

# THE WORD ORDER OF THE DIRECTIONAL SERIAL VERB CONSTRUCTION IN MANDARIN CHINESE

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## Abstract

This paper investigates the word order alternation demonstrated by the directional serial verb construction (DSVC) in Mandarin Chinese. It is observed that the word orders differ in some syntactic and semantic properties, hence are not freely interchangeable. The paper proposes two types of merge structures underlying the different word orders, specifically, a resultative structure and a double VP structure. All the syntactic and semantic divergences observed in the word orders can be derived with this approach.

## 1. Introduction

Mandarin Chinese is a language rich in serial verb constructions. The focus of this paper is on a special type of them, which I term as ‘directional serial verb construction’ (DSVC). A DSVC consists of a string of verbs ‘ $V_1V_2$ ’ in which  $V_1$  denotes motion/displacement while  $V_2$  denotes the direction of  $V_1$ . DSVCs can be divided into three types according to the direction that  $V_2$  denotes (Li & Thompson 1981).

Type 1:  $V_2$  denotes deictic direction. There are only two of them: *lai* ‘come/towards the speaker’ and *qu* ‘go/away from the speaker’.

- (1) Ta song lai tang le.  
he send come soup SFP<sup>1</sup>  
‘He brought the soup.’

Type 2:  $V_2$  denotes non-deictic direction. There are eight verbs in this group: *shang* ‘ascend/up’, *xia* ‘descend/down’, *jin* ‘enter/into’, *chu* ‘exit/out of’, *qi* ‘rise/up’, *hui* ‘return/back’, *guo* ‘cross/over’, *kai* ‘open/apart-away’.

- (2) Ta zou shang le louti.  
he walk ascend ASP stairs  
‘He walked up stairs.’

Type 3:  $V_2$  is a directional verb cluster composed of a non-deictic and a deictic directional verb. Traditionally, the directional verb cluster is viewed as a compound. A hyphen is used to connect the morphemes within the compound.<sup>2</sup>

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<sup>1</sup> There are two *les* in the literature, the aspect marker *le* which immediately follows a verb, and the sentence final particle *le* which occurs at the end of the sentence. However, whether the *le* following an intransitive verb at the end of the sentence is an aspect marker or a sentence final particle or both remains a puzzle. In this paper I will gloss *le* at the end of a sentence that does not end with a verb as SFP (sentence final particle), and gloss *le* directly following a verb (including verbs in the middle of the sentence and those at the end of the sentence) as ASP.

<sup>2</sup> Some readers may question the compound status of the cluster *shang lai* and argue that they are two independent verbs. I will argue in Section 4 that the directional verb cluster is indeed a compound.

- (3) Ta zou shang-lai le.  
 he walk ascend-come ASP  
 'He walked up (towards the speaker).'

## 2. The Puzzle

### 2.1. The Word Order Alternation

Li and Thompson (1981) and many traditional descriptive linguists have noticed that different word orders are possible when constructing a DSVC. I illustrate the word order alternation allowed for each type of DSVC below, with a word order schema in the bracket at the end of each example ( $V_m$  = motion/displacement verb,  $V_d$  = directional verb):

The type 1 DSVC allows two word orders.

- (4) a. Ta song lai le tang. ( $V_m V_d O$ )  
 he send come ASP soup  
 b. Ta song le tang lai. ( $V_m O V_d$ )  
 he send ASP soup come  
 'He brought the soup.'

The type 2 DSVC allows only one order.

- (5) a. Ta zou shang le louti. ( $V_m V_d O$ )  
 he walk ascend ASP stairs  
 b. \*Ta zou le louti shang. ( $V_m O V_d$ )  
 he walk ASP stair ascend  
 'He walked up stairs.'

The type 3 DVSC allows three word orders.

- (6) a. Ta song jin-lai le tang. ( $V_m V_d-V_d O$ )  
 he send enter-come ASP soup  
 b. Ta song le tang jin-lai. ( $V_m O V_d-V_d$ )  
 he send ASP soup enter-come  
 c. Ta song jin le tang lai. ( $V_m V_d O V_d$ )  
 he send enter ASP soup come  
 'He brought the soup into here.'

What interests us is the word alternations shown by the type 1 and 3 DSVCs. The examples above are representative of the previous literature. The divergences between the word orders in (4) and (6) respectively receive no further investigation. The examples seem to suggest that the order alternations are equivalent. However, on closer investigation, these word order alternations reveal some syntactic and semantic differences, hence are not equivalent. I illustrate this point from three perspectives: compatibility with a locative object, position of aspect marker *le* and telicity reading.

### 2.2. The Syntactic and Semantic differences between the Word Orders

The first difference is the compatibility with a locative NP object. Specifically, in the case of the type 1 DSVC, when the object denotes a location, only the  $V_m O V_d$  order is available while the  $V_m V_d O$  order becomes ungrammatical.

