Cognate objects in Chinese
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It has been observed that in English while unergative verbs can take cognate objects, transitive verbs or unaccusative verbs cannot (Massam 1990). However, in Chinese, not only can intransitives take cognate objects, transitives can also take cognate objects. Furthermore, when a transitive takes a cognate object and another object, the two objects may be freely ordered, depending on the forms of the two objects, i.e., whether the cognate object is a reduplicated form of the verb and whether the other object NP is a pronoun. In this paper I examine the ordering between the cognate object and the other object in the double object construction. I propose a scrambling process, clitic status of the object pronoun, and lexical status of a reduplicated cognate object, to explain the different orderings in the double object construction.

In this paper I examine cognate objects in Chinese. The concept of cognate objects was proposed for languages such as English. For instance, in laugh a laugh, a laugh is regarded as the cognate object of the verb laugh. A cognate object such as a laugh has the following three characteristics:

I. Form: a laugh bears the same form as the verb laugh;
II. Object: a laugh is the syntactic object of the verb laugh,
III. Delimitative function: a laugh delimits the action of the verb laugh.

It has been observed that in English while unergative verbs such as laugh can take cognate objects, transitive verbs such as kill, or unaccusative verbs such as appear cannot (but see Section 3). It is argued that this is because the D-structure object position of an unergative is empty and is thus available for taking a cognate object, whereas the D-structure object position of a transitive or unaccusative is already filled with an object and is thus unavailable for taking a cognate object (Massam 1990). However, Pham 1998 (this volume) points out that in Vietnamese, not only intransitives can take cognate objects, transitives can also take cognate objects. Cognate objects in Chinese seem to behave in the same way as those in Vietnamese. That is, not only intransitives take cognate objects, transitives can also take cognate objects. Furthermore, differently from Vietnamese, when a transitive takes a cognate object and another object, V CO NP, the two objects may be freely ordered, depending on the forms of the two objects. In this paper I focus on

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1. Here I join Massam 1990, Macfarland 1992, and Pham 1996 in assuming that cognate objects are thematic objects. A different view regarding the thematic status of cognate objects is that they are adjuncts, not arguments (see Jones 1988, Moltmann 1990, etc.).

2. CO: cognate object.
the ordering between the cognate object and the other object in the construction V CO NP, in the framework of the Government and Binding theory. The examination will provide a better understanding of cognate objects in Chinese as well as the idea of cognate objects in general. Besides, it will also provide evidence for the status of pronouns as clitics in Chinese and additional evidence for scrambling in Chinese.

The organization of the paper is as follows. In Section 1 I present a brief introduction to cognate objects in Chinese. In Section 2 I discuss the ordering between the CO and the NP in the construction V CO NP. Specifically I take into consideration two factors. One factor is whether the CO is a reduplicated form of the verb. The other factor is whether the NP is a pronoun. These two factors interact with each other, leading to four different situations. In Section 3 I draw the conclusions of the paper.

1. Cognate objects in Chinese

In this section I present a brief introduction to background work on cognate objects in Chinese, particularly Chao 1968.

According to Chao 1968, cognate objects in Chinese can be classified into three types according to their form. The first type of cognate object is a reduplicated form of the verb. I show this in (1).

1. kan yi-kan
   look a-look "have a look"

   The cognate object yi-kan repeats the form of the verb kan ("look").

   The second type of cognate object takes its form from things related to the action, such as body parts, tools, and the accompanying result of the action. I give an example for each case.

2. yao yi-kou
   bite a-mouth "bite a bite"

   Kou ("mouth") is the part responsible for biting and is taken as the cognate object.

3. chou yi-bian-zi
   whip a-lash "whip a whip"

   Bian-zi ("whip") is the tool of whipping and is taken as the cognate object.

4. shuo yi-sheng
   speak a-sound "tell (sb. sth.)"

   Sheng ("sound") accompanies the action of speaking and is taken as the cognate object.
The third type of cognate object includes terms such as "ci", "hui", "xia", "bian", "tang", "fan", "long", "chang", "dun", "zhen", "quan", and "qi". These terms are used with a number to mean "the time(s) an action is done". For instance:

5. pai-le yi-xia  
   pat-Asp one-time "patted once"

The cognate object yi-xia ("one-time") tells that the action of "patting" has happened once.

To summarize, in the traditional Chinese literature (Chao 1968), three types of cognate objects are recognized based on the form of the object. They are: cognate objects which are reduplicated forms of the verb; cognate objects which are things related to the action; and terms expressing the times an action is done. I summarize these types in the table in (6).

