In Mandarin Chinese the two lexical items "de" and "bu," when inserted into a verb-verb construction, function as positive and negative potential markers, respectively. Their insertion, however, is not very regular or uniform, because some V-V constructions require their presence, while some others take them optionally, and still others do not occur with them at all. The purpose of this paper is thus twofold: first, to study their distribution, and second, to account for their co-occurrence or nonco-occurrence in the V-V constructions involved. It is claimed here that with the help of the semantic properties of the V-V constructions, we can easily predict where they can be inserted, and where they must be excluded. (Author)
1. Introduction.

One common surface phenomenon in Mandarin Chinese is a sequence of two verbs with one immediately following the other in a sentence. For example,

(1) a. he - zui
    drink - drunk

b. Ta he - zui
    he drink - drunk Asp
    'he has drunk to the extent that he gets drunk'

(2) a. pao - lai
    run - come

b. Ta pao - lai
    he run - come Asp
    'he has run in the direction of the speaker'

(3) a. zha - dao
    look for - arrive

b. Ta zha - dao
    he look for - arrive that book Asp
    'he has found that book'

This verb sequence has been in the past often called 'resultative verbs' [See A. Hashimoto (1963), S. Thompson (1973)] or 'causative verbs', or 'potential verbs', or 'verb-complement compounds' [See Chao (1968)]. Each of these terms is adequate for a number of such constructions, yet none is general enough to cover all of them.
So, we use the term verb-verb (hereafter V-V) construction. It is hoped that the term, being neutral with regard to its semantic implication, will be general enough to include all those verbal compounds. Almost all verbs can occur in the position of the first verb in the sequence, a rather limited number can occur in the position of the second. In general, the first verb, often an action verb or a motion verb, plays the main role in the sentence with the second indicating the result of the action, or the direction of the motion, or the availability of the thing affected by the first verb, etc. With regard to its sources, the V-V construction, like English nominal compounds, is an extremely complicated matter, and the scope of this paper will not allow us to go into its details. So we will touch upon only those points which bear direct relevance to the topic of this paper.

The two Mandarin lexical items de and bu, when inserted into a V-V construction, indicate the ability or inability of the person involved in doing or accomplishing something. While de indicates a positive capacity, bu shows a negative potentiality. Notice that they are only words of 'estimate' in the speaker's opinion, not of fact, so they are generally known as potential markers (hereafter PM). They can occur only in the position:

\[(4) \quad \text{Verb} - \{\text{de}\} - \text{Verb} - \{\text{bu}\} - \text{Verb}\]
This, however, does not mean that all V-V constructions can have either de or bu. In fact, some V-V constructions simply do not take them, while some others require their presence, and still others can have an optional de or bu. So the purpose of this paper is, at least, twofold: First, to make a distributional study of the two PM's, and second, to see if there is anything systematic, with regard to the semantic property or properties of the V-V construction involved, which correlates with their irregular syntactic behavior.

2. The V-V Construction Which Requires the Presence of the PM

All the V-V constructions in this group must have either qi or guo as the second member. The verbs which can occur as the first member with qi in the construction are exemplified by the following:

(5)

