

**Mandarin Directional Serial Verb Constructions:
A Constructionist Approach**

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Abstract

This thesis presents a neo-constructionist theory to account for a couple of puzzles centring around the Mandarin directional serial verb constructions (DSVC), such as *song tang jin lai* ‘send soup enter come’.

Mandarin DSVCs are divided into seven types. I first look into the word order alternations observed with certain types of DSVCs. I find that the word order variants differ in telicity and their interaction with the aspectual morpheme *le*, the potential morphemes *de/bu* and the negation *bu/mei*. Then the DSVCs involving no word order alternations are also examined. I compare the distribution of *le* and the locative object in all types of DSVCs. The relation between the metaphoric interpretation and the syntactic position of directional verbs is also discussed.

To cover the data, I propose that syntax first generates an eventuality-encoding structure for the lexical items to be inserted. In this structure, VP is sandwiched between a series of functional projections including ResP, PathP, DeicP, RealiseP and IAsP. VP represents the process of the event; ResP expresses the result state; PathP describes a moving track; DeicP encodes deictic information; RealiseP accommodates the aspect marker *le*; IAsP calculates telicity value. Different options for the insertion of the directional verbs (under Res, Path or Deic) result in the word order alternations. And the observed syntactic and semantic characteristics of DSVCs can all be captured by the interaction among these projections. The proposal is sympathetic to many other constructionist theories in the belief of an impoverished lexicon, the idea that syntactic structure is basically event structure, and the decompositional approach that spans one item to different heads.

Overall, this work not only contributes to our understanding of how DSVCs are syntactically represented, but also shows the explanatory power of the constructionist approach in modelling the human language faculty.

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Author's Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

In this thesis, I have included the work presented in the following published papers:

Chen, Z. (2014), 'Movement and Direction in the Chinese V-V Construction', Proceedings of the Inaugural ShefLing Postgraduate Conference pp. 14–18.

Chen, Z. (2015), 'The Word Order of The Directional Serial Verb Construction in Mandarin Chinese', The Second Asian and European Linguistic Conference Proceedings pp. 1–16.

Chapter 1

Introduction

1.1 The Research Topic

Constructionism and projectionism represent two major research camps within generative grammar with contrasting views concerning the division of labour between the lexicon and the syntactic component of the human language faculty.

Specifically, the debate centres around questions such as: How much information should be associated with the lexical entries, and how much can be considered as the result of syntactic operations? What is the correct level for representing argument structures? What regulates specific semantic roles to get linked to specific syntactic positions? And how can argument structure alternations as well as the limitations on such operations best be accounted for without losing explanatory power? (Tungseth 2008: 7)

Researchers working within the projectionist tradition assume that the correct level for stating argument structure information is the lexicon (e.g. Larson 1988, Levin & Rappaport Hovav 1995, Reinhart 2003, Reinhart 2006). However, projectionist approaches generally have restricted power in accounting for argument alternation issues (which will be addressed in Section 1.2). Hence rise the constructionist proposals, which, contrary to projectionist theories, seek to derive the alternated argument structure of lexical items from the syntactic structure in which they appear (e.g. Hale & Keyser 1993, Goldberg 1995, Marantz 1997, Ritter & Rosen 1998, Borer 2005, Travis 2010, among others).

The thesis puts the constructionist approach to the test, in a complex empirical

domain, which is the Directional Serial Verb Construction in Mandarin Chinese, also abbreviated as DSVC in this thesis. Two examples of the Mandarin DSVC are illustrated in (1) and (2):

- (1) Ta **zou jin** le fangjian.
 3sg walk enter ASP room
 ‘S/He walked into the room.’
- (2) Ta **na chu lai** le yi ben houhou de shu.
 3sg take exit come ASP one CL thick DE book
 ‘S/He took out a very thick book.’

In (1), there are two verbs in a row: a motion verb *zou* and a direction denoting verb *jin*, both of which can be used alone as the predicate of a sentence:

- (3) Ta zou le 100 mi.
 3sg walk ASP 100 meter
 ‘S/He walked 100 meters.’
- (4) Ta jin le fangjian.
 3sg enter ASP room
 ‘S/He entered the room.’

In (2), there are three verbs in a row: a displacement verb *na* ‘take’ and two directional verbs *chu* ‘exit’ and *lai* ‘come’. They can also be used alone as the predicate of a sentence.

(1) and (2) merely represent two possible combinations of verbs among the various DSVC data in Mandarin. More combination patterns will be revealed as we proceed, especially in Chapter 2.

Note that this kind of verb string is not necessarily referred to as “directional serial verb construction” in the literature, especially in the descriptive literature. For example, in Li & Thompson (1981), the verb string is described as a compound. The reason for which I do not view them as compounds will be fully discussed in Chapter 2. For now I briefly show that the usage of the term *serial verb construction* (SVC) in this thesis is reasonable.

SVC itself is a loose term that does not receive a consensual definition among linguists. In general, the use of the term “serial verb construction” basically aims to limit the data rather than entail a specific syntactic analysis.

For example, in the Chinese descriptive literature, the term “serial verb construction” is used to cover an even wider range of phenomena involving more than one verb in a surface string, which actually require totally different syntactic analyses. For example, in some SVCs, one VP is analysed as an adjunct to another, whereas some other SVCs involve object control.¹

Collins (1997) takes (5) as a provisional definition for SVC.

- (5) “A serial verb construction is a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt maker of coordination or subordination.”

(Collins 1997: 462)

Collins further emphasises, consenting with Baker (1989), and Foley and Olson (1985), that

- (6) “In a serial verb construction, V1 and V2 must share an internal argument.”

(Collins 1997: 463)

Based on (5) and (6), the Ewe examples (7) - (9) are classified as SVC and are referred to as “resultative SVC”, “instrumental SVC” and “direct-object-sharing SVC” respectively.

- (7) Me nya ɖevi-ε dzo.
I chase child-DEF leave
‘I chased the child away.’

- (8) Kofi tsɔ ati-ε fo Yao.
Kofi take stick-DEF hit Yao
‘Kofi took the stick and hit Yao with it.’²

- (9) Wo ɖa fufu ɖu.
they cook fufu eat
‘They cooked fufu and ate it.’

(Collins 1997: 461)

¹See Paul (2008) for a critical discussion on the various phenomenon under the label of the term *serial verb construction* in the Chinese descriptive literature

²(8) is considered as SVC because the object of V1 *tsɔ* ‘take’ is also the instrumental argument of V2 *fo* ‘hit’. (Collins 1997: 466)

In comparison, examples (10)-(12) are analysed as cases of covert coordination.

- (10) Me fo kaɖɛgbɛ gba (yɛme) tsimini.
 I hit lamp break its glass
 ‘I hit the lamp and broke its glass.’

(Collins 1997: 463)

- (11) Kofi liɛ ati gbe ne.
 Kofi climb tree pick coconut
 ‘Kofi climbed a tree and picked a coconut.’

- (12) E fo ave fa blafo.
 he clear forest plant corn
 ‘He cleared the forest and planted corn.’³

(Collins 1997: 466)

More recently, Aikhenvald defines SVCs as in (13), consolidating the existing terminological consensus. And this thesis is sympathetic to this definition.

- (13) “A serial verb construction (SVC) is a sequence of verbs which act together as a single predicate, without any overt marker of coordination, subordination, or syntactic dependency of any other sort. Serial verb constructions describe what is conceptualized as a single event. They are monoclausal; their intonational properties are the same as those of a monoverbal clause, and they have just one tense, aspect, and polarity value. SVCs may also share core and other arguments.”

(Aikhenvald & Dixon 2006: 1)

Aikhenvald argues that SVCs with no shared argument are comparatively rare, but not non-existent (Aikhenvald & Dixon 2006: 12), which is different from the assumptions of Baker and Collins. Although this definition covers a wide range of phenomena in various languages, many of which are beyond the scope of this thesis, it is worth mentioning because it provides criteria generally accepted to judge whether a particular construction can be classified as a an SVC. Aikhenvald also divides SVCs into two types depending on their semantic composition: Symmetrical Serial Constructions and Asymmetrical Serial Constructions. The

³(11) and (12) are not considered as internal argument sharing, according to Collins, because the object of the V1 is the location of the V2, but it is less plausible for a location than for a instrument (as in (8)) to be an argument.

components from Symmetrical SVCs all come from unrestricted classes, whilst the asymmetrical SVCs involve one verb from “a relatively large, open or otherwise unrestricted class” and another from a “semantically or grammatically restricted (closed) class” (Aikhenvald & Dixon 2006: 21).

The main data of this thesis, i.e. the directional SVCs, such as (1) and (2), conform to Aikhenvald’s definition. They have no overt syntactic dependency marker, share aspect marker and certain arguments. They are conceptualized as a single event and their intonational properties are just like a monoverbal clause. Therefore, classifying these data as SVCs is justified. And we can easily see that the directional SVCs in Mandarin fall into the asymmetrical type of SVCs since they involve one motion/displacement verb which constitute a relatively open class of verbs and one or more direction encoding verbs which constitute a closed set with limited number of verbs.

I specially choose DSVC in Mandarin as the main data for the thesis mainly for three reasons. Basically, the data provides good support for the constructionist approach. Secondly, the studies on Mandarin DSVC lack a systematic syntactical analysis in the literature. Thirdly, the study of DSVC data also sheds some light on the study of resultatives and spatial PPs. Now I elaborate on these three points one by one.

First and foremost, some DSVCs (e.g. (2)) demonstrate word order alternations as in (14), which is related to the core debate between constructionist and projectionist theories, i.e. the argument alternation issues.

- (14) a. Ta **na chu lai** le yi ben houhou de shu.
3sg take exit come ASP one CL thick DE book
- b. Ta **na** le yi ben houhou de shu **chu lai**
3sg take ASP one CL thick DE book exit come
- c. Ta **na chu** le yi ben houhou de shu **lai**.
3sg take exit ASP one CL thick DE book come
‘S/He took out a very thick book.’

In Section 1.2, I show that argument alternation is the main problem on which constructionists question and challenge projectionists, and that constructionists provide various models, which have more advantages than the projectionist approaches, to account for data as such. In this thesis, I also propose a constructionist model for the Mandarin DSVC word order alternations with certain

tentative projectionist solutions also being discussed but discarded in the end. In this way the thesis provides one more piece of supporting data and more arguments for the constructionist approaches applied on argument alternation issues, and also demonstrates the explanatory power of the constructionist framework.

The second reason for which I choose Mandarin DSVC as my research focus is that few researchers have delved into Mandarin DSVCs, investigating their syntactic and semantic derivation. In general, investigation of directional SVCs in human languages is often correlated with the typological studies on motion events. Researchers' interest tends to centre around the typological classification of the languages that utilise SVCs as a strategy to express motion and direction. The most famous proposal is probably made by Talmy (1975). Talmy (1975) proposes that human languages fall into two types with respect to their way of encoding motion event: verb-framed languages and satellite-framed languages. Basically, the major semantic components of a motion event are **path** and **manner of motion**. Verb-framed languages, represented by most Romance, Semitic, Japanese and Korean, encode path in the main verb and the manner in a subordinated adjunct clause. Satellite-framed languages, represented by Indo-European languages (except for most Romance languages), Chinese, Finno-Ugric, Ojibwa and Walpiri, encode manner in the main verb and path in a 'satellite' which primarily subsume prepositions, particles and verb affixes. Examples of each type are shown below.

Verb-framed language:

- (15) Je suis *entre* dans la maison (*en boitant*). (French)
 I am entered in the house in limping
 'I entered the house (limping).'

Satellite-framed language:

- (16) John limped into the house.
 (Beavers, Levin & Wei Tham 2010: 333)

As we can see, in French, a verb-framed language, path is encoded in the main verb *entre* while the manner of motion is expressed with an adjunct clause *en boitant*. In contrast, as a satellite language, English lexicalises manner of motion as the main verb *limp* and path as a preposition satellite *into*.

Talmy's binary typology hinges on a crucial criterion: whether a given language prefers to express path in the main verb or in a satellite element associated with the main verb. Hence, identifying the main verb is of utter importance. This is relatively easy in languages such as English and French because the distinct morphological marking helps to differentiate the main verb from the satellite elements. However, applying such an approach to Mandarin Chinese is problematic. Take (1) for example again, repeated in (17).

- (17) Ta **zou jin** le fangjian.
 3sg walk enter ASP room
 'S/He walked into the room.'

Now both the manner and path information are encoded in verbs. Identifying the 'main verb' is not straightforward. The translation for (17) may lead people to speculate that the second verb *jin* is equal to the preposition *into* in English because the translation seems to suggest that the manner of motion verb *zou* expresses the main information while the path verb *jin* seems to drop its motion meaning and only provide a direction/path information for the manner of motion verb. However, there is no independent evidence showing that *jin* can be reanalysed as a preposition (more arguments are given in Chapter 2). Besides, it is not entirely impossible for (17) to be interpreted as 'He entered the room by walking', although this reading is less salient and normally requires some context support. For example, (18).

- (18) Ting qingchu! Ta shi **pao jin** fangjian de, bushi **zou jin**
 listen carefully 3sg SHI run enter room DE, NEG-SHI walk enter
 fangjian de!
 room DE
 'Listen carefully! It was by running that he got into the room, not by walking.'⁴

If this kind of reading is accepted, it indicates that *jin* could be the main verb and *zou* therefore is an adjunct. This amounts to say Mandarin can be on either side of Talmy's typology classification. If *zou* is considered to be the main verb, *jin* as a preposition, then Mandarin should be classified as a Satellite-framed language, just as Talmy himself suggested. If *jin* is considered

⁴The *shi...de* construction is a emphatic construction. The material between *shi* and *de* is emphasized.

as the main verb while *zou* is an adjunct, then Mandarin would be viewed as a verb-framed language.⁵

In fact, using serial verbs to express motion/displacement and direction is not solely observed in Mandarin Chinese. A lot of Chinese dialects, such as Cantonese, Min, Wu, as well as other languages that allow serial verbs, such as Thai, Vietnamese, West-African languages and Oceanic languages, also display very similar constructions.

Cantonese

- (19) lei lo di saam lai.
you take pl clothing come
‘Bring some clothes.’

(Aikhenvald & Dixon 2006: 21)

- (20) Khǎw wîŋ troŋ yǒ:n klàp khâw pay.
he run go.straight reverse return enter go
‘He ran along straight back in (away from the speaker’s center of attention).’

(Sudmuk 2005: 18 (14))

Oceannic languages

- (21) I i-htuat i-ew. (Kele)
he S:3S-run S:3S-go.away
‘He ran away.’⁶

(Ross 2004: 305 (22))

- (22) Go=wali na loko mo vanai. (N.E. Ambae)
S:2S=carry ACC pudding S:3S:REAL come
‘Bring the pudding.’

(Ross 2004: 306 (27))

⁵The debate between these two possibilities regarding the grammatical status of the directional verb in Mandarin DSVCs has never reached consensus among the Chinese linguists. While linguists such as Hsueh (1989) and Tai (2003) consider the directional verb to be the main verb, others such as Chao (1968), Li & Thompson (1981), and Chang (2001) refer to it as a ‘complement’, or satellite to the main verb, following Talmy’s terminology. (Chen & Guo 2009)

⁶Ross’ gloss ‘S:3S’ denotes ‘subject, third person, singular’.

Clearly, Talmy's two-way typology is not powerful enough to accommodate languages adopting a SVC strategy to express directed motion. Therefore, recent studies suggest a third solution. Slobin (2004*a*, 2004*b*) proposes a third class of languages called equipollently-framed languages in addition to Talmy's binary classification. In equipollently-framed languages, "both manner and path are expressed by 'equipollent' elements, that is, elements that are equal in formal linguistic terms, or appear to be equal in force or significance". Obviously, languages encoding directed motion with SVCs are encompassed under this new label.