- (7) a. shang shan lai  
ascend mountain come  
b. \*shang lai shan  
ascend come mountain  
'come up the mountain (towards the speaker)'

- (8) a. chu xuexiao qu  
exit school go  
b. \*chu qu xuexiao  
exit go school  
'go out of the school (away from the speaker)'

In the case of the type 3 DSVC, only the  $V_m V_d O V_d$  order is grammatical.

- (9) Ta zou shang shan lai.  
he walk ascend mountain come  
'He walked up the mountain (towards the speaker).'

- (10) \*Ta zou shang-lai shan.  
he walk ascend-come mountain

- (11) \*Ta zou shan shang-lai.  
he walk mountain ascend-come

The second difference lies in the distribution of the aspect marker *le*. *le* is traditionally viewed as a perfective aspect marker which occurs after verbs to indicate that the action has been realized.<sup>3</sup> *le* is not always allowed to occur after all the verbs in the five orders .

- (12) Ta song (\*le) lai le tang. (V<sub>m</sub> \*le V<sub>d</sub> le O)  
he send \*ASP come ASP soup  
'He sent the soup here.'

- (13) Ta song (le) tang lai (le). (V<sub>m</sub> le O V<sub>d</sub> le)  
he send ASP soup come ASP  
'He sent the soup here.'

- (14) Ta song (\*le) jin (\*le) lai (le) tang. (V<sub>m</sub> \*le V<sub>d</sub> \*le V<sub>d</sub> le O)  
he send \*ASP enter \*ASP come ASP soup

- (15) Ta song (le) tang jin (\*le) lai (le). (V<sub>m</sub> le O V<sub>d</sub> \*le V<sub>d</sub> le)  
he send ASP soup enter \*ASP come ASP

- (16) Ta song (\*le) jin (le) tang lai (le). (V<sub>m</sub> \*le V<sub>d</sub> le O V<sub>d</sub> le)  
he send \*ASP enter ASP soup come ASP

The third difference is with regard to telicity. Telicity is one of the properties which are used to distinguish Vendler's (1967) four situation types. Basically, a telic event has a

<sup>3</sup> The *le* mentioned here only includes aspect marker *le*, namely, the ones immediately following a verb, which I gloss as ASP. Sentence final particle *le* is not relevant to the discussion.

natural finishing point, like ‘eat an apple’, ‘run a mile’. Any event which does not have a natural finishing point is atelic, like ‘walk’, ‘push a cart’. Different word orders appear to result in different telicity. Consider the following:

- (17)a. Ta song lai yi-wan tang, #keshi hai mei dao.  
 he send come one-CL soup but still not arrive  
 ‘He brought the soup, #but it has not arrived.’
- b. Ta song yi-wan tang lai, keshi hai mei dao.  
 he send one-CL soup come, but still not arrive  
 ‘He has come with the soup, but it has not arrived.’
- (18)a. Ta song jin-lai yi-wan tang, #keshi zai waimian bei qiang le.  
 he send enter-come one-CL soup, but at outside PASS rob ASP  
 ‘He brought in a bowl of soup, #but it was robbed outside.’
- b. Ta song yi-wan tang jin-lai, keshi zai waimian bei qiang le.  
 he send one-CL soup enter-come but at outside PASS rob ASP  
 ‘He is coming sending a bowl of soup, but it was robbed outside.’
- c. Ta song jin yi-wan tang lai, #keshi zai waimian bei qiang le.  
 he send enter one-CL soup come but at outside PASS rob ASP  
 ‘He brought in a bowl of soup, #but it was robbed outside.’

Take (17) as an example: I add the same assertion ‘but it has not arrived’, which provides a finishing point at the end of the sentences. The  $V_m V_d O$  order clashes with this assertion (as in (17a)) while the  $V_m O V_d$  order does not (as in (17b)). This indicates that the  $V_m V_d O$  order probably entails a finishing point, hence telic while the  $V_m O V_d$  order does not necessarily entail such an endpoint, hence atelic. In other words, (17a) indicates that the soup has arrived while (17b) only indicates that he has set off to send the soup, which may have arrived or be on the way. I also use different translations to show this semantic difference. Similarly, the other three word orders also demonstrate different compatibility with such an assertion. The  $V_m V_d-V_d O$  order (18a) and the  $V_m V_d O V_d$  order (18c) seem to be telic while the  $V_m O V_d-V_d$  order (18b) is atelic. This intuition can be further supported by some widely used telicity tests. I will adopt two tests (Dowty 1979) in this paper, which are in-PP test and ‘almost’ test.