<table>
<thead>
<tr>
<th>verb</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>chi</td>
<td>'eat'</td>
</tr>
<tr>
<td>zhu</td>
<td>'live'</td>
</tr>
<tr>
<td>mai</td>
<td>'buy'</td>
</tr>
<tr>
<td>kui</td>
<td>'suffer a loss'</td>
</tr>
<tr>
<td>kan</td>
<td>'see'</td>
</tr>
<tr>
<td>pei</td>
<td>'indemnify'</td>
</tr>
<tr>
<td>zuo</td>
<td>'sit in a ride'</td>
</tr>
<tr>
<td>yun</td>
<td>'use'</td>
</tr>
<tr>
<td>nian</td>
<td>'study'</td>
</tr>
<tr>
<td>he</td>
<td>'drink'</td>
</tr>
<tr>
<td>du</td>
<td>'gamble'</td>
</tr>
<tr>
<td>hua</td>
<td>'spend'</td>
</tr>
</tbody>
</table>
In other words, chi qi, zhu qi, mai zi, etc. are all unacceptable forms. Qi literally means 'rise', but it apparently does not have any connection with the qi in the special V-V construction in question here. So we will have to treat the latter simply as another lexical item which happens to be homophonous with the qi meaning 'rise'. Checking through the data in (5), we find that chi de qi means 'can afford to eat', chi bu qi means 'cannot afford to eat'; zhu de qi means 'can afford to live (in a certain place)', zhu bu qi means 'cannot afford to live (in a certain place)'; etc. The qi as the second member in the construction has a consistent meaning 'afford'. At first glance, the verbs listed in the left column in (5) do not seem to have anything in common, but now with qi meaning 'afford', we can see that all of them involve the use of money. They differ from each other only in the specific way of using the money. Hence the first member in this particular V-V construction can be represented by

(6)

Verb \( m \) - \( \{ \text{de} \} \) - qi

The index of the verb indicates that this is a set of verbs, all of which involve the use of money. The productivity of the construction is further confirmed by the following examples involving the use of some other verbs.
However, there are two exceptions which also involve either de or bu plus qi, and yet they have nothing to do with money. They are given below:

(8)

<table>
<thead>
<tr>
<th>Expression</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>kan de qi</td>
<td>'look up to (someone)'</td>
</tr>
<tr>
<td>kan bu qi</td>
<td>'look down upon (someone)'</td>
</tr>
<tr>
<td>dui de qi</td>
<td>'do not feel sorry to (someone)'</td>
</tr>
<tr>
<td>dui bu qi</td>
<td>'feel sorry to (someone)'</td>
</tr>
</tbody>
</table>

Cases like those in (8) are limited and by no means productive, so they must be listed as individual items in the lexicon and be treated only as idioms.

2.1. Possible Sources for the V-V Construction in Question

Since the V-V construction with qi as the second member is a very productive process, and since either de or bu must appear with the construction on the surface level, the question then arises: Are they transformationally derived or do they exist in the deep structure? Take (9) for instance:

(9) Ta chi de/bu qi yu

He/She can/cannot afford fish

What is the underlying structure of (9), and how is this sentence derived?
Let us first assume that the V-V construction in (9) is transformationally derived and that the PM is later inserted into it by a rule called Potentialization. That is to say, (9) will have an underlying structure like (10) in which the PM will not appear.

(10)

```
S
|   |
| NP | Pred |
|    |
S
|   |
| NP | Pred |
|    |
  ta V NP |
    |     |
  chi yu
```

It is obvious that we need first to lower the higher verb qi and adjoin it to the lower verb chi, since Potentialization will operate only when there is a V-V construction available. We might posit a Dedicate-Lowering rule to do the job. The problem is: What kind of constraint can we impose on the application of a rule like this? If we list qi, a higher verb in the underlying structure, as the condition, then the usefulness of the rule is very limited; it will be an ad hoc rule at most. If we make it applicable to all higher verbs, then the rule will become too powerful, and will produce anomalous strings. What is more damaging
to this approach is the fact that the predicate qi does not carry any acceptable semantic interpretation when taking a sentential subject such as illustrated in (10). And furthermore, potentialization must be marked as an obligatory rule when the second member of the V-V construction involved is either qi or guo. Thus, the hypothesis to derive (9) from (10) seems to be unfeasible.

If we posit that the PM does exist in the underlying structure such as (11) or (12), we still face the same problem as we do when we have (10) as the underlying structure for (9), plus something else, such as: Shall we posit the PM as the highest predicate in the underlying structure (see (11)), or shall we put the PM and qi under the same predicate (see (12))? (11)

```
S
  NP
  S
  NP
  S
  NP
ta
  V
  NP
```
Either way we will have problems.