Although the addition of the equipollently-framed languages into the typology provides a good solution to the controversial typological status of Mandarin and languages with the same strategy, the new label still tells nothing about the hierarchical syntactic structure of these SVCs. We cannot infer from the typological classification how directional SVCs are derived, let alone answer more advanced questions such as whether the three types of languages, including V-framed, S-framed and E-framed languages, generate a structure of the same kind when expressing directed motion, and which syntactic parameter leads to the strategic difference. Although this thesis is not intended to discuss the parameter setting between each type of languages, we shall provide a systematic analysis on the Mandarin DSVCs, focusing on their syntactic derivation and semantic interpretation, complementing the perspective that is left aside by the typology studies. This study, therefore, could be a possible basis for future research on deriving a general syntactic rule for the motion expressions in human languages.

Last but not least, investigating the DSVCs in Mandarin also contributes to the understanding of the resultative structure and spatial PPs.

In Mandarin and many serial verb languages, motion event and resultatives are both represented with serial verbs. Chinese resultatives have received various analyses, from different perspectives such as their argument structure or aspectual properties. Representative studies include Li (1990, 1993, 1995, 1999), Huang (2006), Sybesma (1999, 1991), Tang (1997) and Zou (1994*b*), to name but a few. However, few studies have systematically tackled the DSVCs which bear similarities to the resultative structures. A thorough investigation in DSVCs can correlate and shed some light on the study of the resultative structures in Mandarin, and possibly on other languages that utilise serial verbs to express both motion event and resultative structures as well.

Moreover, investigating DSVCs in Mandarin also constitutes a complement to the study of spatial PPs. Recent years have seen an impressive growth in the number of studies on the fine grained articulation of prepositional phrases that express spatial relations, namely spatial PPs. A common idea is to assume that PP has a complex internal structure with a series of functional projections, just as NP and VP.⁷ All these studies are focusing on languages with an uncontroversial category P, hence cannot be applied directly to languages like Mandarin which use serial verb constructions to indicate motion and path. A study investigating the path structure in serial verb languages can complement the study of spatial PPs and provide a more complete picture for the path structure in human languages.

All in all, Mandarin DSVC is an intriguing research topic for the study of Universal Grammar, from both the empirical and theoretical perspectives. As I mentioned in the first point for which I choose this topic, Mandarin DSVCs demonstrate word order alternations under certain circumstances, which are closely related to the debate between projectionist and constructionist approaches. In Section 1.2, I shall present a literature review on the debate between these two schools and briefly illustrate how our data are related.

1.2 The Debate between Constructionist and Projectionist Approaches

1.2.1 Projectionist Approach

The dominant theories in generative grammar through the late 1980s to 1990s attribute the syntactic structure to the meaning of lexical items. These theories assume that verbs are listed in the lexicon together with their argument structure information, which specifies the number and the types of arguments (i.e. θ -roles) the verbs combine with in the syntax. Based on such information, a verb can project its syntactic structure.

Such approaches are referred to as ‘projectionist approach’ (Rappaport Hovav & Levin 1998), ‘lexical–thematic approach’ (Ramchand 2010), ‘lexicalist approach’, or ‘endo-skeletal approach’ (Borer 2005*b*) in the literature. These approaches “construct the properties of larger units from the properties of

⁷The detailed review can be found in Section 3.3.2.3.

some central lexical entry, which is itself presumably to be projected as a syntactic head” (Borer 2005*b*: 6). They allow for “the semantic classification of role types within the lexicon, readable by a ‘linking’ theory that places these different roles in different places within the structure. ... Under this view, the lexicon is a ‘submodule’ of the language faculty since it has its own distinct primitives and modes of combination.” (Ramchand 2010: 4)

Projection Principle Chomsky (1981, 1986) is an early expression of this sort of ideas, which states that “lexical structure must be represented categorically at every syntactic level”, hence ensuring that syntactic structure in a given sentence is lexically licensed. Besides, hypotheses such as UTAH (Baker 1988) and UAH (Perlmutter & Postal 1984), a series of works by Levin and Rappaport on argument structure and lexical semantic representation, e.g. Levin (1993), Rappaport and Levin (1995, 1998, 2010), among others, and some recent accounts in the field, such as Knootz-Garboden (2009), Beaver & Knootz-Garboden (2012), Wechsler (2015), are all proponents of this view.

One important challenge faced by projectionist approaches is the puzzle posed by the pervasively observed phenomenon under the label ‘multi argument realization’, which is reviewed thoroughly by Levin & Rappaport Hovav (2005). Multi argument realization generally has two types of manifestations. The first type concerns the argument alternation of a particular verb. For example, the famous dative alternation, locative alternation and with/against alternation in English are of this sort. Examples are shown in (23), (24) and (25) respectively.

(23) dative alternation

- a. Terry gave the newspaper to Kim. (to variant)
- b. Terry gave Kim the newspaper. (double object variant)

(24) locative alternation

- a. Devon smeared butter on the toast. (locative variant)
- b. Devon smeared the toast with butter. (with variant)

(25) with/against alternation

- a. Kerry hit the stick against the fence. (against variant)
- b. Kerry hit the fence with the stick. (with variant)

(Levin & Rappaport Hovav 2005: 186-187)

The dative, locative, and with/against alternations are object alternations, involving alternate realization of the V' internal arguments of three-argument verbs, with one argument always being realized as the object. Similarly, two-argument verbs also show argument alternations. The causative-inchoative alternation and conative alternation are of this kind, which are shown in (26) and (27) respectively.

(26) causative-inchoative alternation

- a. The clumsy waiter broke a whole tray of glasses. (causative variant)
- b. A whole tray of glasses broke. (inchoative variant)

(27) conative alternation

- a. Pat hit the door.
- b. Pat hit at the door.

(Levin & Rappaport Hovav 2005: 187)

The argument alternations illustrated above all take the form of alternate realization of a single set of arguments. Besides, the variants are somewhat related in semantics: they could be paraphrase for each other, as in (23); or the meaning of one variant is subsumed to the meaning of the other, as in (26), where the inchoative variant is implied by the causative variant. Nonetheless, multi argument realization is not confined to phenomenon as such. Another demonstration of multi argument realization involves complex event composition by introducing an extra argument-taking predicate, an additional argument or both, but neither of them are selected by the verb. Example (28)-(30) are illustration of such cases.

(28) a. Terry swept.

- b. Terry swept the floor.
- c. Terry swept the leaves into the corner.
- d. Terry swept the leaves off the sidewalk.
- e. Terry swept the floor clean.
- f. Terry swept the leaves into a pile.

(Levin & Rappaport Hovav 2005: 189)

- (29)
- a. Kim whistled.
 - b. Kim whistled at the dog.
 - c. Kim whistled a tune.
 - d. Kim whistled a warning.
 - e. Kim whistled me a warning.
 - f. Kim whistled her appreciation.
 - g. Kim whistled to the dog to come.
 - h. The bullet whistled through the air.
 - i. The air whistled with bullets.

(Levin & Rappaport Hovav 2005: 189)

- (30)
- a. Pat ran.
 - b. Pat ran to the beach.
 - c. Pat ran herself ragged.
 - d. Pat ran her shoes to shreds.
 - e. Pat ran clear of the falling rocks.
 - f. The coach ran the athletes around the track.

(Levin & Rappaport Hovav 2005: 189)

Furthermore, some verbs are notoriously flexible with respect to the syntactic environment they can appear in – they seem virtually unconstrained. (31) and (32) are classical examples in the literature.

- (31) a. John ate the apple.
 b. John ate at the apple.
 c. The sea ate into the coastline.
 d. John ate me out of house and home.
 e. John ate.
 f. John ate his way into history.

(Ramchand 2010: 21)

- (32) a. The factory horns sired throughout the raid.
 b. The factory horns sired midday and everyone broke for lunch.
 c. The police car sired the Porche to a stop.
 d. The police car sired up to the accident site.
 e. The police car sired the daylight out of me.

(Borer 2005a: 8)

No matter what form the multiple argument realization takes, be it argument alternation or event composition, these pieces of data pose a threatening challenge to the lexicalist/projectionist approaches, which claim that a verb has a structured lexical entry that alone determines the argument realization of its arguments. If the phenomenon is restricted to a few verbs or a delimited class of verbs and the alternations are small in number, it is reasonable to ascribe the source of multiple argument realization to polysemy. However, multiple argument realization is widely found in many verbs of different classes and it is also observed cross-linguistically. This means we have to assume a large number of polysemous verbs existing in the lexicon, which renders a redundancy in the theory about the lexicon. Besides, observing the examples from (23) to (32), we can see that the core meaning of the verb in each variant is the same.

For example in (30), all the *runs* mean something like ‘moving limbs fast and repeatedly’. And in (32), all *sirens* entertain the meaning of ‘emitting a high pitch noise’. Hence, it is rather counter-intuitive to assume that these verbs across the variants are all polysemous verbs.

Interestingly, the directional serial verb constructions in Mandarin Chinese illustrate behaviours which are very similar to the multiple argument realization we have seen above. For example, it is observed that when the first verb is a displacement verb and the second verb is a deictic directional verb such as *lai* ‘come’, the direct object of the displacement verb can occur after either verb:

- (33) a. Ta **ji** **lai** le yi feng xin.
 3sg post come ASP one CL letter
 b. Ta **ji** le yi feng xin **lai**.
 3sg post ASP one CL letter come
 ‘S/He posted one letter (to the speaker).’

The second verb *lai* ‘come’ only indicates the letter’s moving orientation which is towards the speaker. Whether the subject moves is not denoted. To some extent, the verb *lai* is similar to the PP goal argument in dative structures because it can be interpreted as ‘to/towards here’. If we view the second verb *lai* ‘come’ as a goal argument and the direct object as a theme, the alternation in (33) highly resembles the one in dative alternation (as in (23)). In this sense, Mandarin DSVCs illustrate argument alternation. Moreover, the directional verb itself is also not c-selected by the displacement verb. The sentence is perfectly grammatical without the directional verb *lai*, although yielding a different meaning in which no path/goal information is conveyed (compare (34) with (33)). In other words, Mandarin DSVCs also demonstrate event composition.

- (34) Ta ji le yi feng xin.
 3sg post ASP one CL letter
 ‘S/He posted one letter.’

Therefore, it is reasonable to subsume this word order alternation phenomenon observed with the Mandarin DSVCs under the label multiple argument realization. The behaviours of Mandarin DSVCs raise the same questions to the traditional projectionist theories: if the displacement verb has a structured lexical entry, how can they allow such a form of argument alternation and event composition?

Undoubtedly, the challenge posed by multiple argument realization is not neglected by linguists on the projectionist camp. They did posit various solutions to account for this phenomenon. I review some of these solutions in the following sections Section 1.2.1.1 to Section 1.2.1.5.

1.2.1.1 Traditional Transformational Approach

Traditionally, some of the argument alternation phenomenon are captured with a transformational approach which follows Chomsky's (1957, 1965) analysis on active/passive alternations as in (35).

- (35) a. John ate the apple.
 b. The apple was eaten by John.

According to Chomsky, the active and passive verb forms share the same lexical entry hence they are inserted into the same underlying structure. In the case of the active variant, the surface order is the direct projection of the underlying one, while the surface structure of the passive variant is derived via a transformation operation. This line of argumentation is extended to the dative and locative alternations: an alternating verb has a single projection of arguments onto the syntax, with a second realization of arguments being transformationally derived from the first. For example, Hall (1965) suggests that *to* variant in the dative alternation should be the basic structure while the double object variant is derived from it. Similarly, in the locative alternation, the locative variant is the basic whereas the *with* variant is derived.

A weakness of the traditional transformation approach is that they lack a constraint on the changes that transformation can effect. In reaction, 'neotransformational' approaches arose, which appealed to independently motivated constraints on movement rules to explain the range of attested argument alternations (Levin & Rappaport Hovav 2005: 198). Baker's Uniformity of Theta Assignment Hypothesis (1985, 1988) and Larson's VP-shell analysis (1988) are examples of such theories.

1.2.1.2 Baker

Based on the assumption that the variants in the alternations are “thematic paraphrases,” i.e., have the same meaning, Baker (1985, 1988) proposes the Uniformity of Theta Assignment Hypothesis (UTAH).

- (36) The Uniformity of Theta Assignment Hypothesis: Identical thematic relationships between items are represented by identical structural relationships between those items at the level of d-structure.

(Baker 1988: 46, (30))

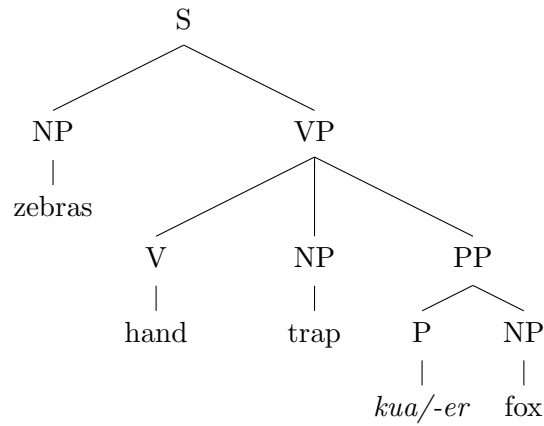
According to UTAH, the variants of the dative alternation have the same underlying structure. The derivation from one variant to another is captured by the operation termed ‘incorporation’. I show Baker’s analysis on the dative alternation in Chicheŵa, in which one variant is an applicative construction as in (37-a), and the other an oblique construction, as in (37-b).

- (37) a. Mbidzi zi-na-perek-er-a nkhandwe msampha.
zebras SP-PAST-hand-to-ASP fox trap
‘The zebras handed the fox the trap.’
- b. Mbidzi zi-na-perek-a msampha kwa nkhandwe.
zebras SP-PAST-hand-ASP trap to fox
‘The zebras handed the trap to the fox.’

(Baker 1988: 229, (3a)(2a))

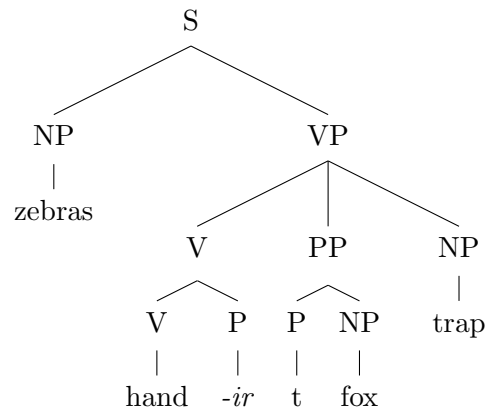
Baker suggests that the Chicheŵa applicative affix *-ir* (with allomorph *-er*) in (37-a) fulfils the same semantic function as the preposition *kwa* in (37-b). Following the Uniformity of Theta Assignment Hypothesis, both variants have the d-structure in (38), as they are thematic paraphrases.

(38)



In other words, the oblique variant is the basic structure. The applicative variant is derived by the “incorporation” of the affix *-er* into the verb. This “incorporation” of the affix into the verb means that the recipient, as the sister of the applicative affix, is now governed by the verb and, thus, is now expressed as an object. The s-structure of the applicative variant is shown in (39).

(39)



Baker’s “incorporation” analysis can be extended to the English dative alternation, on the assumption that both variants share a single thematic structure, hence the same d-structure. The *to* variant stands as the basis and the double object variant involves the covert “incorporation” of a preposition (Den Dikken 1995, Pesetsky 1996).

1.2.1.3 Larson

Another widely adopted analysis of the dative alternation is presented by Larson (1988, 1990). Moving beyond Baker's concerns, Larson (1988) pays more attention to the apparent differences in the c-command relations between the VP-internal arguments in the dative alternation. It is argued that in the double object variant the recipient appears to c-command the theme, while in the *to* variant the c-command relation is reversed.