In-PP test: basically, in-PP is grammatical with telic events but not compatible with atelic events. For example:

(19) John painted a picture in an hour.

(20) \*John walked in an hour.

Applying the in-PP test to the five word orders, we get:

(21) Ta yi-xiaoshi-nei song lai yi-wan tang.  
 he one-hour-in send come one-CL soup  
 ‘He brought one bowl of soup in one hour.’

- (22) \*Ta yi-xiaoshi-nei song yi-wan tang lai.  
 he one-hour-in send one-CL soup come  
 ‘He came with one bowl of soup in one hour.’
- (23) Ta yi-xiaoshi-nei song jin-lai yi-wan tang.  
 he one-hour-in send enter-come one-CL soup  
 ‘He brought in one bowl of soup in one hour.’
- (24) \*Ta yi-xiaoshi-nei song yi-wan tang jin-lai.  
 he one-hour-in send one-CL soup enter-come  
 ‘He came in with one bowl of soup in one hour.’
- (25) Ta yi-xiaoshi-nei song jin yi-wan tang lai.  
 he one-hour-in send enter one-CL soup come  
 ‘He brought in one bowl of soup within one hour.’

The  $V_m V_d O$ ,  $V_m V_d-V_d O$  and  $V_m V_d O V_d$  orders survive the in-PP test while the  $V_m O V_d$  and  $V_m O V_d-V_d$  orders do not. Note that (22) and (24) can be grammatical when they mean ‘He will come with the soup in one hour.’, i.e. when ‘in an hour’ means ‘one hour from now’. But the in-PP test cares about the past reading of the in-PP. For this intended reading, (22) and (24) are ungrammatical.

‘Almost’ test: the adverb ‘almost’ has different effects on telic/atelic events.

- (26) John almost painted a picture.

A telic event like (26) gives two readings with ‘almost’: A. John had the intention of painting a picture, but then he changed his mind and did nothing at all. B. John did begin work on the painting and he almost but not quite finished it.

- (27) John almost walked.

An atelic event with ‘almost’ like (27) only has one reading: John did not walk at all.

We use *chadiar* ‘nearly’ as the Chinese counterpart of ‘almost’. I insert it in the five orders and I also add two assertions at the end of each sentence, the former tests the possibility of reading A while the latter tests reading B:

- (28) Ta zuotian chadiar song lai yi-wan tang. Keshi shuiguotou  
 he yesterday nearly send come one-CL soup but oversleep  
 le jiu mei song. / Keshi song dao banlu bei qiang le.  
 ASP then not song. but send arrive halfway PASS rob ASP  
 ‘He almost brought one bowl of soup yesterday, but he did not send it because he overslept. / but it was robbed halfway.’
- (29) Ta zuotian chadiar song yi-wan tang lai. Keshi shuiguotou  
 he yesterday nearly send one-CL soup come but oversleep  
 le jiu mei song. /? Keshi song dao banlu bei qiang le.  
 ASP then not send. but send arrive halfway PASS rob ASP  
 ‘He almost came with one bowl of soup yesterday, but he did not send it because he overslept. / but it was robbed halfway.’

- (30) Ta zuotian chadiar song jin-lai yi-wan tang. Keshi shuiguotou  
 he yesterday nearly send enter-come one-CL soup but oversleep  
 le jiu mei song. / Keshi song dao banlu bei qiang le.  
 ASP then not song. but send arrive halfway PASS rob ASP  
 ‘He almost brought in one bowl of soup yesterday, but he did not send it because he  
 overslept. / but it was robbed halfway.’
- (31) Ta zuotian chadiar song yi-wan tang jin-lai. Keshi shuiguotou  
 he yesterday nearly send one-CL soup enter-come but oversleep  
 le jiu mei song. /? Keshi song dao banlu bei qiang le.  
 ASP then not song. but send arrive halfway PASS rob ASP  
 ‘He almost came in with one bowl of soup yesterday, but he did not send it because he  
 overslept. / but it was robbed halfway.’
- (32) Ta zuotian chadiar song jin yi-wan tang come. Keshi shuiguotou  
 he yesterday nearly send enter one-CL soup come but oversleep  
 le jiu mei song. / Keshi song dao banlu bei qiang le.  
 ASP then not song. but send arrive halfway PASS rob ASP  
 ‘He almost brought in one bowl of soup yesterday, but he did not send it because he  
 overslept. / but it was robbed halfway.’

As is illustrated above, (28), (30) and (32) allow two readings. In contrast, (29) and (31) definitely allow the first reading while the second reading is odd, if it is not completely impossible.

To sum up, all of the telicity tests show that the  $V_m V_d O$ ,  $V_m V_d-V_d O$  and  $V_m V_d O V_d$  orders clearly behave like telic events while the  $V_m O V_d$  and  $V_m O V_d-V_d$  orders are possibly atelic.