<table>
<thead>
<tr>
<th>Type 1 COs</th>
<th>Form</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>reduplicant of the verb</td>
<td>kan yi-kan &quot;look a look&quot;</td>
</tr>
<tr>
<td>Type 2 COs</td>
<td>action-related things</td>
<td>ti yi-jiao &quot;kick a foot&quot;</td>
</tr>
<tr>
<td>Type 3 COs</td>
<td>terms used with a number</td>
<td>lai yi-ci &quot;come one time&quot;</td>
</tr>
</tbody>
</table>

All the three types of cognate objects delimit the action of the verb. It is because of this delimitative function that Chao (1968) regards the three types as cognate objects, though Types 2&3 are not cognate objects in the original sense, since they do not bear the same form as the verb.

As I will show in the next section, the traditional Type 1 COs behave differently from Type 2 and Type 3 COs in terms of ordering of the CO with respect to the NP in the construction V CO NP. For the purpose of the paper hereafter I will only differentiate between Type 1 COs and Types 2&3 COs.

## 2. Ordering between CO and NP

In this section I examine the ordering between the CO and the NP in the construction V CO NP.

There are two factors involved in the ordering issue. One factor is the form of the CO, i.e., whether it is a reduplicated form of the verb or not. The other factor is the status of the NP, i.e., whether it is a pronoun or a regular NP. I show the interaction of these factors in (8). Each type is numbered according to the order of discussion in the following sections.

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3 An NP in Chinese consists of a pronoun, or a noun plus other optional elements, as shown in (7) (Li and Thompson 1981; brackets indicating optionality).

(7) NP --> Pron
   NP --> (associative phrase) + (classifier phrase) + (relative clause) + (adj.) + noun

A classifier is a word that must cooccur with a number and/or a demonstrative or certain quantifiers before the noun if these are present. An associative phrase denotes a type of modification where two NPs are limited by the particle de. The first NP together with the particle de is the associative phrase.
8. Ordering factors

<table>
<thead>
<tr>
<th></th>
<th>CO non-reduplicant</th>
<th>CO reduplicant</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP pronoun</td>
<td>(1)</td>
<td>(4)</td>
</tr>
<tr>
<td>NP non-pronoun</td>
<td>(2)</td>
<td>(3)</td>
</tr>
</tbody>
</table>

As can be seen in (8), four situations arise out of the interaction of the two factors. Next I examine the four situations one by one.

2.1 CO is non-reduplicant and NP is pronoun

When the CO is not a reduplicant of the verb and when the NP is a pronoun, the NP must appear next to the verb, with the CO appearing further away (Ding 1961; Lü 1981; Ma 1983; Liu et al. 1983; Li 1986; Fang 1993, among others). I give an example in (9).

9. ti ta yi-jiao
   kick him a-foot  “kick him a kick”

The pronoun object \( ta \) has to appear next to the verb, with the CO \( yi-jiao \) further away from the verb. Switching their order is not possible. I show this in (10).

10. *ti yi-jiao ta
    kick a-foot him  “kick him a kick”

The pronoun \( ta \) cannot be separated from the verb by the CO \( yi-jiao \).

Next I show how the ordering \( ti ta yi-jiao \) surfaces from its D-structure and why the ordering \( *ti yi-jiao ta \) is not allowed. In order to do this, it is necessary to make some assumptions about the structure of constructions with two objects.

Here I adopt Larson’s 1988 treatment of double object constructions. According to Larson 1988, the theme/patient object NP occupies the Specifier position of the VP and the other object NP occupies the Complement position, as shown in (11).

11. VP
    \[ \begin{array}{c}
    \text{NP} \\
    \text{Theme/Patient} \\
    \text{V} \\
    \text{V'} \\
    \text{Other object} \\
    \end{array} \]

Following Larson I propose (12) as the D-structure for the double object construction \( ti ta yi-jiao \). The pronoun \( ta \) is a theme/patient of the verb \( ti \) (“kick”) in this sentence, while \( yi-jiao \) is a second object.
The patient *ta* appears in Specifier of VP and the CO *yi-jiao* appears as the Complement of VP. Larson proposes that the surface ordering where the verb precedes both objects in English is a result of Verb Raising. I assume this for Chinese as well. The verb *ti* moves out of VP, as shown in (13).

After the verb moves out of VP, I propose that the pronoun *ta* cliticizes to the verb (see below for the reason for positing this), as shown in (14).

The pronoun *ta* is cliticized to the verb that has moved out of VP. Hence the surface ordering *ti ta yi-jiao*.