(40) a. I showed Mary herself.

b. *I showed herself Mary.

(Larson 1988: 336, (3a))

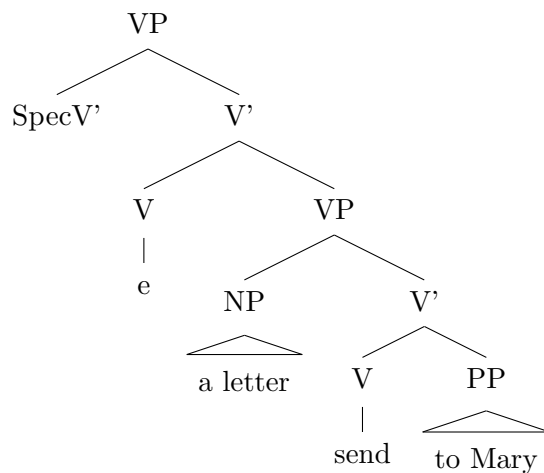
(41) a. I showed Mary to herself.

b. *I showed herself to Mary.

(Larson 1988: 338, (5a))

To handle these c-command relations, Larson proposes that both variants are derived from the same underlying structure as in (42), which is actually assumed for all English verbs and their complements, including dative verbs.

(42)



The *to* variant is simply derived via moving the lower V to the higher V. As for the double object variant, Larson suggests a passive-like operation on the lower VP, which results in the recipient occupying its specifier position and the theme expressed as an “adjunct” position.

Larson motivates this analysis on purely syntactic grounds, with no semantic support⁸. Similar to Baker, Larson’s analysis also takes the starting assumption that the variants are thematic paraphrases.

1.2.1.4 Variants Are Not Paraphrases

However, it was soon noticed that many of the argument alternation cases are not simply swapping arguments’ positions. Fraser (1971) points out that in the locative alternation, the range of the NPs found as the direct object of the locative variant is not the same as the range of the NPs appearing as the object of *with* in the *with* variant, for instance:

- (43) a. They loaded a box onto the truck.
 b. *They loaded the truck with a box.
 c. They loaded the truck with (?the) boxes.
 (Fraser 1971: 606, (4))
- (44) a. The girl planted a tree in the garden.
 b. *The girl planted the garden with a tree.
 c. The girl planted the garden with (?the) trees.
 (Fraser 1971: 606, (4))

Furthermore, based on the hypothesis that transformation does not change meanings (Katz & Postal 1964), the variants should be truth-conditionally equivalent. However, certain semantic divergence across the variants in many argument alternations are detected, although some differences are really subtle. For example, the variants in locative alternation differ in the choice of incre-

⁸See Jackendoff (1990) for an extensive discussion of this assumption and Larson (1990) for a response

mental theme. As Dowty (1991) and Tenny (1994) point out, locative alternation verbs, such as *smear* or *cram*, necessarily describe events which inherently take two arguments that are potential measures or incremental themes. For example,

- (45) a. Ariadne crammed the pencils into the jar.
 b. Ariadne crammed the jar with the pencils.

The two arguments are *the pencils* and *the jar*. *The pencils* can be consumed in increments over time (in this case, pencils are consumed in the sense that they are crammed into the jar one by one or bit by bit). *The jar* is not a simple location, but something that can contain, or be filled up by, the pencil. The locative variant chooses *the pencils* as its incremental theme, so it indicates that the action *cram* finishes when all the pencils are inside the jar. On the contrary, the *with* variant chooses *the jar* as its incremental theme, so the action finishes when the jar is full regardless of the number of the pencils left outside. In other words, the meaning difference of the variants in the locative alternation can be characterised in aspectual terms.

The aspectual difference is more obviously observed in the cases of the multiple argument realization of the event composition type. It is noticed that direct object/oblique alternations can result in telicity differences. As Tenny (1994) points out, when *eat* takes a quantized NP as a direct object, the sentence is telic, but when a preposition *at* is inserted between *eat* and the quantized NP, turning the direct object into an oblique, the sentence becomes atelic, as is shown in (46):

- (46) a. eat the apple in an hour.
 b. *eat at the apple in an hour

(Tenny 1994: 45, (78))

Resultative construction is another good example. Basically when a result phrase is added to an activity verb, such as the English verb *sing*, as in (47), it turns the sentence into telic.

- (47) a. Pat sang for hours. (atelic)
- b. Pat sang herself hoarse in two hours. (telic)
- c. Pat sang the audience to their feet in twenty minutes. (telic)

(Levin & Rappaport Hovav 2005: 104, (22))

Turning back to our own data, the alternation variants in Mandarin DSVCs are also not completely equivalent. As a preview here, I suggest that the VVO order in (48-a) yields a telic reading while the VOV order in (48-b) yields an atelic reading. I show more detailed data and tests to support my view in Chapter 2, where more differences between the two variants are also addressed.

- (48) a. Ta ji lai le yi feng xin.
3sg post come ASP one CL letter
- b. Ta ji le yi feng xin lai.
3sg post ASP one CL letter come
'S/He posted one letter (to the speaker).'

Obviously, Baker and Larson's approaches which assume the variants in the dative alternation are thematic paraphrase cannot be extended to those alternations with variants differing in meaning.

1.2.1.5 Rappaport Hovav and Levin

Efforts have been made within the projectionist theories to capture the differences in meaning among the argument alternation variants, for example, Levin (1993), Rappaport & Levin (1988, 1995, 1998, 2010), Knootz-Garboden (2009), Beaver & Knootz-Garboden (2012), Wechsler (2015), among others. Here I review some of Levin and Rappaport Hovav's work, which claims that verb meaning determines syntax, as an example in dealing with multi argument realization in the projectionist camp.

In Levin (1993), she claimed that the variable argument structure observed in human languages are linked to verb meaning and are predictable. Specifically, verbs can be divided, according to their lexical semantics, into sets that predict the various syntax structures in which they may appear. For example, identifying a verb as a member of the "change of state" class might predict its

appearance in intransitive (“The vase broke”) and transitive (“John broke the vase”) frames, and its non-appearance in “there insertion” contexts (“*There broke a vase”). This means that the same verb in each variant of a particular argument alternation has a different meaning. For example, the verb ‘load’ in the locative variant has a lexical semantic representation in (49-a), while the one in the *with* variant is represented as in (49-b) in the lexicon.

- (49) a. load: [x CAUSE [y TO COME TO BE AT z] /LOAD]
- b. load: [[x CAUSE [z TO COME TO BE IN STATE]] BY MEANS OF [x CAUSE [y TO COME TO BE AT z]] /LOAD]
- (Rappaport & Levin 1988: 26)

The overlapping of the lexical semantic representation captures the intuition that the two variants are near paraphrase. Whereas the difference in the representation captures the slight meaning difference that the *with* variant entails the locative variant, but not vice versa.

In Rappaport Hovav and Levin (1998), they propose a series of rules and conditions, including “event structure templates”, “canonical realization rules”, “template augmentation” and “well-formedness condition”, in order to explain why verbs can have variable meanings that enable them to project different syntax structures.

They assume that each verb has a lexical semantic representation, which involves an “event structure template” and a constant associated with this template. The event structure templates are composed of a list of primitive predicates such as ACT, CAUSE, BECOME, etc. Specific combinations of these primitive predicates lead to different templates, which determine the ‘structural meaning’ of the verb, as is quoted from them in (50).

- (50) “The structural part of a verb’s meaning is that part which is relevant to determining the semantic classes of verbs that are grammatically related.”

(Rappaport Hovav & Levin 1998: 106)

The inventory of event structure templates is provided by the Universal Grammar and is limited, whereas the set of constants is open-ended. Each constant

has an ontological category (Jackendoff 1990), drawn from a fixed set of types such as STATE, THING, PLACE, MANNER. A constant is associated with the event structure templates via “canonical realization rules”. Basically, the constants may either be modifiers of predicates (noted as subscript) or serve as arguments of predicates. The event structure templates associated with the constants are illustrated below, where the italicized material in angle brackets represents the constant.

- (51) a. [x ACT_{<MANNER>}] (activity)
 b. [X <STATE>] (state)
 c. [BECOME [X <STATE>]] (achievement)
 d. [[x ACT_{<MANNER>}] CAUSE [BECOME [y <STATE>]]] (accomplishment)
 e. [x CAUSE [BECOME [y <STATE>]]] (accomplishment)

(Rappaport Hovav & Levin 1998: 108)

The particular instantiation of the constant determines the idiosyncratic meaning of the verb, which distinguishes that verb from other members of the same class. For example, causative change of state verbs share the lexical semantic template in (52), with the various members of the class being derived by a particular instantiation of the constant *STATE*, as illustrated by the representation of causative *dry* in (53) :

(52) [[x ACT] CAUSE [BECOME [y <STATE>]]]

(53) [[x ACT] CAUSE [BECOME [y <DRY>]]]

(Rappaport Hovav & Levin 1998: 107)

Rappaport and Levin attribute the widespread variation in verb meaning to Template Augmentation, which allows more complex event structure templates to be built on simpler ones. However, Template Augmentation can only create meanings that are consistent with the basic inventory of lexical event structure

templates, as is stated in (54).

- (54) **Template Augmentation:** Event structure templates may be freely augmented up to other possible templates in the basic inventory of event structure templates.

(Rappaport Hovav & Levin 1998: 111)

For Template Augmentation to proceed successfully, two well-formedness conditions on syntactic realization, shown in (55) and (56), must be satisfied.

- (55) **Subevent Identification Condition:** Each subevent in the event structure must be identified by a lexical head (e.g. a V, an A, or a P) in the syntax.

(Rappaport Hovav & Levin 1998: 112)

- (56) **Argument Realization Condition:**

- a. There must be an argument XP in the syntax for each structure participant in the event structure.
- b. Each argument XP in the syntax must be associated with an identified subevent in the event structure.

(Rappaport Hovav & Levin 1998: 113)

These statements reflect common assumptions in the literature that elements in the semantic representation must be syntactically encoded and that the syntactic representation must be fully interpreted semantically.

We have seen that the English verb *sweep* can appear in different syntactic environments. In Rappaport and Levin's view, this reflects the fact that *sweep* has multiple meanings. And the multiple meanings are achieved by the template augmentation introduced above. Basically, the *sweep* in 'John swept the floor.' is associated with an activity template, as in (57).

- (57) [x ACT_{<SWEEP>} y]

This basic template is a subpart of several other event structure templates, thus it can be augmented to give these other templates as long as the well-formedness conditions are met. For instance, it can be augmented to an accomplishment template as in (58), thus creating a resultative construction as in (59), where

the head of the resultative phrase identifies the second subevent, satisfying the Subevent Identification Condition, and the DP *the floor* is an argument of this subevent, so that the Argument Realization Condition is also satisfied.

(58) [[x ACT_{<SWEEP>} y] CAUSE [BECOME [y <STATE>]]

(59) John swept the floor clean.

Rappaport and Levin’s proposal about event structure templates augmentation semantically captures the variable verb meanings. Nevertheless, in order to map the semantic representation to syntax, they have to independently posit the linking theory, i.e. the well-formedness conditions. Besides, they additionally propose four linking rules for mapping the arguments in the semantic representation to the syntactic representation, listed in (60).

- (60)
- a. Immediate Cause Linking Rule. The argument of a verb that denotes the immediate cause of the eventuality described by that verb is its external argument.
 - b. Directed Change Linking Rule. The argument of a verb that corresponds to the entity undergoing the directed change described by that verb is its internal argument.
 - c. Existence Linking Rule. The argument of a verb whose existence is asserted or denied is its direct internal argument.
 - d. Default Linking Rule. An argument of a verb that does not fall under the scope of any of the other linking rules is its direct internal argument

(Levin & Rappaport Hovav 1995: 135, 146, 153, 154)

These solutions, including an independent compositional semantic representation, a paralleled syntactic representation as well as some linking theory, render a very stipulative and redundant theory, which violates an assumption held by many linguists that syntax is the only generative system of the human language faculty, just as Lin (2004: 29) comments, “positing an independent level of semantic representation essentially adds an ‘extra degree of freedom’

in formulating theories of argument structure, freedom that, if not properly constrained, will result in arbitrary stipulations.”

1.2.1.6 Summary for the Projectionist View

In summary, the projectionist approaches have obvious disadvantages in accounting for the phenomenon of multiple argument realization, which is widely observed cross-linguistically. They either assume that one structural variant that a certain verb projects is the basic and the other is derived from it, ignoring the fine-grained differences in meaning between the variants which often accompany these alternations, as well as differences in their information structure, or have to introduce a series of mapping rules or some form of lexical redundancy rules, which specify how certain well-defined classes of words are systematically related to each other. In other words, if we attempt to solve the issues of multiple argument realization in the projectionist framework, we may end up with either an unexplanatory or an undesirably redundant theory.

1.2.2 Constructionist Approach

Unlike projectionist approaches, constructionist approaches account for the multiple argument realization in the opposite direction.

Constructionists believe that lexical items possess no syntactically relevant information which could constitute a constraint on their insertion possibilities. The lexical entry of the verb registers only its core meaning or “root”. The syntactic structures themselves represent the event-based meanings. Associating a root with particular positions or substructures results in the meaning divergence. In other words, it is the syntactic structures that determine the meaning rather than the verb’s meaning that determines the structure. As Levin and Rappaport (2005: 190) comment, in constructionist theories, “the verb is integrated into the construction, rather than determining the construction, and the construction itself licenses some of the complement structure.”

Note that although constructionist theories allow free building of syntactic terminals, it does not mean that any lexical item can be inserted in any terminal. And indeed, empirically, not every verb can appear in all syntactic contexts. This is explained by ‘compatibility’ between the core meaning of the verb and the construction meaning.⁹

⁹For this point, also see the review on Borer in Section 1.2.2.2

There are various instantiations of the constructionist approach, including the “traditional” constructionist approach, represented by Goldberg (1995, 1997, 1998), and the “neo-constructionist” approach, represented by Hale & Keyser (1993), Kratzer (1996), Borer (2005), Erteschik-Shir & Rapoport (2004), Hoekstra (1992), Ritter & S. T. Rosen (1998), Travis (2010), Ramchand (2010), Folli & Harley (2013) etc.

Among these proposals, the traditional constructionist theory represented by Goldberg is in essence a cognitive theory, which does not draw a categorical distinction between lexicon and grammar. It argues for the existence of Argument Structure Constructions, which are pieces of syntactic frames associated with certain meanings, memorised just as words. I do not delve further into this type of theory because it is not relevant to the approach proposed in this thesis. The main focus of this section is on the neo-constructionist approach. Neo-constructionists consider the constructions as fragments of syntactico-semantic structures made available by the Universal Grammar, and that the inventory of grammatical configurations in any given language is constructed from these fragments (Borer 2005*a*: 14). Hence, the neo-constructionists tend to reduce the properties attributed to lexical items to a minimum and propose elaborated syntactic structures with various functional projections. They view the meaning of the constructions as compositionally derived from the meaning of the root together with the meaning encoded in the elaborated syntactic structure. I review a couple of representative proposals in the following Sections 1.2.2.1 to 1.2.2.4.