### 2.3. Interim Summary

I summarize the findings we have got for the syntactic and semantic differences between the word orders below:

**Table 1: The word orders and their syntactic and semantic properties**

Word orders	Compatibility with locative object	Position of <i>le</i>	Telicity
a. $V_m V_d O$	N	$V_m V_d le O$	telic
b. $V_m O V_d$	Y	$V_m le O V_d le$	atelic
c. $V_m V_d-V_d O$	N	$V_m V_d-V_d le O$	telic
d. $V_m O V_d-V_d$	N	$V_m le O V_d-V_d le$	atelic
e. $V_m V_d O V_d$	Y	$V_m V_d le O V_d le$	telic

Based on this table, two questions immediately arise: how can we derive word order (a) to (e)? How can we account for the syntactic and semantic differences observed?

### 3. Deriving order (a) and (b)

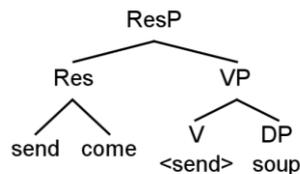
#### 3.1. Proposal

I start from the type 1 DSVC, which involves orders (a) and (b). On the derivation of these two word orders, one solution is to suggest that one order is canonical while the other is

derived from it. The other solution is to say underlyingly, they involve different merge structures. Zou (1994a) and Paul (2008) follow the former approach. However, they did not realise the syntactic and semantic divergence between the two orders, hence their analysis did not and cannot explain the puzzle we have seen. In this paper I try the latter path, which hypothesises two merge structures underlying order (a) and (b).

Specifically, I suggest that order (a) is a resultative construction in which the  $V_d$  functions as a resultative predicate. Derivationally,  $V_m$ , as the main verb, merges with the object first, projecting VP. Then the  $V_d$  is merged as a functional head Res and V will raise to Res, represented in (33).

(33)



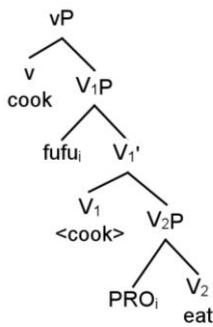
This rough structure can immediately capture the intuition that the perfective marker *le* cannot be inserted in between ‘send’ and ‘come’ because Perf is generally assumed to merge above vP, which is after ‘send’ and ‘come’ have already been adjoined. Besides, (33) also predicts the telic reading of order (a) because if it is a resultative construction, then it is naturally telic. This solution is also not without empirical support. Order (a) behaves very similarly to a Chinese resultative structure, traditionally known as ‘resultative verb compound (RVC)’ (Li & Thompson 1981)<sup>4</sup>. An RVC includes a series of two verbs in which the first one denotes an action and the second one the result from that action. The object is a shared argument of the two verbs and it has to follow the whole verb cluster, as in the case of *da si lang* ‘hit die wolf’ (hit the wolf and the wolf died). RVCs also disallow *le* to intervene between the two verbal elements and are widely known as telic structures. Therefore, it is reasonable to hypothesize that order (a) shares the same structure as an RVC, namely, a resultative structure.

As for order (b) ( $V_m$  O  $V_d$ ), I adopt the approach proposed by Collins (1997) and Paul (2008), which is building up a two VP structure. Collins (1997) investigated the serial verb constructions in Ewe as well as related languages and proposed a structure for SVC, which, against Baker’s three-branch approach to object sharing (Baker 1989), assumes an empty category mediating the relationship between the two verbs in SVC. Briefly, a SVC sentence in Ewe such as (34) is represented by a structure in (35):

- (34) Wo da fufu du.  
 3PL cook fufu eat  
 ‘They cooked fufu and ate it.’

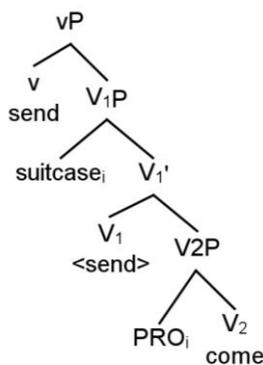
<sup>4</sup> There is a heated debate on whether RVCs are compounds or phrases and how they are derived in the literature. For a lexical approach, see Yafei Li (1990); for a syntactic approach, see Sybesma (1999). In this paper I adopt a syntactic approach which treats the verbal elements in a resultative structure as two syntactic items rather than two morphemes in a compound.

(35)



Paul (2008) applied Collin's approach to Chinese DSVCs and suggested that the V<sub>m</sub> O V<sub>d</sub> order is canonical and represents a structure in (36) while the V<sub>m</sub> V<sub>d</sub> O order is derived from it by raising the lower verb to adjoin to the higher verb.