As I will demonstrate in the following section, a CO such as *yi-jiao* can scramble out of VP, ending up in a position between the verb and the other object NP. However, in (14), since the pronoun *ta* is cliticized to the verb, even if the CO scrambles out of VP, it cannot move into a position between the verb and the other object NP.

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The V might be moving to Infl, or, following the proposal of Hale&Keyser 1993 and Chomsky 1995, to head of Vmax.

Here in Chinese the clitic pronoun appears to the right of the verb. It is language-particular which side of the verb the clitic is attached to. For instance, in Portuguese, clitics appear before the verb, whereas in many other Romance languages such as Spanish, clitics precede the verb (Spencer 1991, Chapter 9).
pronoun. This is why the ordering *ti yi-jiao ta is ruled out. That is, a pronoun is never separated from the verb by a non-reduplicated CO.

This analysis holds that an object pronoun such as ta in (14) is a clitic. There are two pieces of evidence for this claim. First, while pronouns in subject position retain their lexical tones and are stressed, pronouns in object position (including objects of verb or objects of preposition) are normally stressless (unless receiving a contextual stress) and they lose their lexical tones, becoming neutral toned (Chao 1968). Loss of stress has been commonly used in distinguishing clitics from independent words (Zwicky 1985).

The second piece of evidence that object pronouns are clitics comes from Mandarin Tone 3 Sandhi. In Mandarin, when two Tone-3 syllables appear in a row, the second Tone 3 causes the first Tone 3 to change into Tone 2. When more than two Tone-3 syllables appear together, they are divided into different domains. A Tone-3 Sandhi domain is usually a disyllabic foot. In each domain the second syllable triggers the tone sandhi of the first syllable and the final (either the second or the third, etc., depending on the number of syllables in the domain) syllable in the domain remains unchanged. Now I compare the tonal patterns of the two phrases gou qing ma pao ("the dog asked the horse to run") and gou qing wo pao ("the dog asked me to run") to show the special status of an object pronoun (brackets indicate sandhi domains).

15. gou qing ma pao
dog ask horse run
   (3 3) (3 3) Underlying Tone
   2 3 2 3 Surface Tone

In (15), the first two syllables form one domain and the last two syllables form another domain. In both domains the second tone triggers the sandhi of the first tone, but remains unchanged itself. Hence the surface tonal pattern (23)(23).

16. gou qing wo pao
dog ask me run
   (3 3 3 3) Underlying Tone
   2 2 2 3 Surface Tone

In (16), unlike (15), the four Tone-3 syllables cannot be divided into two disyllabic domains. The only difference between (15) and (16) is that (15) involves an object NP whereas (16) involves an object pronoun. As a pronoun, wo in (16) loses its independent status in counting the syllables to form the domains. Wo is cliticized to the verb qing and they are counted as a single syllable. Thus gou and qing-wo form a “disyllabic” foot. Now the last syllable pao is left alone. Since a degenerate foot is

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6. In other words, the scrambling would be string-vacuous.
7. The neutral tone is typically associated with the lack of stress in Chinese. In other words, a neutral toned syllable is unstressed.
not allowed in Mandarin, \textit{pao} joins \textit{gou qing-wo} and they form a super foot (Shi 1986; or jumbo foot in Hsiao's (1990) term). In this way there is only one sandhi domain. Hence the surface tonal pattern (2223).

The above are the two pieces of evidence I provided for the clitic status of an object pronoun.

**2.2 CO is non-reduplicant and NP is non-pronoun**

When the CO is not a reduplicant of the verb and when the NP is not a pronoun, two orderings are allowed between the CO and the NP. I give an example in (17a-b).

\begin{enumerate}
\item a. \textit{kan Xiaoli yi-yan} \\
look Xiaoli an-eye “have a look at Xiaoli”
\item b. \textit{kan yi-yan Xiaoli} \\
look an-eye Xiaoli “have a look at Xiaoli”
\end{enumerate}

In (17a) the object \textit{Xiaoli} appears next to the verb and the CO \textit{yi-yan} appearing further away; in (17b) the order is switched, with the CO \textit{yi-yan} appearing next to the verb and the other object \textit{Xiaoli} further away. Both orderings are acceptable. Furthermore, the two orderings do not involve any difference in meaning, nor do they appear in different discourse contexts. In other words, the two different orderings are simply optional. This contrasts with the case where the theme of the verb is a pronoun, where only the equivalent of (a) is found, as we saw in section 2.1.