1.2.2.1 Precursors of neo-constructionism: Hale and Keyser

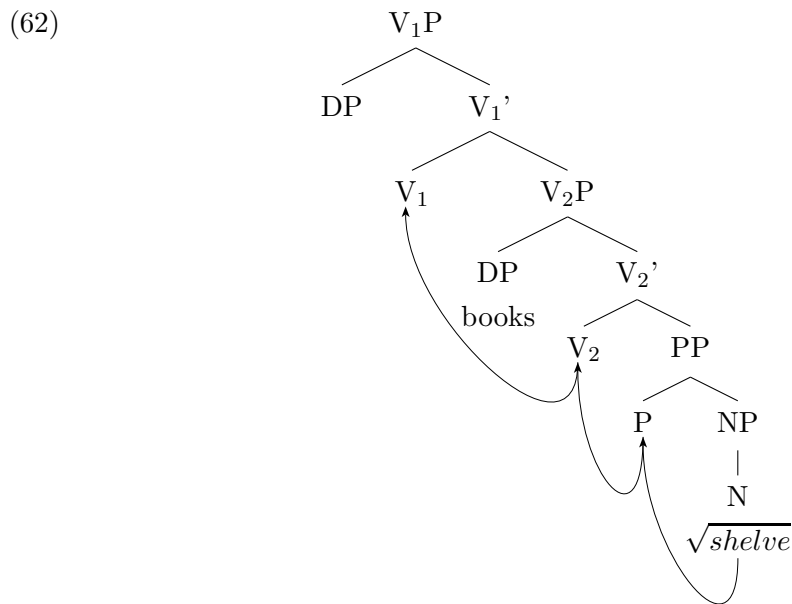
Hale and Keyser’s (1993, 1997*a*, 1997*b*, 2002, 2013) theory can be viewed as a precursor to the neo-constructionist approaches. According to them, argument structure is itself a syntax (Hale & Keyser 1993: 2), as is quoted in (61).

- (61) “Argument structure is determined by properties of lexical items, in particular, by the syntactic configurations in which they must appear. There are just two relations, complement and specifier, defined so as to preclude iteration and to permit only binary branching.”

(Hale & Keyser 2002)

Specifically, they identify a small number of major semantic classes of verbs and assume that the verbs in each class are lexically associated with a particular syntactic structure that configurationally encodes the semantic relations between a verb of that type and its arguments. They call these “lexical syntactic structures”.

For example, a denominal verb, *shelve*, is represented by four syntactic heads: N, P and two Vs, as is illustrated in (62).



The verb *shelve* is derived by successive head movement and incorporation from the root under N to P and the two V heads, as is shown by the arrows. All of the four heads have meanings. N is the endpoint of the action. P represents a locative relation like the preposition *on*. V_1 represents CAUSE and V_2 BE/BECOME. The theta-roles of the argument is determined by their position in the structure. For example, the spec of V_1 is automatically interpreted as Agent while the spec of V_2 is interpreted as Theme.

Hale and Keyser’s proposal of lexical syntactic structures is crucial to the shift to constructionist approaches in the study of argument structure. These lexical syntactic structures actually extend the VP shells proposed by Larson (1988), but they are more constructional in that they do away with UTAH and assume thematic roles can be read off the syntactic structure. The verb meaning is composed by the root and the layers of light verbs built above the root. These

all share the spirit of neo-constructionism that the meaning is compositional based on the syntactic structure. Although starting to formulate the theory in a constructionist view, Hale and Keyser still assume that the lexical syntactic structures occur in the lexicon, hence they term the lexical syntactic structures as L-syntax, differing from the real syntax component, S-syntax. In the neo-constructionist work, which we describe next, the lexicon is devoid of generative power to a much larger extent.

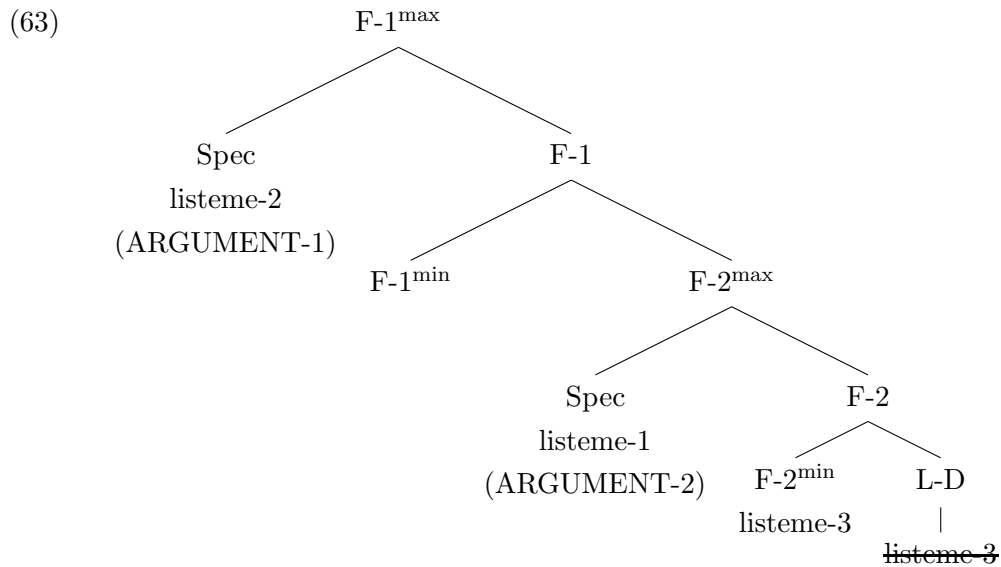
1.2.2.2 Radical Neo-constructionist Proposal: Borer

Borer is representative of the radical neo-constructionist view. According to her, the lexicon can be completely abandoned as a module of the grammar. A lexical item (in her terms ‘**listeme**’) is a unit of the human conceptual system. The reservoir of listemes is called **encyclopedia**. The listemes are simply pairs of sound and meaning, in which sound is a phonological index and meaning refers to “the appropriate package of conceptual properties associated with such an index” (Borer 2005*a*: 30). It is noteworthy that she proposes that the encyclopaedic listemes are devoid of any syntactic properties, including the syntactic category, the syntactic or morphological insertion environment or morphological marking of any sort, be it derivational or inflectional. In other words, encyclopaedia is merely a storage of sound-meaning pairs without any power to generate recursive sentences. The generating power resides only in the **grammar**.

Borer suggests that the **grammar** itself has a functional lexicon, which contains two types of grammatical formatives: **f-morphemes** (independent grammatical functional formatives), such as *the*, *will*, etc. and (phonologically abstract) **head features**, for example, <pst> for past tense. The latter requires the support of some head, which triggers obligatory head movement. It is these grammatical formatives that burden all the computation in generating various structures.

Briefly, in Borer’s architecture of grammar, the merger of some listemes from the conceptual array¹⁰ gives rise to a Lexical Domain (L-D). Then functional heads are successively merged with the L-D, giving rise to the structure in (63):

¹⁰By ‘conceptual array’, she means a selection of unordered listemes.



(Borer 2005*b*: 13)

According to her, the specific merger of listeme-1 and listeme-2 as [Spec,F-1] or [Spec, F-2], respectively, will result in a particular interpretation (‘subject’, ‘object’, etc. in some well-defined sense). Listeme-3, by virtue of having merged a copy in some intermediate head, becomes the head of L-D. If L-D is categorized as a V by some appropriate functional structure (such as Tense), listeme-3 becomes a verb. If L-D is categorized as N, it becomes a noun, etc. (Borer 2005*a*, 28; 2005*b*, 12).

She also points out that the grammar as it now stands gives us no way to determine the specific internal architecture or the relative order of functional nodes. On the other hand, the existence of a functional structure, the fixed hierarchical ordering of at least some functional projections with respect to each other, and the placement of some constituents in functional specifiers, can be shown to be an empirical fact. (Borer 2005*b*: 11)

The semantic composition works in the following way: the use of a listeme returns a meaning based fundamentally on its conceptual value. And the syntactic structure will also return an interpretation, “based on combinatorial, computational principles of interpretation assignment, as linked with the structural and the formal-semantic properties of functional vocabulary and syntactic structure.” (Borer 2005*b*: 9)

Under such a treatment, the differences between, for example, transitive, intransitive and middle *break* are no longer to be determined by distinct but

related lexical entries of *break*, but rather by the functional structure in which *break* is embedded. Specifically, in the context of a structure licensing two arguments, *break* would be transitive, but in the context of a structure licensing only one argument, it would be either a middle or an intransitive, depending on the structure projected. (Borer 2005*b*: 6)

Last but not least, Borer also argues for a ‘making sense’ component in the cognitive place. This component would allow the world knowledge to interfere with the felicity of the structure.

In the projectionist systems, s-selection restrictions specified on the lexical item are normally appealed to in order to exclude the infelicitous argument structure combinations. For example,

(64) #John drank (up) the steak.

(65) #John ate (up) the water.

According to the projectionists’ view, the oddity of (64)-(65) derives from the s-selection properties of *drink* and *eat*: the former requires a theme bearing [+liquid] feature while the latter requires one with a [+solid] feature.

Borer argues that such information as selectional restrictions should be ascribed to the restrictions born of world knowledge rather than grammar. Our world knowledge tells us that drinking is a mode of consumption associated with liquids, and that eating is a mode of consumption associated with solids. As she further points out, the oddity of (64)-(65) can be overridden by “modifying our presuppositions regarding the objects consumed (e.g. a liquefied steak can be drunk; frozen water can be eaten), or by modifying our presuppositions about the consumption mode” (Borer 2005*b*: 7). The metaphoric use of *drink* and *eat* clearly shows this coercion effect of the world knowledge.

(66) She drank him with her eyes.

(67) She ate him with her eyes.

(Borer 2005*b*: 7)

On the contrary, a projectionist approach would find it much harder to explain such examples, which obviously violate the existing selectional restrictions.

According to Borer, the ‘making sense component’ is neither the conceptual system that harbours the listemes nor the grammar that generates the structure. Instead, this component compares the outputs of the conceptual system and the grammar. The extent to which these two outputs match each other would decide the felicity/oddity of the sentence, as is illustrated in Borer’s words:

“The overall felicity of any linguistic behaviour would emerge as a direct function of the extent to which these two outputs match each other. It is in the nature of things that the two outputs will not always match, or at least, not in a straightforward way. In the event of a mismatch, the grammar will always prevail. The interpretation put forth by the conceptual component can and will stretch, as much as possible within the confines of the concept under consideration, so as to match the rigid, absolute interpretational constraints circumscribed by the grammar. The more the conceptual system stretches, the more the utterance will appear ‘odd’ or metaphoric, and at times, the oddity may be so extreme that it becomes difficult to distinguish from a straightforward case of ungrammaticality, where by ‘ungrammatically’ I would like to refer exclusively to the effect created by the violation of formal computational principles.”

(Borer 2005*b*: 9)

1.2.2.3 Other Neo-constructionist Proposals

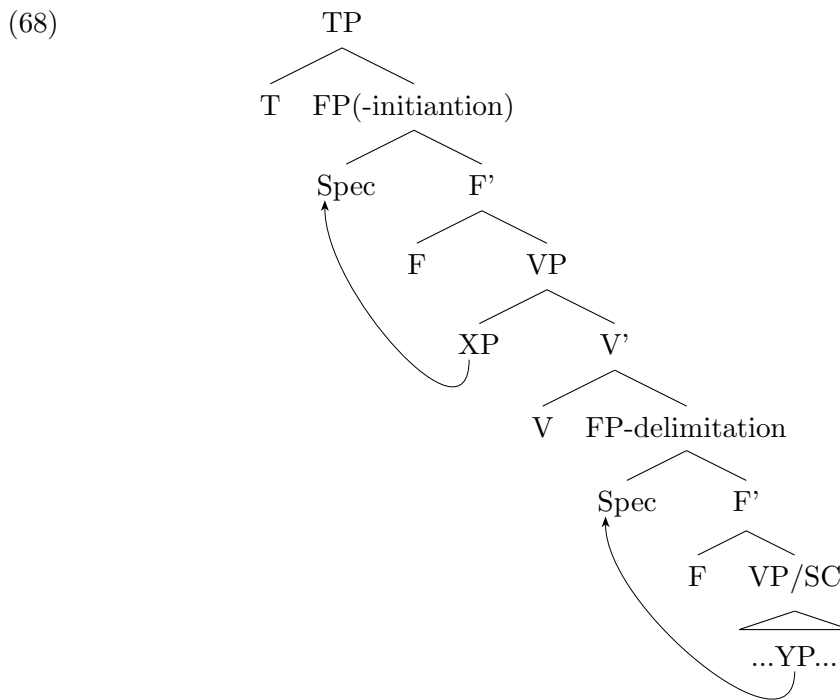
Neo-constructionist’s proposals vary with respect to how much information is allocated to the lexical root and how much is related to the functional structure. Apart from radical representatives such as Borer, others choose a moderate view, which allows the root to contain some syntactic information ranging from category information to syntactic selectional information and degrees of argument-structure information, depending on the particular theory. (Ramchand 2010: 11)

Sharing the basic spirit that the semantics reads off the structure, linguists on the neo-constructionist camp have proposed different versions of functional projections for any specific effect. For example, Borer posits an aspectual quantity phrase on top of the VP and is responsible for both telicity and object quantity effects. Now I show a few more neo-constructionist models, including Ritter & Rosen (1998), Travis (2010) and Ramchand (2010), to further illustrate the general idea of the neo-constructionist program.

Ritter and Rosen (1998)

Ritter & Rosen (1998) propose two functional projections **FP-initiation** and **FP-delimitation** to encode event information.

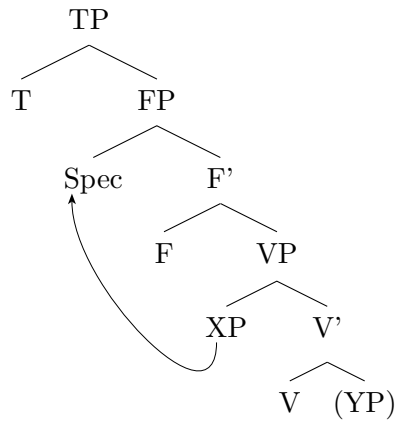
In their view, events that have an endpoint (**D-event**) such as accomplishment and achievement are syntactically represented in (68). The object raises to the Spec of the lower FP to receive the delimiter event role. The external argument raises to the Spec of the higher FP where it receives the event role of initiator. The initiator subsequently raises to the so-called subject position, i.e. the position in which nominative case is assigned. If there is no external argument, the object may raise further to the subject position.



(Ritter & Rosen 1998: 149)

In comparison, undelimited events such as activities and states have the syntactic representation in (69), where delimiting FP is missing. According to Ritter & Rosen, when there is no delimiting FP, the object (if there is one) does not receive a delimiter role. Besides, the higher FP cannot assign the initiator role. Instead, it takes on the function of topic. (Ritter & Rosen 1998: 150)

(69)

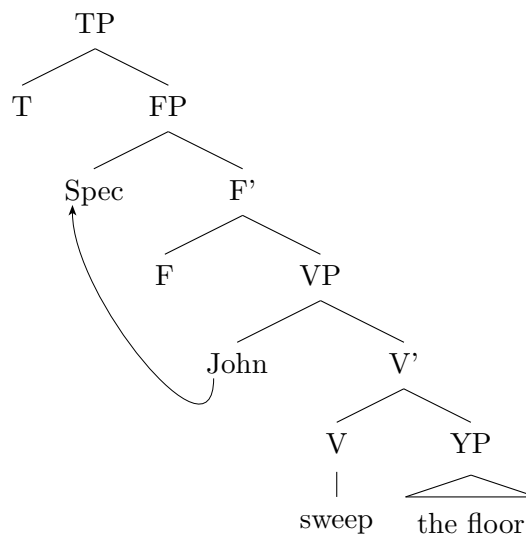


(Ritter & Rosen 1998: 150)

Following their approach, the event composition behaviour possessed by verbs can be captured by adding a delimiting FP to the structure. For instance, a basic activity (70) is represented as in (71).