(36)



I follow Paul in that the V<sub>m</sub> O V<sub>d</sub> order has the merge structure as in (36). However, I do not suggest that the V<sub>m</sub> V<sub>d</sub> O order is derived from it, but rather that it is derived as a resultative construction as I mentioned earlier.

### 3.2. Refining the structure

Previously, I proposed two merged structures (33) and (36) to represent order (a) and (b) respectively. However, this is still not enough to account for the syntactic and semantic characteristics we have seen in Table 1. There are two more issues to address: the syntax of *le* and the syntax of situation aspect.

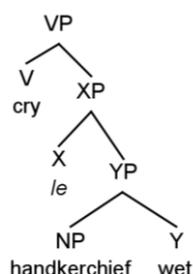
#### 3.2.1. More about the syntax of *le*

In the previous analysis I briefly mentioned that *le* is traditionally called a perfective aspect marker. If this is the case, we would expect it to merge as the Perf head above vP. However, a technical problem would rise in order (b). Recall that order (b) allows two *les* to appear following both verbs at the same time. We cannot expect that to happen if we assume *le* is projected above vP. Hence, we need to reconsider the merge position of *le*. Looking back to the literature about *le*, there are proposals which do not treat *le* as a Perf head above vP. Sybesma (1997), after reviewing various literature on the description of the meaning of *le*, proposed that in syntax, *le* is merged lower than V<sup>o</sup> and serves as a resultative predicate. Therefore, a sentence with both *le* and other resultative predicates indicates an underlying structure: [<sub>VP</sub> V [<sub>XP</sub> X(*le*) [<sub>YP</sub> NP Y]]]. According to him, both XP and YP are small clauses. The verb is complemented by a small clause XP, which is headed by *le*. The head X is complemented by another small clause YP, which is formed by the object and the other

resultative predicate. The semantic relation between XP and YP is that: *le* expresses the state denoted by YP has realized. For instance, (37) has the underlying structure in (38).

- (37) Ta ku shi le shoujuan.  
 he cry wet ASP handkerchief  
 ‘He cried and the handkerchief got wet.’

(38)



However, to derive the linear order of the three heads, which is ‘cry wet *le*’, Sybesma has to specially assume that *le* is a suffix in the lexicon, hence needs to come last, which is quite stipulative. In this paper, I will adopt his general idea that in a sentence with both *le* and a resultative predicate, *le* signals realization of the result state denoted by the resultative predicate. But I will make some changes to the syntactic position that *le* merges.

### 3.2.2. Inner aspect

The changes are motivated by the fact that *le* seems to be more closely related to situation aspect rather than viewpoint aspect: it telicizes a resultative phrase which itself telicizes a matrix verb. So it would be nice if we could unify the analysis of *le* with situation types, for which we need Travis' proposal on the syntax of situation aspect.

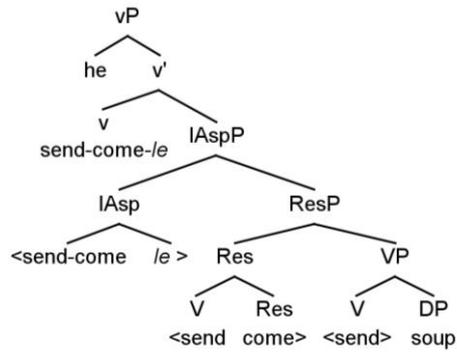
It is well known that the aspect system of human languages consists of two types which are viewpoint aspect and situation aspect (Smith 1997). Travis (2010) proposes that both viewpoint aspect and situation aspect are realized as a head. The situation aspect is realized as a head IAsp (Inner Aspect) which is located between VP and vP while the viewpoint aspect is realized as a head OAsp (Outer Aspect) projected higher above vP. She also suggests that IAsp carries a feature [+/- telic] whose value is computed by the elements within its domain. This value decides the telicity reading.

I adopt Travis' idea that there is an IAsp related to situation aspect between VP and vP. But I propose that what Travis calls the IAsp projection can itself be further articulated, with each smaller projection corresponding to some aspect of telicity. I propose that there are at least two such projections: Res, which hosts the resultative predicate, and IAsp, which can host the aspectual *le* or a null head. And I assume that the IAspP is the place to check telicity features, thus it will always be projected and projected above all the VPs if there is more than one VP in the clause, whereas ResP is only projected when a resultative predicate occurs. What I proposed above is represented in (39).