S. Thompson (1973) claims that resultative verbs in Mandarin Chinese are morphologically complex verbs which are best accounted for as being derived by a small set of lexical rules, rather than by syntactic transformations. Her Lexical Potentialization Rule for RV's are given below:

\[
[V-V]_{RV} \rightarrow \begin{cases} 
  a. & [V - de - V]_{RV} \\
  b. & [V - bu - V]_{RV} 
\end{cases}
\]

(obligatory if \( V \) is \( -qi, -guo \))

Though I do not quite agree with her concerning the term 'Resultative verbs' to cover all the V-V constructions which can appear in the potential mode, her lexical rule seems to be able
to bail us out in the derivation of a sentence like (9). According to Thompson, (9) will have an underlying structure like

\[(14)\]

\[
\begin{array}{c}
S \\
\mid \\
NP \\
\mid \\
Pred \\
\mid \\
\mid ta \\
\mid y \\
\mid \chi [de] \chi \\
\mid \chi bu \chi \\
\mid yu \\
\end{array}
\]

in which the V-V construction with the PM is derived by the lexical rule (13), and thus it does not involve any syntactic transformation at all. As we are all well aware that a grammar is a tightly organized system, a modification of one part generally involves widespread modifications of other parts. Here we see a case where the enrichment of a lexical rule permits simplification of syntactic transformation. The proper balance between various components of the grammar is basically an empirical issue, hence her lexical rule seems to be justified in helping greatly simplify the derivation of the V-V construction in question.

2.2. The V-V Construction with Guo as the Second Member

Like qi, guo in this position carries a specific meaning
'surpass', so it should not be confused with another homophonous
\text{guo} functioning as an aspect marker in the language. The first
verb in this particular \text{V-V} construction is usually an action
verb, since only in an action can one compete with another, and
since only by competing can one expect to find out whether or
not he has the potentiality to surpass the other. Some of those
verbs are given below:

(15)
\begin{align*}
xie & \quad \text{'write'} \\
chang & \quad \text{'sing'} \\
shuo & \quad \text{'speak'} \\
mai & \quad \text{'buy'} \\
da & \quad \text{'fight'} \\
ma & \quad \text{'scold'} \\
you & \quad \text{'swim'} \\
pao & \quad \text{'run'} \\
zou & \quad \text{'walk'} \\
tiao & \quad \text{'jump'} \\
du & \quad \text{'gambol'} \\
zu & \quad \text{'do'}
\end{align*}

Since all the verbs in the left column of (15) share the common
semantic property \(+\text{ACTION}\), we can generalize that all action
verbs can occur in that position, and reformulate (15) as (15)A.

(15)A
\begin{align*}
\text{Verb}_{\text{action}} & \quad \{\text{de}\} - \text{guo} \\
\text{Verb}_{\text{action}} & \quad \{\text{bu}\} - \text{guo}
\end{align*}

The index of the verb indicates that this is a set of verbs, all
of which involve a certain type of action. Thompson's lexical
rule will also apply here.
3. The V-V Construction Which Takes an Optional PM

The V-V construction into which the PM can be optionally inserted, can be further classified into two subgroups: the productive group and the unproductive group.

The productive group includes the following:

(16) With a Directional Complement

A. The Dual-Direction Construction

<table>
<thead>
<tr>
<th>Directional Verbs</th>
<th>Directional Complements</th>
</tr>
</thead>
<tbody>
<tr>
<td>shang</td>
<td>'go up'</td>
</tr>
<tr>
<td>xia</td>
<td>'go down'</td>
</tr>
<tr>
<td>jin</td>
<td>'go into'</td>
</tr>
<tr>
<td>jin de</td>
<td>'come'</td>
</tr>
<tr>
<td>chu</td>
<td>'go out of'</td>
</tr>
<tr>
<td>chu bu</td>
<td>'go'</td>
</tr>
<tr>
<td>guo</td>
<td>'go across'</td>
</tr>
<tr>
<td>hui</td>
<td>'go back to'</td>
</tr>
</tbody>
</table>