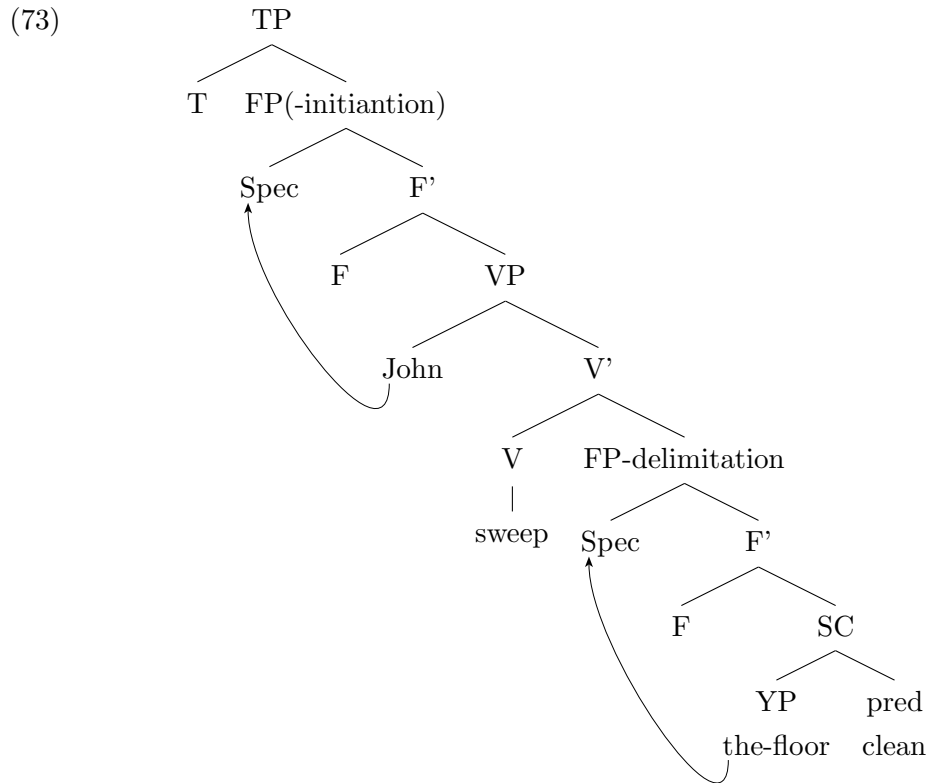
(70) John swept the floor.

(71)

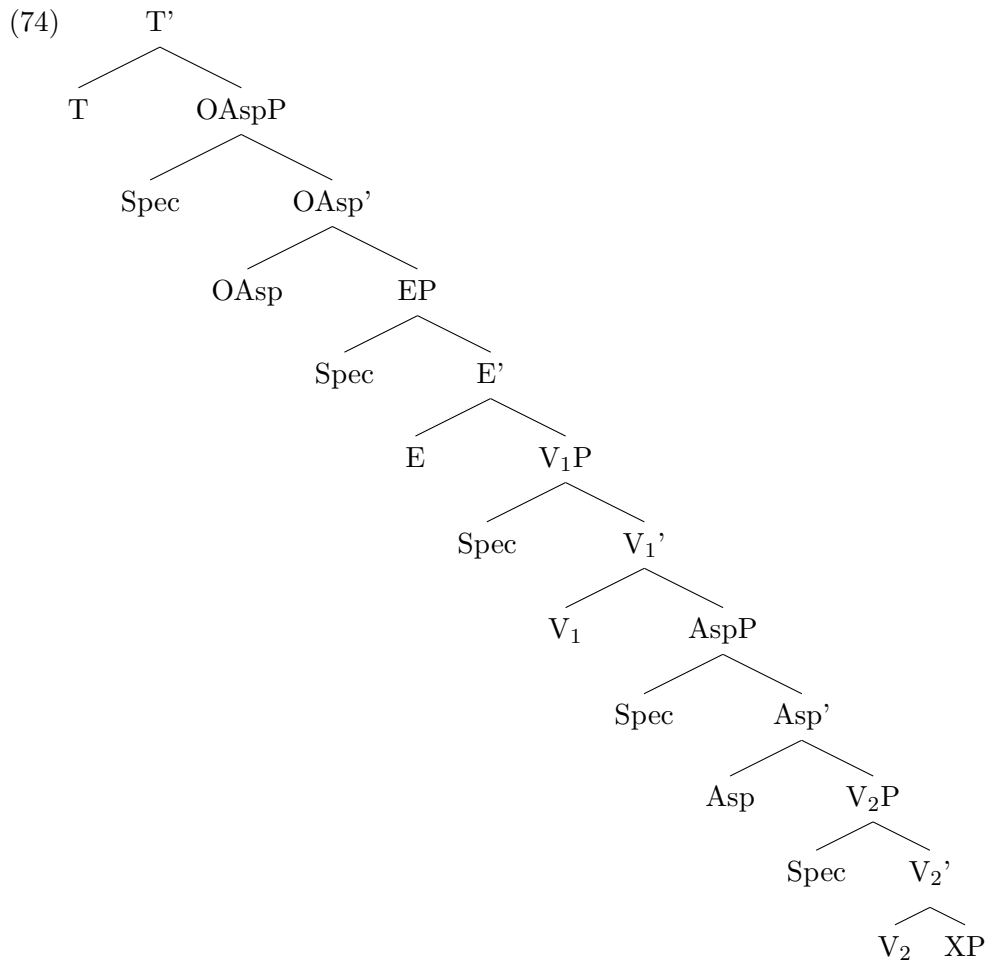


Based on (71), a resultative secondary predicate *clean* can be added along with the delimiting FP, hence deriving (72). As the tree diagram in (73) shows, the object *the floor* starts as the argument of the secondary predicate, and when it moves to the Spec of delimiting FP, it receives its delimiting role of delimiter.

(72) John swept the floor clean.

**Travis (2010)**

Travis (2010) proposes three functional projections: ASP, OAspP and EP. AspP, standing for aspectual phrase, is sandwiched between VP shells and correlates with telicity. OAspP, representing outer aspect phrase, is used to accommodate the viewpoint aspect. And EP, corresponding to event phrase, is projected higher than VP representing the boundary between L-syntax and S-syntax in Hale and Keyser's sense. The articulated phrase structure is represented in (74):



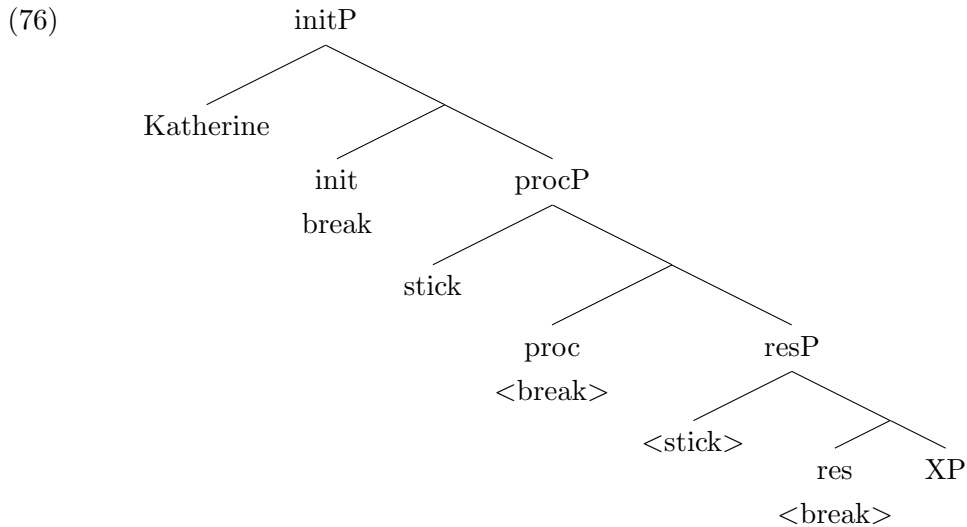
(Travis 2010: 5)

We revisit Travis' system later in Section 3.3.2.4, when we build up our own theory.

Ramchand (2010)

Ramchand (2010) decomposes the traditional category V into three subevental projections, Init(iat)P, Proc(ess)P and Res(ult)P and suggests that the so called external and internal arguments are merged in the specifier positions of the relevant projections. For example, a telic transitive verb *break* (as in (75)) is analysed as an articulated structure in (76).

(75) Katherine broke the stick.

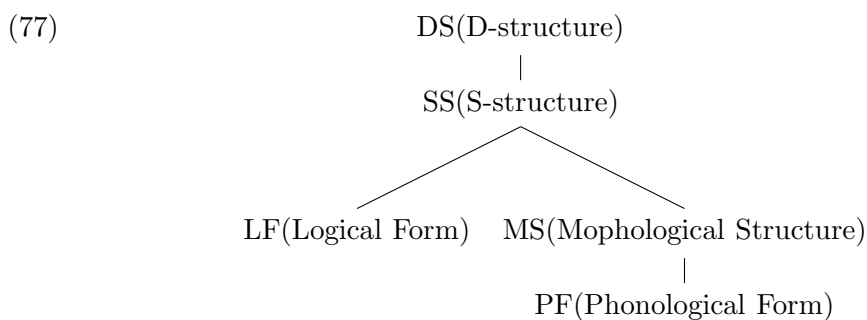


We also come back to Ramchand's proposal in more detail in Section 3.2, where the grounding of our own theory is discussed.

1.2.2.4 Distributed Morphology

Neo-constructionists' assumption of an extremely impoverished lexicon has much in common with the architecture of grammar in Distributed Morphology (Halle & Marantz 1993, Halle & Marantz 1994, Harley & Noyer 1999, Embick & Noyer 2007, Harley 2009).

The theory of Distributed Morphology proposes that all complex objects, be it words or phrases, are generated by a single generative system. In other words, the derivation of words and syntactic objects occurs in the same place rather than in different modules of the grammar (lexicon and syntax). All the words and phrases are the output of the syntax. (77) illustrates the architecture of the model of grammar in Distributed Morphology:



(Halle & Marantz 1993: 114)

Basically, Distributed Morphology asserts that the syntax generates hierarchical structures from a finite set of primitive elements. Linear ordering of nodes in this hierarchical structure is, however, plausibly a relation that is defined by operations on the PF branch (Embick & Noyer 2007: 293).

The units, which are subject to the syntactic operations such as move and merge, are called “morphemes”. Morphemes are the terminal nodes of the tree diagrams ordinarily used to illustrate the syntactic constituent structure. Each morpheme is a complex of features, including phonological and syntactico-semantic features. The basic inventory of syntactic terminals is divided into two types, Abstract Morphemes and Roots, as Embick and Noyer (2007) describe:

(78) Terminals

- a. Abstract morphemes. These are composed exclusively of non-phonetic features, such as [Past] or [pl], or features that make up the determiner node D of the English definite article eventuating as *the*.
- b. Roots. These include items such as \sqrt{Cat} , \sqrt{Ox} , or \sqrt{Sit} , which are sequences of complexes of phonological features, along with, in some cases, non-phonological diacritic features. As a working hypothesis, we assume that the Roots do not contain or possess grammatical (syntactico-semantic) features.

(Embick & Noyer 2007: 295)

It is also assumed that roots can never appear without being categorized, which means they should always be in a local relationship with one of the category-defining functional heads (v, n, etc.). The assumptions of roots and abstract morphemes are in line with Borer’s (2005*a*, 2005*b*) listemes and functional projections, introduced in Section 1.2.2.2.

Within the Distributed Morphology framework, some aspects of word formation arise from syntactic operations such as head movement, which occur in the syntax proper, while other aspects of word formation are accounted for by operations that occur on the PF branch. That’s actually how the name Distributed Morphology comes into being (Embick & Noyer 2007: 293).

Other important concepts in Distributed Morphology are Vocabulary Insertion and Underspecification.

Vocabulary Insertion is a mechanism that supplies phonological features to the abstract morphemes. The Vocabulary is the list of the phonological exponents of the different abstract morphemes of the language, paired with conditions on insertion. Each such pairing is called a vocabulary item (Embick & Noyer 2007: 297-298). Take the plural nouns in English as an example. Suppose the [pl] feature is present on a terminal node which is represented as ‘Num’. The regular phonological exponent of the English plural is /-z/, and this is formally expressed by the vocabulary item in (79):

$$(79) \quad z \leftrightarrow [\text{pl}]$$

The effect of (79) is to add /-z/ to the node ‘Num’. By assumption, Vocabulary Insertion only adds phonological features to a node, but it does not delete or erase the abstract features present on that node. Besides, Vocabulary Insertion takes place in structures that have been assembled by the syntax, namely in the PF branch in digram (77). Hence, the Vocabulary Insertion is also called Late Insertion.

Underspecification asserts that in order for a Vocabulary Item to be inserted in a terminal node, the identifying feature of the Vocabulary Item must be a subset of the feature at the terminal node (Halle & Marantz 1994: 276). That is to say, the terminal nodes that are the sites for insertion are fully specified with syntactico-semantic features. However, the vocabulary items that apply to these positions need not be fully specified. This allows a single phonological exponent to appear in more than one syntactico-semantic context. For example, the person/number prefix for the first person and the second person plural objects in the Athabascan language Hupa are the same, which is *noh-*. The relevant plural nodes have the feature bundles as in (80). And there is a vocabulary item as in (81)¹¹.

$$(80) \quad \text{a. } [+1, +\text{PL}, +\text{OBJ}]$$

$$\text{b. } [+2, +\text{PL}, +\text{OBJ}]$$

$$(81) \quad \text{noh} \leftrightarrow [+\text{PL}, +\text{OBJ}]$$

¹¹The example is adapted from Embick & Noyer (2007: 300).

The identifying feature of the vocabulary item (81) is a subset of the feature at the terminal nodes in (80), therefore, *noh* can be added to both nodes in (80).

Although the detailed technical tools used in Distribute Morphology are not necessarily adopted by other neo-constructionists, the basic spirit behind Late Insertion and Underspecification are clearly shared: lexical items are inserted later than the building of the structure, and insertion needs to meet certain feature matching requirements.

1.2.3 Interim Summary

So far I have reviewed the main literature on the debate between the Projectionist and Constructionist approaches, as well as their solution to the phenomenon of multiple argument realization.

Projectionist theories inevitably lead to a lot of ‘implausible verb senses’ (Goldberg 1995: 9). As Goldberg points out, to account for (82), one has to claim that there exists a special sense of *bake* that requires three arguments. In other words, the meaning of *bake* in (82) involves something like ‘X INTENDS to CAUSE Y to HAVE Z’. In contrast, the *bake* in (83) has a different semantic representation, which entails only two arguments and may involve something like ‘X CAUSE Y to APPEAR’.

(82) Jane baked him a cake.

(83) Jane baked a cake.

Then we would expect to see some languages that use two unrelated verb stems to express these two senses. However, to the best of our knowledge, no such example or examples of this sort can be found in other languages.

Projectionist theories also incur circularity in tackling the puzzling behaviour of variable verbs (Goldberg 1995: 11). For example, to account for the variable behaviour of *kick* in (84) and (85), one needs to assume that *kick* in (84) semantically requires two arguments, hence it occurs in a transitive sentence; *kick* in (85), however, requires three arguments, hence it fits in a ditransitive construction.

(84) John kicked the ball.

(85) John kicked Bill the ball.

A problem in this line of reasoning is that the claim that *kick* has an n-argument sense is on the basis of the fact that *kick* occurs with n complements; however, it is simultaneously argued that *kick* occurs with n complements because it has an n-argument sense. This is where the circularity arises.