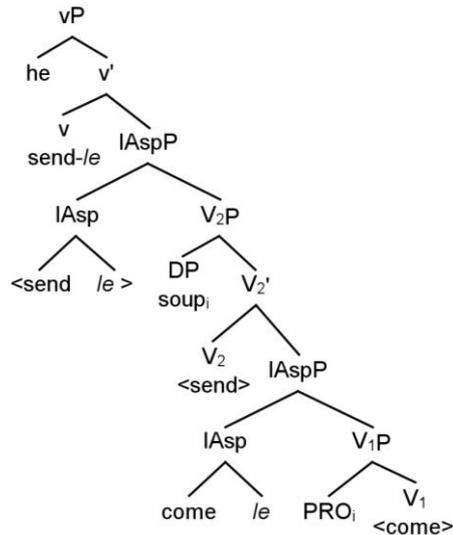
- (39) [<sub>IAspP</sub> IAsp(*le/φ*) [<sub>ResP</sub> Res [<sub>VP</sub> V DP ]]]

V will raise to Res and then the cluster V-Res further raises to IAsp via head movement. In minimalist terms, Res has a strong [uV\*] feature, which triggers V to raise and adjoin to it. And similarly, IAsp also has a [uV\*] feature which forces V along with Res to adjoin to it. In this way we can derive the right surface order without assuming *le* is a suffix. (40) represents the derivation of order (a) and (41) represents the derivation of order (b).

(40) Derivation of order (a)



(41) Derivation of order (b)



Based on this we can also derive the telicity reading. Recall that we assume the IAsp head could be null or *le*. When *le* is not presented, order (a) yields telic reading while order (b) atelic reading. Hence, we can assume that when the head of IAsp is null, the null IAsp head bears a feature [Tel:]. When V along with Res moves to the IAsp, the feature [Res] on Res will value the null head as [Tel:Res], so the sentence yields telic reading. When the ResP is not projected, only V raises to IAsp, the [Tel:] feature will remain unvalued and by default it will be interpreted as atelic. In contrast, when the head of IAsp is *le*, the overt IAsp head *le* bears a feature [Tel:Res]. No matter if there is a Res moving to IAsp, the value on IAsp will not be changed because the feature already has a [Res] value. This is supported by the fact that when *le* occurs, the sentence is always telic no matter whether there is a resultative predicate.

**4. Deriving word order (c)-(e)**

Now we move on to the word orders (c)-(e) which are repeated below:

c. V<sub>m</sub> V<sub>d</sub>-V<sub>d</sub> O (*song jin-lai tang* ‘send enter-come soup’)

d. V<sub>m</sub> O V<sub>d</sub>-V<sub>d</sub> (*song tang jin-lai* ‘send soup enter-come’)

e. V<sub>m</sub> V<sub>d</sub> O V<sub>d</sub> (*song jin tang lai* ‘send enter soup come’)

Here we encounter a dilemma on whether to treat the V<sub>d</sub> cluster in orders (c) and (d) as a compound or two independent verbs. In the descriptive literature, the V<sub>d</sub> cluster such as *jin-lai* is viewed as a compound without question. Besides, Table 1 clearly shows that order (c)

behaves like order (a) and, order (d) like order (b) in terms of the position of *le* and the telicity reading. If the  $V_d$  cluster is really a compound, then order (c) and (d) would be equal to (a) and (b) respectively, which naturally predicts their similarity in *le*'s distribution and telicity. However, it would be hard to explain why order (e) exists if we assume the  $V_d$  cluster is a compound.

Further evidence shows that the split  $V_{ds}$  in order (e) clearly show phrasal properties while the  $V_d$  cluster in orders (c)-(d) behaves like a single word: when the double  $V_d$  cluster is not separated by an NP, *le* can never appear in the middle. But when the cluster is separated by an NP, *le* can be inserted between two  $V_{ds}$ :

- (42)a. Ta song jin (\*le) lai shu.  
 he send enter (ASP) come book  
 b. Ta song jin le shu lai.  
 he send enter ASP book come

To solve this dilemma, I suggest that the  $V_d$  cluster in orders (c)-(d) is indeed a compound while in order (e) there is no compound at all. Instead, the two  $V_{ds}$  are two lexical items from the lexicon, namely two heads in the syntax.

It may be more economical to argue for a coherent analysis which treats all the  $V_{ds}$  in orders (c)-(e) as independent verb heads. However, this first counters native speakers' intuition that the  $V_d$  cluster, such as *jin-lai*, is a single word rather than two words. More importantly, empirical data shows that the  $V_d$  cluster in orders (c)-(d) is indeed a compound verb. Compare the following pairs:

- (43)a. \*Ta song le.  
 he send ASP  
 '\*He sent.'  
 b. \*Ta jin le.  
 he enter ASP  
 '\*He entered.'

- (44)a. \*Ta song lai le.  
 he send come ASP  
 '\*He brought.'  
 b. Ta jin-lai le.  
 he enter-come ASP  
 'He came in.'