The free ordering as in (17) is prevalent in Chinese. Next I illustrate how the two meaning-vacuous orderings surface from their D-structure. (18) is the D-structure, with the theme \textit{Xiaoli} appearing in the Specifier position and the CO \textit{yi-yan} appearing in the Complement position.

\begin{enumerate}
\item (18) \\
\begin{tikzpicture}[level distance=1.5cm, level 1/.style={sibling distance=3.5cm}]
  \node {VP}
    child {node {NP}
        child {node {Xiaoli} edge from parent node[above left] {kan look}}
        child {node {V
            child {node {yi-yan an-eye}}}}
      child {node {NP}}}
\end{tikzpicture}
\end{enumerate}

Then the verb \textit{kan} moves out of VP, resulting in the surface order in (17a) \textit{kan Xiaoli yi-yan}, as shown in (19). This is equivalent to the derivation proposed for a verb with a pronominal theme.
Now the question is how we account for the other ordering in (17b) kan yi-yan Xiaoli. The two objects Xiaoli and yi-yan have switched places, with the CO yi-yan appearing adjacent to the verb, in front of the theme object Xiaoli.

Given the fact that the orderings in (17b) and (17a) are meaning-vacuous and optional, I propose that the Complement yi-yan in (18) scrambles out of VP, leading to the structure in (20):

Then the verb moves out the lower VP, resulting in the surface ordering in (17b).

Interestingly, this scrambling of the Complement is found in Chinese not only in the double object constructions, but also in dative constructions. I give an example in (22a-b).

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9 Scrambling means optional movement here and hereafter.
10 The verb movement can also precede scrambling. The ordering between them is not fixed. The same holds hereafter.
22. a. song yi-ben-shu gei-Lisi
give a-book to-Lisi “give a book to Lisi”

b. song gei-Lisi yi-ben-shu
give to-Lisi a-book “give Lisi a book”

In (22a) the theme yi-ben-shu precedes the goal PP gei-Lisi. In (22b) such ordering is switched, with the goal PP gei-Lisi preceding the theme yi-ben-shu. (23) is the D-structure for (22a-b).

23. VP
    NP
    yi-ben-shu a-book
    V'
    V
    song
    PP
    gei-Lisi
to-Lisi

The verb moves out of VP, creating the surface ordering in (22a), as shown in (24).

24. V
    VP
    song
    NP yi-ben-shu a-book
    V'
    gei-Lisi
to-Lisi

Now how does the ordering in (22b) surface from (23)? Similarly the PP gei-Lisi first scrambles out of VP, and then V moves out of VP, as shown in (25).

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11 Prepositional phrases in Chinese have the form P NP/Pron, i.e., a preposition followed by a noun phrase or a pronoun.
(26) is the surface structure for (22b).

A similar proposal of scrambling to the one here can be found in Kayne’s 1994 treatment of the so-called heavy NP shift in English. According to Kayne 1994, for a sentence like *John gave to Bill all his linguistics books*, the D-structure would be (following Larson 1988 for dative structure):

Then the Complement PP scrambles out of VP, ending up in a position between the verb *give* (once it raises) and the theme *all his linguistics books*, as in (28).
28.

Hence the sentence *John gave to Bill all his linguistics books*.  

Above I have discussed two constructions in Chinese which involve scrambling, i.e., the double object construction V CO NP and the dative construction V NP PP. Next I will examine another Chinese construction in which scrambling does not happen. By comparing the three constructions, I will propose a preliminary structural constraint regarding what can scramble in Chinese. (29) is an example of the third construction I examine.

29. song Lisi yi-ben-shu give Lisi a-book “give Lisi a book”

(29) is a double object construction, with the goal NP *Lisi* and the theme NP *yi-ben-shu*. I follow Larson’s 1988 treatment of similar structures in English and assume the following D-structure for (29).

30.

In (30) the goal *Lisi* is base-generated as sister to V’ and the theme *yi-ben-shu* is base-generated as a V’ adjunct. Then the goal *Lisi* moves to become the derived VP "subject" and the verb moves out of VP, resulting in the surface order in (29) *song Lisi yi-ben-shu*, as shown in (31).

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12 Notice in English dative constructions, the PP scrambles only when the theme is heavy. There is no such constraint in Chinese dative constructions. That is, the PP can scramble no matter whether the theme is heavy or not (see 20a-b).