B. A Motion Verb & a Dual-Direction Construction

<table>
<thead>
<tr>
<th>Motion Verbs</th>
<th>Directional Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>zou</td>
<td>shang</td>
</tr>
<tr>
<td>pao</td>
<td>xia</td>
</tr>
<tr>
<td>tiao</td>
<td>jin</td>
</tr>
<tr>
<td>you</td>
<td>chu</td>
</tr>
<tr>
<td>kai</td>
<td>guo</td>
</tr>
<tr>
<td>guan</td>
<td>hui</td>
</tr>
</tbody>
</table>

(17) With an Achievement Complement

<table>
<thead>
<tr>
<th>Achievement Verbs</th>
<th>Directional Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>kan</td>
<td>shang</td>
</tr>
<tr>
<td>zhao</td>
<td>xia</td>
</tr>
<tr>
<td>mai</td>
<td>jin de</td>
</tr>
<tr>
<td>che</td>
<td>chu bu</td>
</tr>
<tr>
<td>he</td>
<td>guo</td>
</tr>
<tr>
<td>zhu</td>
<td>hui</td>
</tr>
</tbody>
</table>

(18) With a Completing Complement

<table>
<thead>
<tr>
<th>Completing Verbs</th>
<th>Directional Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>xie</td>
<td>shang</td>
</tr>
<tr>
<td>da</td>
<td>xia</td>
</tr>
<tr>
<td>chi</td>
<td>jin de</td>
</tr>
<tr>
<td>he</td>
<td>chu bu</td>
</tr>
<tr>
<td>yun</td>
<td>guo</td>
</tr>
<tr>
<td>kán</td>
<td>hui</td>
</tr>
</tbody>
</table>
The list here is by no means exhaustive, but these verbs represent the most common V-V constructions which optionally take an PM. All these constructions are very productive in the sense that each set of verbs in the respective groups can be grouped together under a common semantic property. For example, (16) involves two distinctive types of direction verbs: the secondary direction verb (SDV) and the primary direction verb (PDV). The PDV consists of two lexical items, lai 'move in a direction toward the speaker' and qu 'move in a direction away from the speaker', while the SDV consists of six lexical items, with each specifying a certain direction. Any member in the SDV group can be combined with either member of the PDV group. The verbs in each group behave alike: Where one can occur the others can occur, too;
where one is barred, the others are also excluded. Thus, (16) can be reformulated as

\[(21)\]

\[
\text{SDV} - \left\{ \text{de} \right\} - \text{PDV}
\]

and (16)B as

\[(22)\]

\[
\text{Verb} \quad \text{motion} - \left\{ \text{de} \right\} - \text{the dual-direction construction}
\]

In (22), the dual-direction construction itself becomes a unit serving as the second member of the V-V construction in question. As long as the first verb is a motion verb, it should be able to occur in that position. However, there are a few motion verbs in the language, each of which takes only a particular dual-direction construction, such as those listed below:

\[(23)\]

- chen 'sink'
- shen 'rise'
- jiang 'parachute'
- tu 'vomit'
- chi 'eat'
- he 'drink'
- xia.qu 'go down'
- shang.qu 'go up'
- xia.lai 'come down'
- chu.lai 'come out of'
- xia.qu 'go down'
- xia.qu 'go down'

The reason is simply because each of them has a built-in direction to which the direction indicated by the directional complement in the construction must agree. In a similar manner,
(17) through (20) can be reformulated as (24) through (27), respectively.

(24) Verb\_action = \{de\} - \{dao\} \{zha\} o\)

(25) Verb\_action = \{de\} - wan

(26) Verb\_action = \{de\} - xia qu

(27) \begin{align*}
\text{Verb\_action} &= \{de\} - \{bu\} - \{\text{an appropriate descriptive} \\
& \quad \text{verb or an intransitive} \\\n& \quad \text{verb indicating a result} \\\n& \quad \text{of the action represented} \\\n& \quad \text{by the first verb
}
\end{align*}

Except for (27), the rest are rather straightforward. We might even try to collapse (24)-(26) into one rule as (28):

