he-cheng* *shui*.
- (76) a. Baoyu *he* Daiyu *he-zhu-le* *yi* *zuo* *fangzi*.  
 Baoyu HE Daiyu co-rent-PRF one CL house  
 ‘Baoyu and Daiyu rented a house together.’  
 b. Daiyu *he* Baoyu *he-zhu-le* *yi* *zuo* *fangzi*.

The reversibility in the above data is parallel to the reversibility of the following examples of distributive coordination, which are similar to (71a) above.

- (77) a. Baoyu *he* Daiyu *ge* *zhu-le* *yi* *zuo* *fangzi*.  
 Baoyu HE Daiyu each rent-PRF one CL house  
 ‘Baoyu and Daiyu each rented a house.’  
 b. Daiyu *he* Baoyu *ge* *zhu-le* *yi* *zuo* *fangzi*.

In (78), however, the preposition *gen* introduces a source, and if the source nominal *Daiyu* is exchanged with the agent nominal *Baoyu*, the meaning is changed. The translation of (78a) is different from that of (78b).

- (78) a. Jingguo yifan huxiang taojiahuanjia, Baoyu gen Daiyu mai-le yi liang che.  
 after a.while mutual bargain Baoyu GEN Daiyu buy-PRF one CL car  
 ‘Baoyu bought a car from Daiyu, after they bargained for a while.’  
 b. Jingguo yifan huxiang taojiahuanjia, Daiyu gen Baoyu mai-le yi liang che.  
 after a.while mutual bargain Daiyu GEN Baoyu buy-PRF one CL car  
 ‘Daiyu bought a car from Baoyu, after they bargained for a while.’

Constituent reversibility is seen between conjuncts of a symmetrical coordination, but not between elements that have different theta roles. If the comitative constructions in (74) through (76) are coordinate constructions, the constituent reversibility is accounted for.

The logic of this argument is that with respect to this very property of swapping of two DPs, comitative constructions pattern with coordinate constructions, rather than constructions with prepositional phrases.

Note that this reversibility in the com-*he/gen* construction is merely a merger flexibility. The flexibility implies that it makes no difference which nominal is merged with the com-*he/gen* first. It does not mean that we have any operation in syntax to exchange the positions of two elements.

One might assume that *he* and *gen* in Chinese comitative constructions are prepositions just like the comitative *with* in English. However, the syntactic properties of comitative constructions in these two languages are different. For instance, the default position of the *with*-phrase in English is sentence-final (*John is friends with Bill*), however, the *he/gen*-phrase cannot be sentence-final, if it is related to the subject. Moreover, when the *he/gen*-phrase is related to the subject, it must be preverbal, however, preverbal position is extremely marked for the *with*-phrase (*\*John with Bill are friends*). Recent studies of English comitatives conclude that in symmetrical comitative constructions, *with* is not a preposition. Instead, it is analyzed as a special kind of coordinator in Kayne (1994:66) and as a D element in Zhang (2007). I will not repeat their arguments here. Shortly speaking, English comitatives do not support the preposition analysis of the Chinese com-*he/gen*.

The above argument supports the claim that comitative *he/gen*-constructions are coordinate constructions, and *he* and *gen* there are coordinators rather than prepositions. This conclusion gives me the permission to gloss *he* and *gen* in comitative constructions as ‘and’ in the rest of this paper.

If comitative constructions are coordinate constructions in Chinese, the word *he* or *gen* and the associated two nominals form a complex nominal in their base-positions. In this respect, comitative constructions behave the same as other coordinate constructions. On the other hand, since the conjuncts of comitative coordination are related in a single eventuality, the coordination is collective coordination, in contrast to distributive coordination.

This conclusion predicts that in a comitative construction, if any one of the two associated nominals, which are conjuncts, is not adjacent to *he/gen*, the surface position must be a derived position. The separation of the conjunct from the rest of the base-generated coordinate complex is unexpected, if the CC is an absolute syntactic constraint.

In next subsection, I will present such a well-accepted separation of the first DP from the rest of the coordinate complex. Based on this possible separation and its licensing condition, I will claim that the CCe can be relativized in collective coordination.

### 4.3 The possible violation of the CCE in non-distributive coordination

In this subsection, I show the systematic possible separation of the first conjunct from the rest of a coordinate complex in collective coordination, in contrast to distributive coordination.

In order to show the contrast between collective and distributive coordination, in addition to using distributive adverbs such as *fenbie* ‘separately’, I also use the coordinator *ji* ‘and’, which is an exclusively distributive coordinator (see Zhang 2007Ms1).

Since comitative complexes are coordinate complexes, their base positions should be the same as those of any other coordinate complexes, depending on the selecting elements. If a comitative coordinate complex is a subject of a transitive predicate, it is base-generated at Spec vP. In this subsection, I will show that, the first conjunct can be raised from the base-position of subjects, and thus no CCE effect is seen. The raising is observed in comitative coordinate constructions, but not in distributive coordinate constructions.

#### 4.3.1 Raising verbs between first conjuncts and coordinators

One indication that first conjuncts may move is seen in the occurrence of raising verbs between first conjuncts and coordinators.