Both *song* and *jin* are transitive when they are used alone, so if there is no overt object following them, the sentences become ungrammatical, as in (43).<sup>5</sup> However, when they are combined with the directional verb *lai*, the verb string *song lai* disallows no object (as in (44a)) while *jin lai* is grammatical with no object (as in (44b)). If our analysis in Section 3 is correct, the string *song lai* involves two heads in which the V head *song* needs a complement, so if there is no object occurring, the uninterpretable [uD] feature on V will not be checked. If *jin-lai* also involves two heads, it should also require an object, but this is not the case. This suggests that *jin-lai* enters syntax as a whole word, more specifically, an intransitive verb. Therefore, I suggest that all the  $V_d$  clusters in orders (c)-(d) should be compounds, which

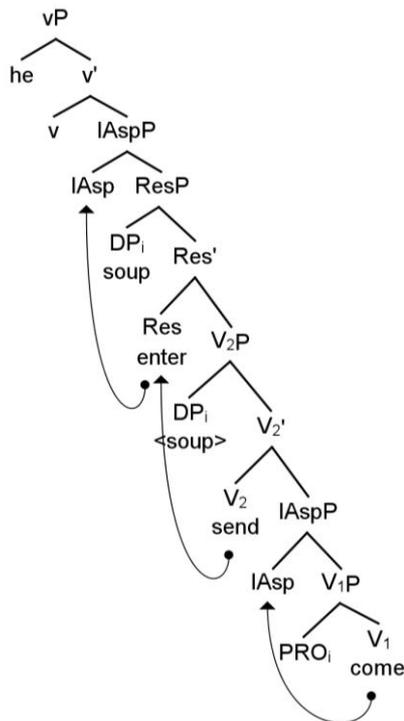
<sup>5</sup> Sentences in (43) are definitely ungrammatical on the non-pro drop reading. They are acceptable when there is an implicit object, but if there is an implied object, we should expect a PRO in syntax which still means they need an internal argument.

means orders (c)-(d) would bear the same structure and derivation process as orders (a)-(b) respectively.

On the other hand, in order (e), we assume the two  $V_d$ s separated by an NP are different lexical items, hence the lexical integrity condition is not violated. Then how are they represented in syntax? The occurrence of *le* gives us some clue. Remember that in order (e), *le* can appear after the two  $V_d$ s but not after the  $V_m$ . Take (42b) for example, *le* can occur after *jin* and after *lai*, but not after *song*. Following my analysis in Section 3, *le* will be attached to either a V head or a Res head. Then we have reason to believe that here *jin* and *lai* are either a V head or Res head.

For *lai*, it is fairly clear that it can only be a V head because Res must be merged above a VP and attached to V after V moves to it, but there is no other V heads sticking to *lai* on surface, therefore *lai* is a V head. As for *jin*, if it is a V head, we should expect that *le* can follow both *song* and *jin* because according to my hypothesis, there is an IAspP above each VP. However, as I just mentioned *le* cannot occur after *song*, hence, *jin* cannot be a V head. However, if *jin* is a Res head, the position of *le* is well predicted because the main verb *song* will move to Res (*jin*) first and then they together move to IAsp head, which leads to the surface order V-Res-*le*. Therefore, I suggest that in order (e), the first  $V_d$  is a Res head while the second  $V_d$  is a V head. Then the merge structure underlying order (e) turns out to be a double VP structure in which the higher VP, projected by  $V_m$ , has a ResP above it projected by a non-deictic  $V_d$  whereas the lower VP is projected by a deictic  $V_d$ . (45) is the tree diagram for the merge structure of word order (e) with the arrows showing the head movement.

(45) Derivation of order (e)



If both of the IAsp heads are filled by *le*, we will derive the right linear order: *song jin le tang lai le* ‘send enter *le* soup come *le*’. And the telic reading of order (e) is also bore out because the higher IAsp is valued as [Tel:res] by the Res, thus yielding telic interpretation.

## 5. More remarks on the Locative object

The theory we have developed so far explains the position of *le* in word orders (a)-(e) as well as the telicity value of each order. The remaining puzzle is why some of the orders can take a locative object while some cannot.

We first look at orders (a) and (b). Basically, order (a) does not allow a locative object while (b) does. The examples are repeated below:

- (46) a. \*ta shang lai shan.  
       he ascend come mountain  
       b. Ta shang shan lai.  
       he ascend mountain come  
       ‘He came up the mountain.’

Following the theory we developed in Section 3, (46b) can be derived without question. Specifically, it involves two VPs which are ‘ascend mountain’ and ‘lai’, as in (47). After the head movement (V to IAsp), we get (46b).

- (47)  $[_{VP} \text{he}_i [_{V'} V [_{IAspP} \text{IAsp} [_{V2} \text{mountain} [_{V2'} \text{ascend} [_{IAspP} \text{IAsp} [_{V1P} \text{PRO}_i \text{come}]]]]]]]]]$

Nonetheless, the theory we have so far cannot predict the ungrammaticality of (46a). Nothing in (48) prevents the derivation to converge successfully.