Constructionist theories, on the contrary, eliminate wholesale polysemy and multiple lexical entries for verbs which appear in various syntactic contexts. They are more dynamic in explaining the multiple argument realization phenomenon. The differences between the variants of argument alternations, such as the transitive, intransitive, and middle *break*, are to be attributed to properties of the associated structures, rather than to properties of distinct (related) lexical entries. Constructionist theories also allow for a natural solution to the multiple argument realization taking the form of event composition: in a VP, the materials, which can not be assumed to be licensed by the basic meaning of the verb, should find their source in the syntax. Besides, associating the argument structure with the syntax rather than the verb meaning avoids the circularity of asserting that a verb is an n-place predicate, and therefore has n complements in syntax, when and only when it appears with n complements.

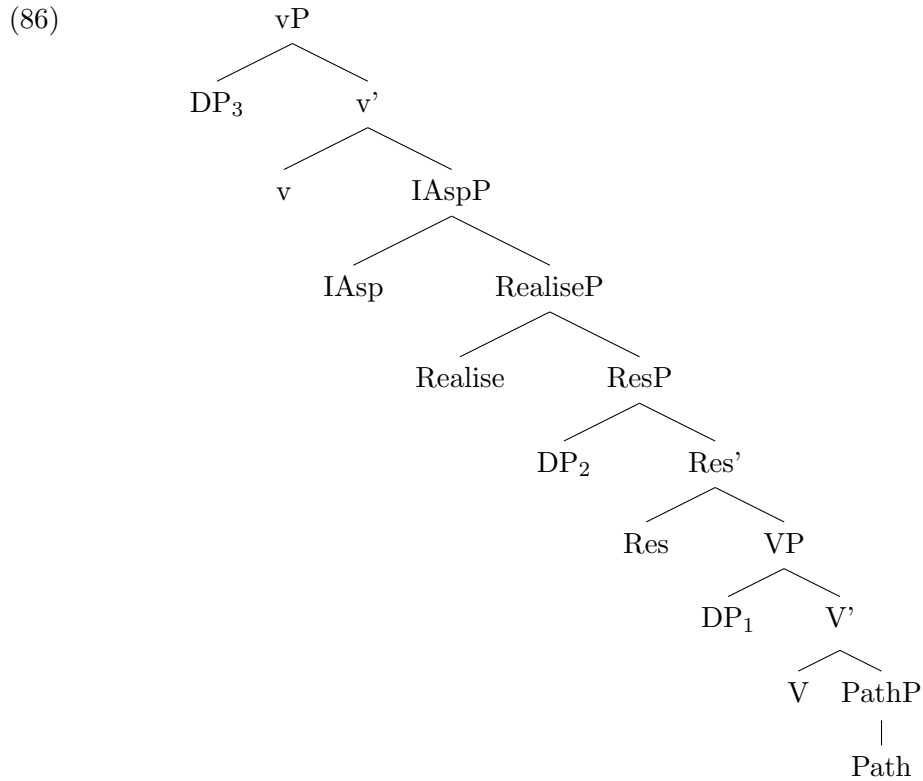
Delimiting the lexicon also makes the constructionism superior to the projectionism in terms of economy. Projectionists have to assume a very structured semantic representation formed in the lexicon, as well as a hierarchical configuration in the syntax, connected via specific ‘interface’ or ‘linking’ rules. This has the consequence that the same type of information is represented twice (once in the lexicon, and once in the syntax). Constructionism, on the other hand, reduces the lexical operations to the minimum and attributes the main generative power to the syntax, totally eliminating the linking rules, hence it is more economical.

1.3 Key Claims

In this thesis, I work within the neo-constructionist framework to analyse the directional serial verb constructions in Mandarin Chinese and solve the multiple argument realization puzzle illustrated in the relevant data. Since there

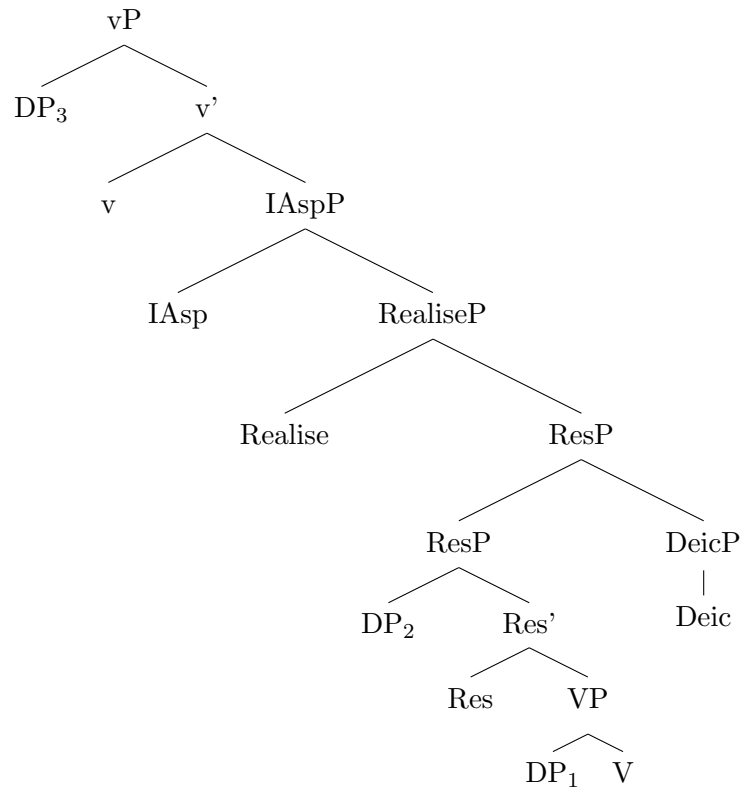
are various proposals of functional projections among neo-constructionists for different purposes, I do not follow exactly a particular system. Instead, I propose my own articulated phrase structure based on the previous works. As a preview, I provide a brief overview of my theory in this section.

Basically, I will be proposing the following functional projections: **ResP** for resultative phrase, **PathP** for path phrase, **DeicP** for deictic phrase, **RealiseP** for accommodating a special Chinese aspectual morpheme *le*, and **IAspP** for inner aspect phrase. These projections as well as the VP shells form the hierarchical structure as in (86).

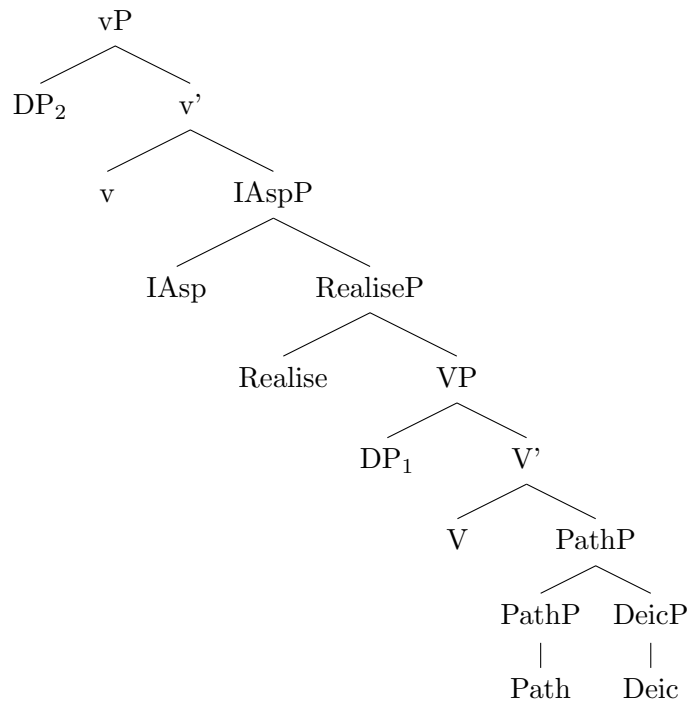


I will further argue that ResP and PathP cannot co-occur and that DeicP is an adjunct to either ResP or PathP. Therefore, (86) can be re-represented as (87) and (88).

(87)



(88)



The crucial characteristics of this theory are:

1. The lexicon contains lexical items which are specified with phonological and semantic features. Each lexical item also bears a categorial feature, which is the only syntax-related feature they are specified with. The categorial feature is used to license the insertion of this lexical item into the syntax. This is a non-radical version of the neo-constructionist view on the lexicon.
2. The motion/displacement verbs and the directional verbs are inserted under relevant syntactic nodes according to the feature specification on the lexical item and the terminal node, a similar idea to the concept of **underspecification** in Distributed Morphology. One lexical item can be inserted under different functional heads. For instance, a directional verb may be under Res or Path, hence, different word orders (in other words, argument alternations) are derived.
3. vP, VP and ResP are similar to Ramchand's (2010) *initP*, *procP* and *resP* respectively¹². The external and internal arguments are also both merged in the specifier position of these phrases, as is proposed by Ramchand.
4. The IAspP is similar to Travis' (2010) proposal of *AspP*¹³. It is correlated with situation aspect, in particular, telicity.
5. *RealiseP* is a phrase to signify that the result state, denoted by the ResP (Result Phrase) below it, has been realised. The phonological realization of the Realise head in Mandarin is the morpheme *le*, traditionally viewed as an aspect marker.

Arguments and evidence for these functional projections, and the hierarchical structures they construct, come from a variety of directions discussed throughout the thesis.

1.4 Outline of the Thesis

The following serves as a guide to the rest of this thesis:

Chapter 2 provides empirical support for my theory of the articulated VP with data drawn from Mandarin Chinese. I first review the descriptive literature on the Mandarin DSVCs, which takes for granted that they are compounds.

¹²See Section 1.2.2.3 and Section 3.2 for the review of Ramchand's work.

¹³See Section 1.2.2.3 and Section 3.3.2.4 for the review of Travis' work.

I argue, against this view, that DSVCs involve more than one syntactic item, and hence are not compounds. Then I show that Mandarin DSVCs have seven serialising patterns. Some of these serialising patterns allow word order alternations while others do not. I offer the key data for all the serialising patterns to illustrate their syntactic and semantic properties. Especially for the patterns that allow word order alternations, I also demonstrate the syntactic and subtle semantic differences between each variant. These facts provide the basic evidence for the proposed architecture of the grammar.

Chapter 3 builds up my theory based on previous works. First, the limitation of some early proposals, which intend to tackle the empirical puzzles we reveal in Chapter 2, is discussed. Then I present the main theory of this thesis. I demonstrate how this theory is connected to various previous works such as Ramchand's *first phase syntax*, Mandarin resultatives, the realization of aspects in syntax, spatial PPs and verb-particle constructions.

Chapter 4 applies the theory proposed in Chapter 3 to solve the problems addressed in Chapter 2. Meanwhile, the theory is also refined.

Chapter 5 focuses on the cross-linguistic differences in encoding motion and direction between Mandarin and Cantonese. A parameter is proposed to cover the observed differences between the two languages.

Chapter 6 is the conclusion of the thesis, in which I summarise the work and suggest directions for future research.

Chapter 2

Empirical Data

This chapter addresses the empirical issues of the directional serial verb constructions in Mandarin Chinese. Specifically, Section 2.1 discusses the formation and grammatical status of DSVCs, justifying the terminology we use for these constructions, and introduces all the serialising patterns of DSVCs. Section 2.2 discusses the word order alternations observed in certain DSVCs, which resembles the phenomenon of Multiple Argument Realization introduced in Chapter 1. Section 2.3 and Section 2.4 examine the properties of the DSVCs that do not show word order alternations.

2.1 Overview

In this section, I first discuss the grammatical status of the DSVCs, arguing against the point of view that these verb clusters are compounds, as is assumed in the descriptive literature. I argue that the components in a DSVC enter syntax as separate lexical items rather than a readily formed compound from the lexicon. I also show that the verbhood of the components in a DSVC is not equal, hence indicating a categorial difference between these components. However, I disagree with the view that simply re-analyses them as V+Prep constructions. I suggest that the asymmetry of verbhood among the components rises from structural reasons. At the end of this section, a sketch of the serialising patterns of the DSVCs in Mandarin Chinese is presented as the basis for more complex data in the rest of this chapter.

2.1.1 The Descriptive Literature

In the descriptive literature, what we call ‘directional serial verbs’ in this thesis were referred to as ‘compounds’. In other words, the verb cluster in bold in (1) is considered as a compound.

- (1) Ta **zou jin** le fangjian.
 3sg walk enter ASP room
 ‘S/He walked into the room.’

In Chao (1968), the verb clusters such as *zou jin* are viewed as one type of the so called ‘verb-complement compounds’. Note that the term ‘complement’ in the descriptive Chinese literature is basically used to refer to any elements which come after the verb but are not the object of the verb, as opposed to the structural sense in the generative literature. In the word strings *zou jin* in (1), the element *jin* ‘enter’ is obviously not the object of the verb *zou* ‘walk’, hence it is referred to as ‘complement’ of the verb *zou*. Likewise, word strings such as *bian huai* ‘turn bad’, *chi bao* ‘eat-full’, *ge xin*, *geng xin* ‘change new’ (renew), *kan jian* ‘look see’ (see) are all grouped under the name ‘verb-complement compounds’ by Chao.

In a very similar way, Li & Thompson (1981) subclassify these verb clusters under the label ‘resultative verb compounds’ (abbreviated as RVC). According to Li & Thompson, RVCs are always composed of two elements, in which “the second element signals some result of the action or process conveyed by the first element” (Li & Thompson 1981: 54). In their system, RVCs can express the following kinds of results:

(i) Cause

- (2) Wo **da po** le chabei.
 I hit broken ASP cup.
 ‘I broke the cup.’

(ii) Achievement

- (3) Ta **mai dao** le na ben zidian.
 3sg buy arrive ASP that CL dictionary
 ‘S/He managed to buy that dictionary.’

(iii) Direction

- (4) Ta **tiao guo** le xiao gou.
 3sg jump cross ASP small ditch
 ‘S/He jumped over the small ditch.’

(iv) Phase

- (5) Ta **guan diao** le dianshi.
 3sg close away ASP TV
 ‘S/He turned off the TV.’

(Li & Thompson 1981: 55)

The (i) (ii) (iv) types of RVCs in Li & Thompson’s description are not very well defined as they do not specify how to differentiate ‘cause’ ‘achievement’ and ‘phase’ RVCs. However, these RVCs caught many generative linguists’ eyes and so far we have seen abundant studies on the Chinese resultative verb compound, such as Li (1990, 1993, 1995, 1999), Huang (2006), Sybesma (1999, 1991), Tang (1997) and Zou (1994*b*), to name but a few. These works carry out thorough and detailed investigations in the RVCs falling into the (i) (ii) (iv) types in Li & Thompson’s sense. Although I review some of these studies in the following chapters, we will not delve into all the detailed analysis on these RVCs in this thesis since they are not our central interest. What is important here is that the type (iii) RVCs in Li & Thompson’s list, which are what I call ‘directional serial verbs’, are somehow ‘ignored’ by most of these studies on RVCs. And they are exactly what this thesis is targeting. Although lack of analysis, Li & Thompson’s classification of the type (iii) data as one type of resultative verb compounds suggests that the type (iii) verb clusters have similar meaning to the resultatives. If constructionism is right, this means the verb clusters in type (iii) should have the same syntax as the resultatives. This is indeed the position we take in this thesis. The syntactic representation for the directional verb clusters will be discussed in Chapters 3 and 4. In this chapter we focus on the description of the data.

As Li & Thompson described, directional RVCs can be schematized as in (6):

- (6) V1 — V2
 displacement — direction

(Li & Thompson 1981: 58)

Take the verb string *tiao guo* in (4) for example, the first verbal morpheme *tiao* ‘jump’ represents the displacement verb V1 in the schema, and the second morpheme of the compound, *guo* ‘cross’, denotes the direction in which the subject moves as the result of the V1.