CCE violation is seen in data like (79). In (79), the first conjunct and the coordinator are separated by the epistemic *hui* ‘might’ and *yinggai* ‘should,’ which are raising verbs (Huang 1988, Lin & Tang 1996).

- (79) a.     Huoche hui     gen qiche xiangzhuang ma?  
          train   might and bus   collide        Q  
          ‘Might the train collide with the bus?’  
      b.     Wo caixiang, Baoyu yinggai gen Daiyu xia-zhe   qi     ne.  
          I   guess     Baoyu should   and Daiyu play-PRG chess PRT  
          ‘I guess, Baoyu should be playing a chess with Daiyu (now).’

It is generally assumed that if a subject precedes a raising verb, the word order is derived by the raising of the subject from a position that is c-commanded by the verb. If so, in (79a), *huoche* ‘train’ is raised; and in (79b), *Baoyu* is raised. In each case, the raising launches from a coordinate complex, violating the CCE.

The readings of (79) can also be expressed in (80). In each sentence of (80), the whole comitative coordinate complex occurs to the left of the modal. In this case, no conjunct moves alone, and thus the CCE issue is irrelevant.

- (80) a.     Huoche gen qiche hui   xiangzhuang ma?  
          train    and bus   might collide        Q  
          ‘Might the train collide with the bus?’  
      b.     Wo caixiang, Baoyu gen Daiyu yinggai xia-zhe   qi     ne.  
          I   guess     Baoyu and Daiyu should   play-PRG chess PRT  
          ‘I guess, Baoyu should be playing a chess with Daiyu in the yard now.’

There is a consistent reading difference between data like (79a) and their counterpart data like (80a), from the perspective of information structure: the two DPs in (79a) are not symmetrical, whereas the two DPs in (80a) are. Specifically, in the absence of any contrastive stress, the DP preceding the raising verb is foregrounded, i.e., emphasized, whereas the one following the raising verb is backgrounded, i.e., not emphasized. In (79a), *huoche* ‘train’ is foregrounded and *qiche* ‘bus’ is backgrounded; however, in (80a), there is no such a difference between *huoche* and *qiche*. The reading difference can be captured by Seiler’s (1974) generalization that comitative constructions leave the extent of participation of the

backgrounded partner in the action underspecified. In other words, the backgrounded partner participates in the action to varying degrees: from mere ‘accompanying’ to full-fledged ‘partnership.’ The foregrounded participant of a comitative construction has the property of “Principality” (Teng 1970:332), in contrast to the other participant. This reading contrast consistently occurs in other comitative data in which the first conjunct is separated from the rest of the coordinate complex.

Unlike in comitative constructions, first conjuncts cannot be separated from the coordinators by raising verbs in distributive coordinate constructions. In (81), *fenbie* indicates the coordination is a distributive coordinate construction, and in (82), the distributive coordinator *ji* occurs. The epistemic *hui* ‘will’ cannot occur between the first conjunct *Lao Li* and the coordinator in (81), and the epistemic *yinggai* ‘should’ cannot occur between the first conjunct *Li Xiansheng* and the coordinator *ji* in (82). Since no conjunct may be separated from the coordinator in distributive coordinate constructions, CCe effects are observed.

- (81) a. \*Lao Li hui gen Lao Wang fenbie qu-le Shanghai ma?  
Lao Li will and Lao Wang respectively go-PRF Shanghai Q  
b. Lao Li gen Lao Wang hui fenbie qu-le Shanghai ma?  
Lao Li and Lao Wang will respectively go-PRF Shanghai Q  
‘Might Lao Li and Lao Wang have gone to Shanghai respectively?’
- (82) a. \*Li Xiansheng yinggai ji qi furen dou zai kan-xi ne.  
Li Mr. should and his wife all PRG watch-play PRT  
b. Li Xiansheng ji qi furen yinggai dou zai kan-xi ne.  
Li Mr. and his wife should all PRG watch-play PRT  
‘Mr. Li and his wife should both be watching a play now.’

#### 4.3.2 Adverbials between first conjuncts and coordinators

Another indication that first conjuncts may move is seen in the occurrence of adverbials between first conjuncts and coordinators.

CCe violation is also noted in the fact that first conjuncts can be separated from coordinators by adverbials such as *yijing* ‘already’ or temporal or locative adverbials in comitative constructions. In (83b) and (84b) the first conjunct and the coordinator are separated by the circumstantial *yiqian* ‘before, in the past’ or *zai Riben* ‘in Japan.’ The two b-sentences below are near synonymous to the corresponding a-sentences.