13 The double object construction here V NP$_1$ NP$_2$ differs from the double object construction V CO NP in that the former does not involve a cognate object.
Now one might suggest that the NP $yi$-$ben$-$shu$ might further scramble out of the lower VP and end up in a position between $song$ and $Lisi$, creating the surface form $*song$ $yi$-$ben$-$shu$ $Lisi$, as shown in (32):

The illformedness of a structure like $*song$ $yi$-$ben$-$shu$ $Lisi$ indicates that scrambling in (32) is not allowed. Why? If we compare the two structures in which scrambling does happen (20 and 25) with the structure here (32), we see that in (20) and (25), the scrambled part is the Complement of the verb and so is $\theta$-governed; in (32) the part that cannot scramble is the Adjunct and so is not $\theta$-governed. In view of this, I propose the following structural constraint on scrambling in Chinese:

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14 It would be interesting to test whether the Specifier $Lisi$, which is also $\theta$-governed, can scramble. However, such a test seems to be impossible for Chinese since whether the Specifier scrambles or not, there is no difference in surface ordering between the Specifier and the Complement -- the Specifier precedes the Complement without scrambling. If it turns out that the Specifier could not scramble, then one would need to revise our $\theta$-government constraint to involve lexical government within a branching node.
33. The trace of the scrambled constituent must be $\theta$-governed.\(^{15}\)

To summarize Section 2.2, I have examined the ordering when the CO is not a reduplicant and the NP is not a pronoun. I have proposed a scrambling analysis to account for the alternate orderings in these structures. I have also proposed a preliminary structural constraint on scrambling in Chinese.

### 2.3 CO is reduplicant and NP is non-pronoun

When the CO is a reduplicated form of the verb and the NP is not a pronoun, the CO must appear next to the verb, with the NP further away from the verb. I show this in (34).

34. \texttt{kan yi-kan Xiaoli}
   \texttt{look a-look Xiaoli} \quad “have a look at Xiaoli”

The reduplicated CO \texttt{yi-kan} has to appear next to the verb; the NP \texttt{Xiaoli} has to appear further away. Switching the ordering between them is not allowed, as shown in (35).

35. \texttt{*kan Xiaoli yi-kan}
   \texttt{look Xiaoli a-look} \quad “have a look at Xiaoli”

\textit{Yi-kan} cannot be separated from the verb \texttt{kan} by \texttt{Xiaoli}.

Notice the pattern of ordering here is different from the orderings discussed in both Section 2.1 and Section 2.2. In 2.1, when the NP is a pronoun and the CO is a non-reduplicant, the CO can only appear further away from the verb; in 2.2, when the NP is not a pronoun and the CO is not a reduplicant, the CO can appear either next to the verb or further away from the verb. In other words, in both cases the non-reduplicated CO can stay further away from the verb. However, here in (34) and (35) we see that the CO has to appear next to the verb; it cannot appear non-adjacent to the verb. Why? I propose this is due to the special syntactic status of the reduplicated CO. More specifically, a reduplicated CO is not an NP, contrary to the assumption of Chao 1968.\(^{16}\) Rather it is part of a reduplicated verb; a reduplicated CO and the verb together form a \textit{V˚}.

The first piece of evidence for this proposal comes from a constraint on the types of verbs that can take a reduplicated CO. That is, only \textbf{monosyllabic} verbs can take a reduplicated CO in the form \textit{V-one-V};\(^{17}\) disyllabic verbs cannot (\textit{*V-one-V})\(^{18}\) (Li and Thompson 1981; Chiang 1991; Shao 1996). I show this in (36a-b).

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\(^{15}\) A comparison with scrambling in Japanese shows that the trace of the scrambled constituent does not have to be $\theta$-governed in Japanese (Saito 1985; Tsujimura 1996). That is, both a Complement and an Adjunct can scramble in Japanese.

\(^{16}\) He does not argue for this assumption.

\(^{17}\) Moreover, the monosyllabic verbs have to be volitional. I will address this point below.

\(^{18}\) There are some exceptions, as will be discussed below.
36. a. Monosyllabic
   kan yi-kan xue yi-xue xi yi-xi sao yi-sao
   look a-look learn a-learning wash a-wash sweep a-sweep

   b. Disyllabic
   *yan-jiu yi-yan-jiu *da-sao yi-da-sao
   study a-study clean a-cleaning
   *diao-cha yi-diao-cha *di-gu yi-di-gu
   survey a-survey murmur a-murmur

   In (36a), monosyllabic verbs kan, xue, xi, and sao can take a reduplicated CO (in the form V-one-V); in (36b), disyllabic verbs yan-jiu, da-sao, diao-cha, and di-gu cannot take a reduplicated CO (*V-one-V).

   There are some apparent disyllabic verbs which do allow a reduplicated CO. These are some V-N compounds, in which the first syllable is a verb and the second syllable is its nominal object. In these cases, a reduplicated CO is possible. However, it is a reduplicant of just the V (not V and N), and it intervenes between the V and the N (Li and Thompson 1981; Chiang 1991; Shao 1996). This is shown in (37).