There are generally three types of ‘displacement verbs’ in Li & Thompson’s sense. The first type are verbs expressing motion, such as *pao* ‘run’, *zou* ‘walk’, *piao* ‘float’, *gun* ‘roll’, *fei* ‘fly’. Another type includes verbs that inherently imply that the direct object undergoes a change of location, for example, *ban* ‘remove’, *reng* ‘throw’, *song* ‘send’, *ji* ‘post’, *ling* ‘lead’, *ju* ‘lift’, *tui* ‘push’, etc. The third type of displacement verb is a verb that may cause the direct object to undergo displacement. For instance, *da* ‘hit’ is not a verb that inherently implies displacement on the part of the direct object, but it is possible that the action of hitting will cause the direct object to move. I show an example involving *da*+V_{direction} in (7), in which the directional RVC is highlighted in bold.

- (7) You zhi laoshu cang zai zhuozhi dixia, ni kuai ba ta **da chu**
 have CL mouse hide at table under, you quickly BA it hit exit
lai.
 come
 ‘There is a mouse hiding under the table. Hit it out quickly.’¹

Li and Thompson (1981: 58-61) also identified three types of directional verbs.

(i) The first type of directional verb includes *lai* ‘come’ and *qu* ‘go’. *lai* indicates the direction ‘toward the speaker’ while *qu* indicates the direction ‘away from the speaker’. For example:

- (8) Ta **song lai** le yi ge xiangzi.
 3sg send come ASP one CL suitcase
 ‘S/He sent over (towards the speaker) a suitcase.’
- (9) Ta **na qu** le liang ben shu.
 3sg take go ASP two CL book
 ‘S/He took (away from the speaker) two books.’

Note that *lai/qu* do not have to occur after a displacement verb. They can serve independently as the main predicate in a sentence.

¹Note that, (7) features the widely known *ba* sentence in Mandarin Chinese, where the morpheme *ba* preposes the direct object *ta* ‘it’ (referring to the mouse).

(ii) The second type of directional verbs includes eight verbs. They can also serve independently as the main predicate of a sentence, expressing a verbal meaning, apart from being the second morpheme in a directional RVC, expressing a directional meaning. Li & Thompson summarised both meanings for each member in this group as in (10), where the original verbal meaning is shown before the hyphen and the directional meaning after the hyphen.

- (10) *shang* ‘ascend-up’
xia ‘descend-down’
jin ‘enter-in’
chu ‘exit-out’
qi ‘rise-up’
hui ‘return-back’
guo ‘cross-over’
kai ‘open-apart, away’

I show below three pairs of sentences illustrating the usage of *shang*, *xia*, *jin*, *chu*, *hui*, *guo* respectively, where the (a) sentences illustrate the verbal usage when these directional verbs are used alone and the (b) sentences demonstrate their directional usage in the directional RVCs.

- (11) a. Ta **shang** le louti.
 3sg ascend ASP stair
 ‘S/He went up stairs.’
 b. Ta **zou shang** le louti.
 3sg walk ascend ASP stairs
 ‘S/He walked up stairs.’
- (12) a. Ta **xia** le huoche.
 3sg descend ASP train
 ‘S/He got off the train.’
 b. Ta **tiao xia** le huoche.
 3sg jump down ASP train
 ‘S/He jumped off the train’

- (13) a. Ta **jin** le jiaoshi.
3sg enter ASP classroom
'S/He entered the classroom.'
- b. Ta **pao jin** le jiaoshi
3sg run enter ASP classroom
'He ran into the classroom.'
- (14) a. Ta **chu** le xuexiao.
3sg exit ASP school
'S/He exited the school.'
- b. Ta **liu chu** le xuexiao.
3sg sneak out ASP school
'S/He neaked out of the school.'
- (15) a. Ta **hui** le jia.
3sg return ASP home
'S/He returned home.'
- b. Ta **pao hui** le jia.
3sg run back ASP home
'S/He ran back home.'
- (16) a. Ta **guo** le na zuo qiao.
3sg cross ASP that CL bridge
'S/He crossed that bridge.'
- b. Ta **fei guo** le na zuo qiao.
3sg fly over ASP that CL bridge
'S/He flew over that bridge.'

I would like to specially point out that the other two directional verbs in Li & Thompson's second group, namely *qi* 'rise' and *kai* 'open', behave differently from the others. We can see that *shang*, *xia*, *jin*, *chu*, *hui*, *guo* take a locative NP (also known as GROUND NP in Talmy's (1975) terminology) as their object, interpreted as a GOAL, SOURCE or ROUTE. However, *qi*, at least in modern Mandarin Chinese, can not take a locative NP as its object, as in (17). Instead, the object of *qi* should be an NP that *qi* is predicated on², as in (18).

²If we use Talmy's terminology, the object following *qi* is a FIGURE NP.

- (17) *qizi **sheng qi** le fang-ding.
 flag raise rise ASP house-top
 Intend meaning: ‘The flag rose to the roof.’
- (18) Ta **sheng qi** le qizi.
 3sg raise rise flag
 ‘S/He raised up the flag.’

Besides, in modern Mandarin, *qi* is seldom used as an independent verb. It either occurs in the second verbal position in serial verbs such as (18), or as a morpheme in some compounds such as *qili* ‘rise-stand’ (stand up).

kai is even more odd to be in this group of directional verbs. Semantically, the verbal meaning of *kai* is ‘open’. Li & Thompson claim that it denotes the directional meaning of ‘away, apart’ when it follows a displacement verb. This so-called ‘directional meaning’ is less salient than the directional meaning of the other directional verbs in this group, hence it is excluded in some other works describing Mandarin directional verbs, such as Lamarre (2007). Similar to *qi*, it also disallows a locative NP (GROUND NP) object, as in (19). *kai*’s object should be its theme, as in (20).

- (19) *Tamen **zou kai** le he liang an.
 they walk open ASP river two bank
 Intend meaning: ‘They walked apart to the two sides of the river.’
- (20) Ta **tui kai** le chuanghu.
 3sg push open ASP window
 ‘S/He pushed this window open.’

Obviously, *qi* and *kai* actually do not behave exactly the same as the other directional verbs in type (ii) although Li & Thompson group them together.

(iii) The third type is formed with a type (ii) directional verb followed by a type (i) directional verb. For example, *jin lai* ‘enter come’, *jin qu* ‘enter go’, *shang lai* ‘ascend come’, *xia qu* ‘descend go’. In Li & Thompson’s terms, these directional verb complex are themselves ‘compound’ too. They can serve as the main predicate in the sentence, as in (21), or as the second component in a directional RVC, as in (22). In other words, the complex *zou jin lai* as a whole is referred to as a compound although the sub-part *jin lai* is also recognized as a compound.

- (21) Ta **jin lai** le.
 3sg enter come ASP/SFP³
 ‘S/He came in.’
- (22) Ta **zou jin lai** le.
 3sg walk enter come ASP/SFP
 ‘S/He walked in (towards the speaker).’

Before we proceed to more detailed data of the directional serial verb constructions, or ‘directional resultative verb compound’ in Li & Thompson’s terminology, I would like to clarify in Section 2.1.2 the reason for which I use ‘serial verb construction’ instead of the ‘resultative verb compound’ to refer to the phenomenon described above, considering the fact that the term RVC is so influential that many Chinese linguists simply just take it for granted that these verb strings are compounds and hence their analysis is influenced⁴.

2.1.2 Compound or Two Words

From the review of Li & Thompson’s work, we can see that they basically assign the name ‘directional resultative verb compound’ (directional RVC) to all the verb strings in the form of (23)

- (23) V1 — V2
 displacement — direction

This terminology, including similar claims such that $V_{\text{displacement}}-V_{\text{direction}}$ is a ‘compound’, is widely accepted in the descriptive literature. However, we should reconsider the validity of this terminology in the framework of generative grammar. In generative grammar, when we use the term *compound*, we imply that the item in question is one single word, which awaits in the lexicon for syntax to pick it up. In other words, if we consider the verb strings in the form of (23), such as *song lai* ‘send come’ or *zou jin* ‘walk enter’, as compounds, we are actually suggesting that they are readily formed in the lexicon, and that they enter syntax as a whole syntactic item with their internal structures being invisible from any syntactic operation. Nonetheless, I show in this

³The gloss SFP is short for ‘sentence final particle’. Since in the Chinese linguistic literature *le* at the end of the sentence has controversial status between aspect marker and sentence final particle, I gloss it as both here. More about *le* will be addressed throughout the thesis.

⁴A typical example is Li (1990).

section that the term *compound* in traditional Chinese grammar is not equivalent to the same term used in the western linguistics, and that the so called directional RVCs allow certain syntactic operations in their internal structure, hence they should be differentiated from the real compounds. Therefore we should stop using the misleading terminology ‘compound’ to describe the data demonstrated in Section 2.1.1.

Firstly, a basic question needs to be clarified: what is defined as a ‘compound’ in the Chinese literature?

The concepts of ‘compound’ in the western and Chinese linguistic traditions are not equivalent. They both define compounds based on the properties of the component morphemes, but the criterion is different.

Packard (2000: 67) set two criteria for classifying the morphemes: (a) whether the morpheme is bound or free; (b) whether the morpheme is a function (grammatical) or content (lexical morpheme). The combination of these criteria gives us four possible morpheme types: [+free, +function], [+free, -function], [-free, +function], and [-free, -function]. Following Packard’s terminology, if the morpheme is a function morpheme and is free ([+free, +function]), it is called a **function word**. If it is a content morpheme and is free ([+free, -function]), it is a **root word**. If the morpheme is content and is bound ([-free, -function]), it is a **bound root**. If the morpheme is bound and is grammatical ([-free, +function]), it is an **affix** (Packard 2000: 69).

Western linguists generally define ‘compound’ based on the free/bound criteria, namely, a compound is defined as being composed of free morphemes. Whether the components are function or content is not within the consideration. However, in Chinese morphology, what is normally translated to ‘compound’ is the term ‘*fuhe ci*’ (复合词) whose definition hinges on the content/function criterion rather than the free/bound criterion. (24) exemplifies the definition of ‘compound’ in the Chinese literature.

- (24) “polysyllabic units that have certain properties of a single word and that can be analysed into two or more meaningful elements, or morphemes, even if these morphemes cannot occur independently in modern Mandarin.”

(Li & Thompson 1981: 46)

Basically, a Chinese compound should be composed of content morphemes, namely ‘meaningful morphemes’ in Li & Thompson’s definition. But they do not need to be able to occur independently, in other words, they do not need to be free. Therefore, the component morphemes of a Chinese compound must be root words ([+free, -function]) or bound roots ([-free, -function]) in Packard’s term. The function words ([+free, +function]) such as *de* 的 (possessive marker), *le* 了 (ASP, SFP), *he* 和 (Conj) generally are not productive and do not freely combine with other morphemes to create larger words in Mandarin Chinese. Affixes ([-free, +function]) only account for a very small portion in the Chinese morphemes. Many of them used to be content morphemes in the history but have undergone grammaticalization into affixes today, for example, the ‘nominalizing’ suffixes *-zi* 子, *-tou* 头, *-xing* 性, the ‘verbalizing’ suffix *-hua* 化, the negative prefixes *fei-* 非, and the agentive suffix *-zhe* 者. The affixes are also not components of Chinese compounds. Instead, they only attach to root words or bound roots to create another type of words termed as *paisheng ci* 派生词, roughly, derived words. For example, *hou-zi* is composed of a root, *hou*, which means ‘monkey’, and the suffix *-zi*. *lao-shi* and *lao-hu* involve the prefix *lao* and the roots *shi* ‘teacher’ and *hu* ‘tiger’. The function of these affixes is to convert the original single syllable words, i.e. *hou*, *shi*, *hu*, into double syllable words, which is a general trend in the historical change of Chinese vocabulary to differentiate the widely existing monosyllabic homophonous words. Some other affixes do have grammatical influence on the derived words, similar to the derivational affixes in English. For example, *zuo-zhe* ‘author’ and *du-zhe* ‘reader’ consist of the verbal roots *zuo* ‘compose, write’, *du* ‘read’ and the suffix *-zhe*. *zhe* determines the category and the core meaning (i.e. the person who does something) of the composed words, similar to the English suffix *-er*. In the Chinese literature, these derived words are all excluded from the set of ‘compounds’ because they all involve a functional morpheme, i.e. an affix.

In other words, the ‘compounds’ in the Chinese linguistic tradition allow three possible combinations of morphemes, as is shown in (25).

- (25) a. free root + free root. For example, *bing-shan* ‘ice-mountain’ (iceberg), *ma-lu* ‘horse-road’ (street). This type of compound is the equivalent of the compound in the western linguistic sense.

- b. free root + bound root (the order can be reversed). For example⁵, *dong-**zuo*** ‘move-act’ (action), *gou-**zao*** ‘compose-create’ (structure).
- c. bound root + bound root. For example, *zhu-gu* ‘master-care’ (customer), *can-mou* ‘refer-consult’ (staff officer, advisor).

Among these types, it is natural to suspect that some of the type (a) compounds may be hard to be distinguished from syntactic phrases and this is indeed the case. Theoretically, type (b) and (c) should be uncontroversially compounds, because the bound morpheme would not be able to occur independently. However, I will soon show some empirical data in which even some compounds of the type (b) or type (c) can behave like a syntactic phrase, which means that some of the compounds identified in the descriptive literature should not be equivalently viewed as compounds in the framework of generative grammar.

Before I proceed to show the phrasal behaviour of certain so-called Chinese ‘compounds’, I shall briefly introduce another descriptive tradition to account for the internal structure of a Chinese compound. Basically, linguists observed that the compound constituents seem to have the same syntactic relationships as the ones existing among the parts of a sentence. Specifically, Chinese compounds demonstrate five syntactic relations, including the subject-predicate relation, such as *di zhen* ‘earth shake’ (earthquake), the modification relation, such as *da ren* ‘big people’ (adult), the coordination relation such as *da xiao* ‘big small’ (size), the predicate-object relation *dan xin* ‘carry heart’ (worry about), and the verb-result relation such as *ke fu* ‘conquer-obey’ (to overcome). The ‘resultative verb compound’ (RVC), including our main data, i.e. the directional RVCs illustrated in Section 2.1.1, are all instantiations of the last relation. Undoubtedly, this way of describing the internal structure of compounds is a rather shallow ‘surface syntactic description’ (Packard 2000: 27), but it is widely used in the descriptive literature.

Among these relations, the compounds with the predicate-object relation and the ones with the verb-result relation are the most problematic cases with respect to the indeterminacy between morphology and syntax. In other words, they show both word and phrase properties.

⁵The bound morphemes are marked in bold.

First, we deal with the compounds with a predicate-object relation between the components. To simplify the notation, I will refer to them as V-O strings. In Mandarin Chinese, if a V-O string consists of only free word morphemes and has no hint of idiomatic or specialized meaning, there is no problem in judging it as a syntactic phrase. For example, *kan dianying* ‘watch movie’ is viewed as a phrase without controversy because both *kan* and *dianying* are free morphemes and they precisely express the meaning ‘watch/see’ and ‘movie’ respectively, which directly compose the meaning of the whole V-O string. Moreover, as is shown in (26) and (27), the object part *dianying* can easily be topicalized, which is a syntactic operation.

(26) Women zuotian kan dianying le.
we yesterday watch movie SFP
‘We watched a movie yeasterday.’

(27) Dianying, women zuotian kan le.
movie, we yesterday watch SFP
‘We watched the movie yesterday.’

The problem arises when the string contains bound morphemes, such as *dan-xin* ‘burden/carry heart’ (worry). In *dan-xin*, *dan* is a bound morpheme, it cannot serve independently as a verb in modern Chinese. This suggests that *dan-xin* should be a word. Furthermore, *dan-xin* can take an object, as is shown in (28), which again identifies *dan-xin* as a single verb:

(28) wo hen dan-xin ta de shenghuo.
I very worry he POSS⁶ life
‘I worry about his life very much.’