- (48)  $[_{VP} \text{he} [_{V'} V [_{IAspP} \text{IAsp} [_{ResP} \text{come} [_{VP} \text{ascend mountain}]]]]]]]$

To solve this, I assume that Res head bears a [uD] feature which triggers the object NP to move to [Spec, Res]. So the derivation for *song lai tang* ‘send come soup’ would be modified as (49):

- (49)  $[_{ResP} \text{soup} [_{Res'} \text{come} [_{VP} \text{send} \langle \text{soup} \rangle]]]]]$

Semantically, (49) would be interpreted as ‘...sent the soup and the result is the soup came’. However, if the object is a locative object, although syntactically we can still move the LocO to [Spec, Res], as in (50) which will result in (46a) after head movement, we would get an anomalous interpretation: He ascended the mountain, as a result, the mountain came.

- (50)  $[_{VP} \text{he} [_{V'} V [_{IAspP} \text{IAsp} [_{ResP} \text{mountain} [_{Res'} \text{come} [_{VP} \text{ascend} \langle \text{mountain} \rangle]]]]]]]]]$

In other words, the unacceptability of (46a) is because order (a) combined with a locative object yields infelicitous reading. To derive the intended reading, we have to resort to order (b).

Now we move to orders (c)-(e). Orders (c)-(d) disallow locative object while order (e) is grammatical with locative object. I repeat the examples below:

- (51) a. \*Ta zou jin-lai fangjian. (order (c))  
       he walk enter-come room  
       b. \*Ta zou fangjian jin-lai. (order (d))  
       he walk room enter-come

- c. Ta zou jin fangjian lai. (order (e))  
 he walk enter room come  
 ‘He walked into the room.’

Recall we argued before that orders (c)-(d) are equal to orders (a)-(b) respectively. Then the ungrammaticality of (51a) is expected. However, (51b) is not expected because order (b) should be grammatical with a locative object. Of course we can argue that in (51b), the  $V_m$  *zou* is intransitive, hence it should not take an object. Nevertheless, even if we add a preposition after *zou* or swap *zou* with a transitive verb, it is still ungrammatical:

- (52) \*Ta zou dao fangjian jin-lai.  
 He walk to room enter-come

- (53) \*Ta jin fangjin jin-lai.  
 he enter room enter-come

I suggest that this is because the semantics of the complex direction compounds such as *jin-lai* indicates a location which is known to both the speaker and listener or can be inferred from the context. To see this more clearly, consider the following scenarios:

Scenario 1: Xiaoming walked up the mountain where Xiaohong and her friends are standing on. Then Xiaohong can say either of the following sentences to her friends:

- (54)a. Ta zou shang shan lai le.  
 he walk ascend mountain come ASP  
 b. Ta zou shang-lai le.  
 he walk ascend-come ASP  
 ‘He walked up (the mountain).’

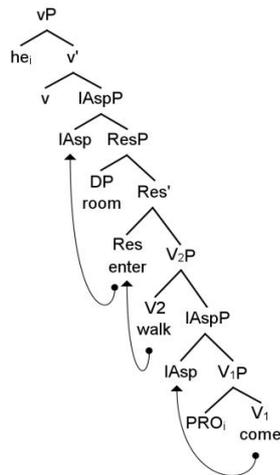
Scenario 2: Xiaoming swam across the river. Xiaohong and her friends are standing on the bank watching. Then Xiaohong can say either of the following sentences to her friends:

- (55)a. Ta you guo he qu le.  
 he swim cross river go ASP  
 b. Ta you guo-qu le.  
 he swim cross-go ASP  
 ‘He swam across (the river).’

In other words, the conceptual location semantically incorporated in the direction compounds such as *shang-lai* and *guo-qu* cannot co-occur with an overt locative NP, hence, when a directional compound is used, no more overt locative object is allowed.

Finally, order (e) with a locative object should be derived as in (56), where the LocO is merged directly in the [Spec, Res]:

(56)



## 6. Conclusion

In this paper, I have investigated five word orders shown by the directional serial verb construction in Mandarin Chinese. I show that these word orders reveal many syntactic and semantic differences, including their compatibility with a locative object, the position of *le* and their telicity interpretation. To derive the five word orders and account for the puzzles we identified, I propose that order (a) represents a resultative structure while order (b) a double VP structure. I further argue that the  $V_d$  cluster in orders (c) and (d) is a compound, so (c) and (d) should share the same derivation as (a) and (b) respectively. Finally, order (e) involves a double VP structure in which the higher VP has a ResP projected above it.

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