   37. li-fa --> li-yi-li-fa xi-lian --> xi-yi-xi-lian
      cut-hair cut-a-cut-hair wash-face wash-a-wash-face

   The verb morphemes li and xi take a reduplicated CO yi-li and yi-xi respectively.

   If reduplicated COs are noun phrases, as argued for non-reduplicated COs in 2.1 and 2.2, it is difficult to explain why these COs have the requirement on the number of syllables of the verb. In other words, why can monosyllabic verbs take a cognate object NP while disyllabic verbs cannot? This problem can easily be solved if reduplicated COs are regarded as words, not phrases, as shown below.

   I propose that verbs taking a reduplicated CO can be regarded as involving a verb reduplication process. I take kan-yi-kan as an example to show this process.

   38. a. Base: kan
   b. Reduplication: kan-kan
   c. Affixation: kan-yi-kan

   First the base verb kan is reduplicated, producing kan-kan. Then affixation inserts yi between the two kans, producing kan-yi-kan. Similarly a disyllabic V-N compound verb can also be reduplicated in this way (see 37).

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19 While yan-jiu, da-sao, and diao-cha each involves two morphemes, di-gu is only one morpheme. This means that the constraint that disyllabic verbs do not take a reduplicated CO cannot be a morphological one, which says that bimorphemic verbs do not take a reduplicated CO whereas monomorphemic verbs do.

20 Affixation is not a phenomenon which only happens here. It can be found in other reduplication processes in Chinese. For example, in the adjective reduplication hu tu -> hu li hu tu, li (literal meaning “inside”) is also an affix (Chao 1968; he actually called it infix). I should point out here that (36) is only a suggested process of reduplication. The following two alternative processes are not impossible.

   1) a) Base: kan
      b) Suffixation: kan-yi
39.  a. Base: li-(fa)
b. Reduplication: li-li-(fa)
c. Affixation: li-yi-li-(fa)

First the verb morpheme *li* is reduplicated, producing *li-li-fa*; then affixation inserts *yi* between the two *lis*, producing *li-yi-li-fa*.

Now if we compare the number of syllables before and after reduplication+affixation, we find that a monosyllabic verb increases to three syllables (see 36a); a disyllabic V-N compound verb increases to four syllables (see 37). A disyllabic verb which is not a V-N compound would increase to five syllables (see 36). I summarize this pattern in (40).

41. 1 syllable --> 3 syllables
    2 syllables (V-N compound) --> 4 syllables
    2 syllables --> *5 syllables

Interestingly if we look at Chinese words, we find that most of them are disyllabic or trisyllabic, and they are maximally quadrisyllabic. Thus we can argue that monosyllabic and disyllabic V-N compound verbs can be reduplicated and infixed because the new words produced are within the normal number of syllables (3 and 4 respectively); disyllabic verbs which are not V-N compounds cannot because the new words produced would exceed the number of syllables a Chinese word can normally accommodate. In this way the asymmetry between monosyllabic and disyllabic words in their ability to take a reduplicated CO can be accounted for.

The second piece of evidence that reduplicated COs are words rather than phrases comes from the requirement that the verb be volitional in both verb reduplication and reduplicated COs. In verb reduplication, only volitional verbs can have reduplicated forms; nonvolitional verbs cannot (Li and Thompson 1981; Chiang 1991; Shao 1996). I give some examples in (41a-b).

41. a. Volitional
    chi-chi         ting-ting         xie-xie         xi-xi
    eat-eat         listen-listen      write-write     wash-wash

   c) Reduplication: kan-yi-kan
2) a) Base: kan
   b) Prefixation: yi-kan
   c) Reduplication: kan-yi-kan

(1) involves suffixation and reduplication takes place rightward. The exact process of reduplication is not crucial here. The main point is that *kan-yi-kan* is a word, not a phrase.

21 Brackets indicate that the N morpheme *fa* is not part of the base of reduplication; rather it is part of the compound verb.

22 But these disyllabic verbs can be reduplicated in the form V-V (cf, V-one-V), such as *yan-jiu --> yan-jiu-yan-jiu* ("have a study") This is because without the affix *yi* ("one"), the new words thus produced have four, not five syllables; so they are acceptable.

23 Volitional verbs are defined as those that under normal circumstances imply volition on the part of the subject; nonvolitional verbs are defined as those that under normal circumstances imply the lack of volition on the part of the subject (Li and Thompson 1981).
b. Non-volitional
   *bing-bing  *ta-ta  *wan-wan  *san-san
   sick-sick  collapse-collapse  end-end  disappear-disappear

In (41a) the verbs are all volitional verbs and they can be reduplicated. In (41b) the verbs are nonvolitional verbs and they cannot be reduplicated.