- (83) a. [Baoyu he Daiyu] yiqian jie-guo hun.  
Baoyu and Daiyu past connect-EXP marriage  
‘Baoyu and Daiyu married before.’  
b. Baoyu<sub>i</sub> yiqian [t<sub>i</sub> he Daiyu] jie-guo hun.  
Baoyu past and Daiyu connect-EXP marriage
- (84) a. [Akiu gen Baoyu] zai Riben jian-le mian.  
Akiu and Baoyu at Japan meet-PRF face  
‘Akiu and Baoyu met in Japan.’  
b. Akiu<sub>i</sub> zai Riben [t<sub>i</sub> gen Baoyu] jian-le mian.  
Akiu at Japan and Baoyu meet-PRF face

In (83b) and (84b), no resumptive pronoun is allowed, as shown below:

- (85) a. \*Baoyu<sub>i</sub> yiqian [ta<sub>i</sub> he Daiyu] jie-guo hun.  
Baoyu past he and Daiyu connect-EXP marriage

- b. \*Akiu<sub>i</sub> zai Riben [ta<sub>i</sub> gen Baoyu] jian-le mian.  
Akiu at Japan he and Baoyu meet-PRF face

Resumptive pronouns are seen in the gapless topic sentences such as (51). The occurrence of the pronoun shows that the topic is base-generated in the surface position, rather than being moved there.

- (86) Akiu<sub>i</sub> zai Riben, ta<sub>i</sub> meitian da chang-tu dianhua.  
Akiu at Japan he everyday make long-distance phone call  
'Speaking of Akiu, he made long-distance phone calls in Japan everyday.'

The ban of resumptive pronouns in data like (83b) and (84b) indicates that the sentence-initial nominals are not gapless topics, and are thus not base-generated in their surface positions. Instead, they are moved out of a post-circumstantial position.

Since all conjuncts and the coordinator of a coordinate DP complex must be merged into a constituent which excludes any circumstantial, the occurrence of the circumstantial between the first conjunct and the coordinator in the b-sentences in (83) and (84) suggests that the conjunct has been moved. If so, the CCE is violated.

Unlike in comitative constructions, first conjuncts cannot be separated from the coordinators by adverbials in distributive coordinate constructions. In (87) the distributive coordinator *ji* occurs; and in (88), the adverb *fenbie* indicates that the coordination is distributive. In all of these data, the first conjunct and the coordinator must be adjacent. Again, since no conjunct may be separated from the coordinator in the distributive coordinate constructions, CC effects are observed.

- (87) a. \*[Shizhang] zai Riben [ji qi furen] canguan-le yi ge youeryuan.  
Mayor at Japan and his wife visit-PRF one CL kindergarten  
b. [Shizhang ji qi furen] zai Riben canguan-le yi ge youeryuan.  
Mayor and his wife at Japan visit-PRF one CL kindergarten  
'The mayor and his wife visited a kindergarten in Japan.'
- (88) a. \*Baoyu zuotian [he Daiyu] fenbie qu-le Taiguo.  
Baoyu yesterday and Daiyu respectively go-PRF Thailand  
b. [Baoyu he Daiyu] zuotian fenbie qu-le Taiguo.  
Baoyu and Daiyu yesterday respectively go-PRF Thailand  
'Baoyu and Daiyu went to Thailand respectively yesterday.'

The above two contrasts between the comitative and distributive coordinate constructions with respect to the mobility of first conjuncts show that CCE effects are sensitive to the semantic type of the coordination: the first conjunct can move in comitative coordination but not in distributive coordination. We thus see the semantic side of the CCE. For a discussion of the implications of this semantic side of the CCE, see Zhang 2007Ms1. What is crucial here is the fact that conjuncts may move, and thus the CCs is not a constraint on syntactic operations.

## 5. Summary

Based on the assumption that the categorial features of external conjuncts are transferred to the coordinator *and* (Zhang 2007cat), in this paper, I concluded that this transference keeps external conjuncts in situ, since elements without any category-features may not move overtly. Our analysis explains the effects that the CCE tries to cover.

Our account for the CCE is supported by two facts. First, in the Chinese *de* constructions, kernel elements provide categorial features for *de*, which has no intrinsic categorial features and is the head of the whole complexes, and they may not move. Second, in the comitative coordinate constructions in Chinese, initial conjuncts do not provide categorial features for the coordinators, which have their intrinsic categorial features, and they may move.

The CCI, however, simply manifests the clitic property of coordinators. As clitics, coordinators need their complement as their phonological host. Therefore, internal conjuncts may not move.

Adding up, the CC is not a construction-specific syntactic constraint. Instead, it is related to the lexical/morphological makeup of coordinators such as *and*. Theoretically, the CCE, as part of the CSC, has been treated as a construction-specific constraint, while the notion of “conjunct” is a label for elements that are merged with coordinators. Coordinate constructions do not represent any special syntactic structure (Munn 1987, among others), and coordinators do not represent any special category (Zhang 2007cat). Thus, coordinate construction is not a primitive notion in syntax. In my claim here, no notion of “conjunct” is required. Conjuncts as regular Spec and Complement elements may undergo syntactic movement. What I state is the relation between the word *and* and its categorial feature provider: the category features of the latter are transferred to the former, which makes the latter unable to move overtly.

In the minimalist program, movement is driven by morphological considerations (Chomsky 1995:262). My study here shows that the blocking of movement can also be related to morphological properties of specific syntactic elements, in addition to the generally recognized locality restrictions.

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