(28) \begin{align*}
\text{Verb\_action} &= \{de\} - \{bu\} - \{\{\text{dao}\} - \{\text{zha}\} o\} \{\text{wan} \} \{\text{xia qu}\}
\end{align*}

As for (27), there seems to be a certain cooccurrence restriction involved between the first verb and the second in each of such V-V constructions, and this is partly determined by the environment.
3.1. The Unproductive Group

The V-V constructions in this group can take an optional PM just as those mentioned in the previous section, but there is no common semantic property we can draw either from the first verb or from the second verb here. In other words, their distribution is very limited, and each combination is to be treated on an individual basis. They are exemplified by the following:

(29)

A. kao - shang
   take the test - on
   'pass the test'

kao - de - shang
   'to be able to pass the test'

kao - bu - shang
   'not to be able to pass the test'

B. tan - lung
   talk - close
   'get close by talking'

tan - de - lung
   'to be able to get close to each other by talking'

tan - bu - lung
   'not to be able to get close to each other by talking'

C. kan - jian
   see - meet
   'saw'

kan - de - jian
   'to be able to see'

kan - bu - jian
   'not to be able to see'
4. The V-V Constructions Which Do not Cooccur with the PM

In the previous sections we have discussed two major types of V-V constructions, each of which either requires the presence of a PM or takes it optionally. In this section we will deal with only those V-V constructions which do not cooccur with any PM. They can, roughly, be divided into the following three subgroups:

4.1. The V-V Construction with the Second Member Functioning as the Main Verb and the First Member as a Modifier

In a sentence as given in (30), the relation of the two verbs in the construction is quite different from those of the other V-V constructions we have studied above.

(30) Ta tou mai shu.
he steal buy book
'he bought the book(s) in a stealthy manner'

Notice that there are two things worth paying attention to in (30). First, the second verb mai plays the role of the main verb here --- a phenomenon not seen in other V-V constructions. Second, the first verb tou has lost its original meaning 'steal', and is used metaphorically here to modify the whole sentence. It would be treated as an idiom if this were the only case. The fact that quite a few other verbs can follow tou in a similar manner makes one wonder whether they are not transformationally derivable.

All those given in (31) are good V-V constructions:
The suspicion that they might be transformationally derived is strengthened by the similar cases involving some other verbs such as those given in (32):

(32)

ji 'memorize'
bian 'debate'
jie 'borrow' 'in a forcible manner'
a. qiang 'sell' 'rent'
zhu 'memorize'
b. si 'study' 'get close' to'
chan 'in a persistent manner but without reasoning'
c. an 'hurt' 'in the dark'
shan 'play trick on'
d. ying 'demand' 'rob'
yao 'do' 'in a forcible manner'
zan 'in a stealthy manner'
qiang 'in a persistent manner'
The four first verbs in (32), meaning 'strong', 'die', 'dark', 'hard', respectively, have all lost their original meaning, and function here as a modifier in a way similar to those in (31). If the original meanings of these words been kept, none of the construction would have been acceptable as a good V-V construction.

4.2. The V-V Construction Which Refers to Only One Action

The following construction, although each consists of two verbs, refer to only one action. As a rule, they cannot take any PM.

(33)

you - wan
play - play
'play'

tao - lung
beg - discuss
'discuss'

chao - xie
copy - write
'copy'

gao - su
tell - complain
'inform'

chi - jing
eat - surprise
'be surprised'

Thus, the sequences in (34) are all unacceptable.