Interestingly this requirement of volitionality is also found with verbs taking reduplicated COs. That is, only volitional verbs can take a reduplicated CO; nonvolitional verbs cannot. I show this in (42a-b).

42. a. Volitional
   kan yi-kan  ti yi-ti  shi yi-shi
   look a-look  kick a-kick  try a-try

b. Non-volitional
   *ta yi-ta  *bing yi-bing  *wan yi-wan
   collapse a-collapse  sick a-sickness  end an-end

In (42a), kan ("look"), ti ("kick"), and shi ("try") are all volitional verbs; so they each can take a reduplicated CO. In (42b), ta ("collapse"), bing ("sick"), and wan ("end") are not volitional verbs and they cannot take a reduplicated CO.

However, the requirement of volitionality is not found with verbs taking non-reduplicated COs. In other words, both volitional and nonvolitional verbs can take Types 2 and 3 COs. I show this in (43a-b) and (44a-b).

43. a. Volitional
   ti yi-jiao  xiang yi-sheng
   kick a-foot  sound a-sound

b. Non-volitional
   *shi yi-hui  *bing yi-hui
   try once  sick once

In (43a) the verb ti ("kick") is volitional and in (43b) the verb xiang ("sound") is nonvolitional; both of them take a Type 2 CO. Similarly, in (44a) the verb shi ("try") is volitional and in (44b) the verb bing ("sick") is nonvolitional; both of them take a Type 3 CO.

Now the question is, if reduplicated COs are treated as phrases in the same way as Types 2 and 3 COs, why must a verb taking a reduplicated CO be volitional while a verb taking a Type 2 or 3 CO need not? This problem is easily solved when reduplicated COs are treated as verb reduplication rather than phrases. That is, verb reduplication requires the verb be volitional (see 41a-b); since a reduplicated CO is the result of verb reduplication, it thus requires that the verb be volitional (see 42a-b).^24

Now I want to point out a fact which seems to contradict the word status of a reduplicated CO. If a reduplicated CO and the verb form one word, we would not

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^24 The V-V reduplication in (39) and the V-one-V reduplication in (40) can be regarded as two types of verb reduplication, with the former involving affixation and the latter not.
expect anything to intervene between them. However, we do have cases such as *kan-le-yi-kan* ("have a look"), in which *le*, an aspect marker, intervenes between *kan* and *yi-kan*. There are two questions concerning this fact. First, in the V-V type reduplication, the reduplicated verb such as *kan-kan* is commonly regarded as one word. However, *le* can also intervene in this word, such as *kan-le-kan*. In other words, in both V-V and V-one-V, *le* can intervene. It is possible that reduplicated words differ from nonreduplicated words in that their internal structure is not as tight and thus they allow certain syllables to enter. Second, the exact status of *le* in *kan-le-yi-kan* is not clear. Although it is most frequently used as an aspect marker, Fang 1992 actually treats *le* as part of the verb reduplication in the form V-le-(one)-V. For these two reasons, I set aside the challenge of *le* for the word status of a reduplicated CO.

Above I have argued that Type 1 COs are words rather than phrases. Now I give the structural representation of a Type 1 CO.

45. 

\[
\begin{array}{c}
V^* \\
\text{kan-yi-kan} \\
\text{look-a-look}
\end{array}
\]

Now I go back to the question raised earlier: why does a reduplicated CO always have to appear next to the verb? The answer is clear: since it is a reduplicated verb, it has to appear together with the verb as a lexical item. In this way the structure *kan-yi-kan* Xiaoli is not really a double object construction. I show the D-structure in (46).

46. 

\[
\begin{array}{c}
V' \\
\text{kan-yi-kan} \\
\text{look-a-look}
\end{array}
\]

This is a single object construction. The verb moves out of VP (either to Infl or to the head of V\text{max}; see footnote 4), and we get the ordering *kan-yi-kan* Xiaoli, as shown below.
When the CO is a reduplicant of the verb and the NP is a pronoun, the reduplicant CO always appears next to the verb, as in Section 2.3; the pronoun appears further away. I give an example in (48).

48. kan yi-kan ta
   look a-look him  “have a look at him”

The reduplicated CO yi-kan appears next to the verb kan, with the pronoun ta appearing further away. Switching ordering between yi-kan and ta is not allowed, as in (48).

49. *kan ta yi-kan
   look him a-look  “have a look at him”

The reduplicated CO yi-kan cannot be separated from the verb by the pronoun ta.

As I have discussed in Section 2.3, a reduplicated CO and the verb together form a single lexical item, i.e., a reduplicated verb. I give the deep structure of kan-yi-kan ta in (50).

50.

The verb moves out of VP. As has been discussed in Section 2.1, the pronoun ta is cliticized to the verb that has moved out, resulting in the following structure:
Hence the surface form *kan-yi-kan ta. Again since the CO yi-kan and the verb kan form one lexical item, they cannot be separated by the pronoun ta. Hence the unacceptability of *kan ta yi-kan.

To summarize Section 2, I have examined four situations concerning the ordering between the CO and the NP in the construction V CO NP. I have proposed a process of scrambling to account for the free ordering between the CO and NP in some cases. I have also argued that a reduplicated CO is not an NP but forms a lexical item together with the verb. This explains why a reduplicated CO is never separated from the verb, whether by an NP or by a pronoun. (52) is a summary of ordering in the construction V CO NP.

<table>
<thead>
<tr>
<th></th>
<th>CO non-reduplicant</th>
<th>CO non-reduplicant</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP non-pronoun</td>
<td>V CO NP</td>
<td>V CO NP</td>
</tr>
<tr>
<td></td>
<td>V NP CO</td>
<td></td>
</tr>
<tr>
<td>NP pronoun</td>
<td>V NP CO</td>
<td>V CO NP</td>
</tr>
</tbody>
</table>

3. Discussion and conclusion

In the previous section I have examined the ordering problem in the construction V CO NP. Three issues arise out of the ordering problem. First is the status of pronouns in Chinese. I propose that pronouns are clitics, which explains why a pronoun always has to appear next to the verb. The second issue is scrambling in Chinese. I argue that scrambling does occur in Chinese, both in the double object construction V CO NP and in the dative construction V NP PP. The third issue is the understanding of cognate objects in Chinese, which I will now discuss in more details.

The concept of cognate object was originally proposed for English. In the following example:

53. laugh a laugh

*a laugh* is regarded as the cognate object of the verb *laugh*. As a cognate object, *a laugh* 1) serves the delimitative function on the action of the verb, 2) bears the same form of the verb (hence the term "cognate"), and 3) is the syntactic object of the verb. Cognate objects in English are characterized by these three features.

However, these three features are not found at the same time in the so-called cognate objects in Chinese. (54) is a comparison between English and Chinese.

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1 COs</td>
<td>Types 2&amp;3 COs</td>
</tr>
<tr>
<td>Delimitative function</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Same form as verb</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Object of verb</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>
It can be seen that for Types 2&3 COs, although they serve the delimitative function on the verb and are object of the verb, they don't have the same form as the verb; for Type 1 COs, although they serve the delimitative function on the verb and bear the same form as the verb, they are not objects of the verb. In this way the concept of cognate object in English does not find an exact correspondent in Chinese. The reason why the three types of COs are called "cognate object" in Chinese seems to be their function: like cognate objects in English, these COs in Chinese also serve the delimitative function on the verb.

Another feature about Chinese cognate objects which differs from English is that transitive verbs can freely take a cognate object along with another object, as in the following example:

55. ti Xiaoli yi-jiao  
kick Xiaoli a-foot  "kick Xiaoli a foot"

In English, however, in the normal case, transitives or unaccusatives do not take a cognate object since their D-structure object position has already been filled (Massam 1990), as in the following two examples:

56. transitive  
*She ate the cake an eat.
57. unaccusative  
*John appeared a (sudden) appearance.

However, in certain cases, English ditransitive constructions with cognate objects are permissible, as seen below.

58. She walloped him a wallop.
59. He laughed me a hearty laugh.

Although (59) is different from (55) in that me is a Benefactor, not a Patient, (58) is exactly like (55): the verb takes a Patient object along with a cognate object. So it seems that it is not the case that ditransitive constructions with cognate objects are not possible in English, but rather, that such constructions are much more restricted in English than in Chinese. Another restriction similar to this is that an adjective is desired in a cognate object in English, whereas most cognate objects in Chinese do not involve an adjective. These differences raise interesting questions about the function of cognate objects cross-linguistically, which go beyond the scope of this paper.

To conclude this paper, I have examined the ordering in the double object construction V CO NP. The ordering is related to the different forms of the two objects and I have examined four different situations. In particular I have proposed a process of scrambling as well as a preliminary constraint on scrambling so as to account for the free ordering in some situations. I have also argued for the lexical status of a reduplicated CO, which nicely accounts for the relevant ordering phenomena.
References