(34)

*you - de - wan
*you - bu - wan
4.3. The V-V Constructions in Which Both Members Play an Equally Important Role

Another type of V-V constructions which does not permit the insertions of the PM include the following combinations:

(35)

<table>
<thead>
<tr>
<th>Verb 1</th>
<th>Verb 2</th>
<th>Continuous Verb Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>chi</td>
<td>he</td>
<td>'eat and drink'</td>
</tr>
<tr>
<td>eat</td>
<td>drink</td>
<td>'eat and drink'</td>
</tr>
<tr>
<td>ge</td>
<td>wu</td>
<td>'sing and dance'</td>
</tr>
<tr>
<td>sing</td>
<td>dance</td>
<td>'sing and dance'</td>
</tr>
<tr>
<td>chang</td>
<td>you</td>
<td>'sing and play'</td>
</tr>
<tr>
<td>sing</td>
<td>play</td>
<td>'sing and play'</td>
</tr>
<tr>
<td>ting</td>
<td>xie</td>
<td>'listen and write'</td>
</tr>
<tr>
<td>listen</td>
<td>write</td>
<td>'listen and write'</td>
</tr>
<tr>
<td>da</td>
<td>ma</td>
<td>'beat and scold'</td>
</tr>
<tr>
<td>beat</td>
<td>scold</td>
<td>'beat and scold'</td>
</tr>
</tbody>
</table>
These constructions generally refer to two independent actions. The two actions might take place simultaneously or in a close sequence, and there is really no way to tell which one is playing the main role in the examples given above. They are equally important in the sense that one is not modifying the other. Thus no PM can be inserted.

(36)

*chi - de - he
*chi - bu - he

*ge - de / wu
*ge - bu - wu

*chang - de - you
*chang - bu - you

*ting - de - xie
*ting - bu - xie

*da - de - za
*da - bu - za

5. Conclusion

This study reveals a number of important things with regard to the distribution of the two PM's in Mandarin:

(37)

A. The two PM's in the language, de and bu, can each occur only between the two verbs in the V-V construction in the language.

B. Not all the V-V constructions in the language can take the PM. Some require the presence of the PM on the surface level, while others take it optionally, and still some others do not tolerate the PM.
C. The irregular distribution of the PM in the V-V construction can be best accounted for in terms of the semantic role played by the first member and the second member in the construction, respectively. And this can be summarized as in (38).

(38)

A. Only those V-V constructions in which the first verb plays the main role in the predicate phrase can take the PM.

B. If the second member of the V-V construction is ăi or ăgu, meaning 'afford' and 'surpass', respectively, then the PM is required in the surface level. This seems partly due to the semantic properties of the two second members involved, since it is only natural to say 'can afford' or 'cannot afford', and 'can surpass' or 'cannot surpass'.

C. If the second member of the V-V construction indicates a result, or a direction, or the availability of the thing affected by the first verb, etc., the PM can be optionally inserted into the construction.

D. If any of the situations listed below occurs in the V-V construction, then no PM will be allowed to appear there.

1. The second member of the V-V construction plays the main role, semantically, with the first member functioning as a modifier of the second.

2. The V-V construction indicates one action, with no complement indicating any result, or direction, or the availability of the thing affected by the action.

3. Each of the two verbs in the V-V construction refers to an independent action. They might occur simultaneously or in close sequence. Neither the first nor the second is playing the main role of the predicate phrase.
FOOTNOTES

1. The transcription system used here is Pin-Yin. The tone marks are neglected here due to irrelevance to the topic.

2. Dao 'arrive' as the second member of the V-V construction here serves as an achievement marker, indicating that the action represented by the first verb has been successful.

3. To my knowledge, only stative verbs cannot occur as the first member of the V-V construction. For example,

   (1) Ta mang - bing le,
       he busy - sick Asp
       'he became sick because of being busy'

   (2) Ta gao - bing le,
       he tall sick Asp
       'he became sick because of being tall'

4. See Robert Lees (1960)

5. A number of linguists have advocated the transformation hypothesis in contrast with the phrase-structure hypothesis to refer to the derivation of nominal compounds, verbal compounds, or conjoined structures. They have regarded all those constructions as derived from an underlying complex structure by transformations, while advocates of the latter hypothesis think that those constructions are not derived transformationally, but rather exist in the deep structure. There is, however, some difference between the early transformation hypothesis and the recent transformation
The difference lies in the fact that the early hypothesis is too strong without any semantic constraint, while the recent hypothesis advocates constraints.

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