However, *dan-xin* allows modifiers to be inserted between the two morphemes, as in (29). It can even undergo topicalization, as in (30). Both characteristics suggest that *dan-xin* is a syntactic phrase.

(29) Wo wei ta dan le liang nian de xin.
I for 3sg burden ASP two year DE heart
‘I worried about him for two years.’

⁶Chinese particle *de* 的 is observed to have a variety of functions, such as indicating possession (similar to the English genitive case marker ‘s), restriction (e.g. *kan hua de ren* ‘look flower DE people’ (the person looking at the flower)) or modification (e.g. *piaoliang de hua* ‘beautiful DE picture’ (beautiful flower)). In this thesis, I only gloss the ones which are clearly possessive as POSS. The other *des* will be glossed as *DE* just for the sake of simplicity.

- (30) - Haizi likai jia, ni bu dan-xin ma? - **Xin**, kending shi
 - child leave home, you not burden-heart SFP - heart, definitely be
 hui **dan** de.
 will burden DE
 -‘Your child left home. Don’t you worry (about him)?’ -‘I will definitely worry (about him).’

Another problem concerning the V-O string is that sometimes when both components are free morphemes, the meaning of the whole string can be ambiguous between a pure compositional meaning and a generic meaning or an idiomatic reading. For example, *du-shu* consists of a verbal morpheme *du* meaning ‘to read’, and a nominal morpheme *shu* meaning ‘book’. In (31), *du shu* is interpreted as ‘read books’, parallel with ‘read newspapers’, hence it seems to be a syntactic phrase; in (32), however, *du shu* is interpreted as *study*, as opposed to ‘read books’, which suggests that *du shu* is a word, namely, a X^0 level element.

- (31) Wo xihuan du shu, bu xihuan du baozhi.
 I like read book, not like read newspaper
 ‘I like reading books, but I don’t like reading newspapers.’
- (32) Wo xihuan du-shu, bu xihuan gongzuo.
 I like study, not like work
 ‘I like studyingm but I don’t like working.’

To deal with the V-O paradox, Huang (1984:68-69) proposes a ‘dual status’ solution. He argues that these V-O strings “have a dual status, either as words or as phrases ... determined by independent principles of grammar and by the context of its occurrence”. Huang offers three possibilities in instantiating these principles. First, V-O structures might be doubly listed in the lexicon as both phrases and words; second, they might be listed as words but re-analysed as phrases when they occur sentence-finally; third, they might all be listed as syntactic phrases and undergo lexicalization when followed by an object. I shall not probe into more detail of Huang’s analysis on determining the syntactic status of the V-O string. The important point I would like to show, via the V-O string data and Huang’s proposal, is that it is not uncommon to see phrasal behaviours in the compounds defined in the traditional Chinese literature, hence, the traditionally viewed Chinese compounds should be re-considered to contain real compounds and syntactic phrases in the generative grammar framework.

This point can be extended to the other case, which is more relevant to our main data: the word strings that hold a Verb-Result relation. Although the V-R strings are all considered as compounds by the traditional grammarians, it is also observed that many V-R strings actually reveal phrase properties.

The first property is that some V-R strings allow a morpheme *de/bu* (glossed as ‘able’/‘unable’) indicating potentiality to interfere between the two components while some others do not. I show below five V-R word strings, in which (33) *da si* ‘hit die’, (34) *zou chu* ‘walk exit’, (35) *yun jin-lai* ‘deliver enter-come’ allow the potential morphemes, while (36) *ke fu* ‘conquer obey’ and (37) *tui guang* ‘push broad’ do not allow separation by the potential morphemes.

- (33) Wusong liqi da, **da** de **si** laohu.
Wusong strength big, hit able die tiger.
‘Wusong is strong. He can beat a tiger to death.’
- (34) Xiaoming **zou** bu **chu** migong.
Xiaoming walk unable exit maze.
‘Xiaoming cannot walk out of the maze.’
- (35) Hongshui weikun le cunzhuang. Waimian de wuzi **yun**
flood strand ASP village. Outside DE resources deliver
bu **jin-lai**.
unable enter-come.
‘The flood stranded the village. The resources outside cannot be delivered into it.’
- (36) *Women **ke** bu **fu** zhe ge kunnan.
we conquer unable obey this CL difficulty
‘We cannot overcome this difficulty.’
- (37) *Gongsi **tui** bu **guang** zhe xiang fuwu.
company push unable broad this CL service
‘The company cannot popularize this service.’

Note that (34) and (35) represent the main data of this thesis, namely the directional serial verb construction in my terminology.

The second property lies in the boundedness and productivity of the components. The components in *da si*, *zou chu* and *yun jin-lai* are all free morphemes and can be freely substituted with other morphemes as long as the semantics remains felicitous. For example, in *da si*, the second morpheme can be replaced

by *can* ‘handicapped’, *pao* ‘escape’, *ku* ‘cry’, etc. And the first morpheme can also be replaced by *ti* ‘kick’, *sha* ‘kill’, *tong* ‘stab’, etc. In *zou chu*, *zou* can be replaced with other manner of motion verbs or displacement verbs, and *chu* can be replaced with other directional verbs to describe various directions. This highly suggests that these V-R strings are more likely to be formed in the syntax via certain syntactic operations rather than formed in the lexicon. If they already exist in the lexicon, we would have to expect that the lexicon provides an extremely large number of V-R strings, which must cover all the possible action-result combinations in human activities. This assumption is rather undesirable. In comparison, the components in other V-R strings such as *ke fu* or *tui guang* contain bound morphemes and cannot be replaced freely by other morphemes. For example, we cannot replace *guang* ‘broad’ with other morphemes even if they bear a similar meaning to *guang*, such as *da* ‘big’ or *kuan* ‘wide’:

- (38) Zhengfu zhunbei tui-guang/*da/*kuan yingyu jiaoyu.
 government plan push-broad/big/wide English education
 ‘The government plans to popularise English education.’

The third property concerns the semantics of the V-R string. The semantics of *da si*, *zou chu* and *yun jinlai* is purely compositional. For example, the meaning of *zou chu* is simply the meaning of *zou* plus the meaning of *chu*. In comparison, the meaning of *ke fu* and *tui guang* involve some metaphoric/idiomatic change: *ke fu* means ‘overcome (difficulty)’ rather than ‘conquer and obey’ as the component literally indicates.

From the discussion of these three properties, we can see that there are two types of V-R strings. Type 1 V-R strings disallow other morphemes to intervene between the component morphemes. They involve bound morphemes or morphemes which can not freely be substituted. Their meanings are idiomatic/metaphorical. *ke-fu* and *tui-guang* are of this type. Type 2 V-R strings allow potential morphemes to intervene between the two morphemes. Their component morphemes are free and allow substitution as long as the semantics remains felicitous. Their meanings are compositional. Examples such as *da si*, *zou chu*, *yun jin lai* belong to this type. I suggest that the type 1 V-R strings are real compounds, which are X^o level elements and come from the lexicon directly. Whereas the type 2 V-R strings should be considered as syntactic phrases which are formed by more than one X^o level element. In

other words, the type 1 V-R strings can be termed as ‘compounds’ while the type 2 V-R strings should bear the term ‘serial verb construction’.

Most importantly, the main data of this thesis, namely examples such as *zou chu* and *yun jin lai*, belongs to the type 2 V-R strings. Apart from the three properties I just illustrated (separation by *de/bu*, productivity, compositional), I can show more evidence that suggests the phrasal status of DSVCs:

- (39) Ta **ji** le yi feng xin **guo lai**.
 3sg post ASP one CL letter cross come
 ‘S/He posted a letter over here.’
- (40) Ta **zou shang** le shan **lai**.
 3sg walk ascend ASP mountain come
 ‘S/He walked up the the mountain (towards the speaker).’

In (39) we see the so called directional RVC *ji guo lai* is separated by an aspect marker *le* and a DP *yi feng xin* which is the theme of the displacement verb *ji*. In (40), the aspect marker *le* and a locative DP ‘shan’ is inserted between the two directional elements *shang* and *lai*, although *shang lai* is claimed to be a compound itself. These evidences clearly show that in a schema (41), other syntactic constituents can interfere in position 1 and 2, hence the wordhood of these verb strings is highly questionable.

- (41) $V_{\text{displacement}}$ **1** $V_{\text{non-deictic}}$ **2** V_{deictic}

In summary, the term ‘compound’ in the traditional literature is simply a surface description. Directional serial verbs are treated as ‘compounds’ because the semantic relation between the component verbs resembles the relation between the component morphemes of a real V-R compound in the language. Note that in the descriptive literature, there is no concept of lexicon and syntax, hence defining these verb clusters as compounds or phrases does not matter as much. Nevertheless, within the generative framework, which differentiates lexicon and syntax, the status of these verb clusters needs to be clear because it will influence the analysis: defining them as ‘compounds’ means they are selected as a X^0 level element; defining them as ‘phrases’ means they enter syntax separately and the surface complex predicate is derived via certain syntactic operations. Given the arguments in this section, I suggest that the misleading terms such as ‘directional RVC’ or anything that refers to these verb strings as

compounds should be discarded. Instead, I use the term ‘directional serial verb construction’ (DSVC) as is introduced in the beginning of the thesis. Similarly, the type 2 V-R strings under the label ‘resultative verb compound’ should also be separated from the type 1 V-R strings and receive a syntactic analysis. It would be more appropriate to term the type 1 V-R strings, such as *da ku* ‘hit cry’, as resultative serial verb constructions (RSVC) in this thesis.

2.1.3 Against V-P Reanalysis

In Section 2.1.2 I address the reasons why I use the term Directional Serial Verb Construction instead of Directional Resultative Verb Compound. However, I am not suggesting that each verb in a DSVC projects a VP in the syntax.

Lamarre (2007:7) points out that when directional verbs follow a displacement verb (‘co-event’ verb in her original term), the directional verbs “lose their tonal contrast and become unstressed syllables, pronounced in the same prosodic unit as the co-event verb”⁷. Moreover, in some northern dialects of Mandarin, the directional verbs even undergo some segmental modifications when used in the serial verb construction. Apart from the phonetic reduction, native speakers report that the directional verbs in a DSVC are semantically less verbal than the initial displacement verb and also less verbal than the cases when they are used alone, which is also mentioned in Section 2.1.1 when we review Li & Thompson’s work. For example, the most salient reading of (42) is the first reading where *jin* ‘enter’ only indicates the directional information, while the second reading is only possible with certain context changes, for example, when a progressive aspect marker *zhe* follows the co-event verb and a perfective aspect marker *le* follows the directional verb *jin*, and in this case *jin* ‘enter’ is pronounced with full tone and stressed (underlined in the example), as in (43).

- (42) Wo tiao jin le youyong-chi.
 I jump enter ASP swimming-pool
 ‘I jumped into the swimming pool. (I got into the swimming pool by one jump.)’
 #‘I entered the swimming pool, jumping. (I got into the swimming pool by several jumps.)’

⁷This is also observed by Chao (1968: 459) and widely described in Chinese reference grammars.

- (43) Wo tiao zhe jin le youyong-chi.
 I jump ZHE enter ASP swimming-pool
 ‘I entered the swimming-pool, jumping. (I got into the swimming pool
 by several jumps.)’

Another possible context in which we may elicit the second reading in (42) can be found in example (18) in Chapter 1, repeated in (44).

- (44) Ting qingchu! Ta shi **pao jin** fangjian de, bushi **zou jin**
 listen carefully 3sg SHI run enter room DE, neg-SHI walk enter
 fangjian de!
 room DE
 ‘Listen carefully! It was by running that he got into the room, not by
 walking.’

Both (43) and (44) suggest that the second reading in (42) must not be the default reading. The first reading in (42), i.e. the actual default reading, clearly indicates that the directional verb *jin* undergoes semantic bleaching.

The phonetic and semantic reduction suggests that the directional verbs in DSVCs are probably not equal to the co-event verbs, or to the directional verbs used alone, in terms of syntactic category. To account for this intuition, Lamarre suggests that the directional verbs in DSVCs are grammaticalized from homophonous verbs. And they coexist with the homophonous verbs in the contemporary language (Lamarre 2007: 7). She did not specify what category could these ‘directionals’ be, but the most natural candidate to speculate is probably preposition. Then a new assumption arises: could DSVCs be analysed as displacement verb plus preposition, in which the preposition is grammaticalized from a homophonous verb?

This assumption appears to be attractive because it parallels the Chinese DSVCs with their counterparts in many Indo-European languages in which the same information is conveyed by a verb plus a preposition. Besides, in the literature, many Chinese prepositions are indeed considered to have a homophonous verb counterpart.

Briefly speaking, the group of words that has been assigned the name of ‘preposition’ in the Chinese literature were originally all verbs. A small sub-group of them already lost the verbal characteristics in modern Chinese. They are termed as Exclusive Prepositions by Paul (2015), for example, *zhiyu* ‘as for’,

cong ‘from, since’. They definitely cannot serve as the main predicate and they cannot be followed by aspect markers, as is shown in (45) and (46).

- (45) *Ta zhiyu yuyanxue.
he as-for linguistics
- (46) Zhiyu (*le) yuyanxue, ta dong bu duo.
as-for ASP linguistics, he understand not many
‘As for linguistics, he does not understand much.’

The other sub-group, which is larger, shows the properties of both verbs and prepositions. Li & Thompson (1981) term them as ‘coverbs’. For example, *zai* has a preposition usage as in (47-a), where *zai* and the following NP form an adjunct left to the main predicate of the sentence, and the aspect marker cannot follow *zai* in this case. In comparison, *zai* also has a verb-like usage, as in (47-b), where *zai* serves as the main predicate of the sentence ⁸.

- (47) a. Ta zai (*le) jia chifan.
he at ASP home eat-meal
‘He has meal at home.’
- b. Ta zai jia.
he exist home
‘He is at home.’

Another coverb example is *gen*. (48-a) shows its preposition property while (48-b) shows its verb property.

- (48) a. Ta gen (*le) wo shuo le henduo hua.
he with ASP I say ASP many words
‘He talked a lot with me.’
- b. Wo gen le ta xuduo nian.
I follow ASP he many year
‘I followed him many years.’

⁸The *zai* in (47-b) also can not be followed by an aspect marker, but this is because it is a stative verb whose semantics clashes with aspect markers. Other verbs that do not take aspect markers are *shi* ‘be’, *xiang* ‘resemble’, *shuyu* ‘belong to’ etc.

One way to account for the existence of coverbs is to say that the verb usage and the preposition usage are actually manifestation of two words with the same pronunciation. In other words, *zai* in (47-a) and (47-b) are two homophonous word: *zai*₁ is a preposition roughly meaning ‘in, at’ while *zai*₂ is a verb roughly meaning ‘be, exist’. Likewise, *gen*₁ in (48-a) is a preposition meaning ‘with’ and *gen*₂ in (48-b) is a verb meaning ‘follow’.

It is tempting to extend this argument to the directional verbs in question, asserting that when used alone, they are indeed verbs, but when used in DSVCs, they are prepositions. If we want to accept this kind of opinion, we should be able to find independent evidence showing the cases where these directional verbs are unquestionably verbs as well as the cases where they are unquestionably prepositions, just as (47) and (48) illustrate.

It is fairly easy to show their verbal usage. When used alone, the directional verbs can occur in the same syntactic environment as the other verbs. I compare the syntactic environment licensed by a directional verb *jin* ‘enter’ and a motion verb *pao* ‘run’ below.

Firstly, when used alone, both *zou* and *jin* can serve as the predicate of a clause and can be followed by the aspect marker *le*, as is shown in (49) and (50).

(49) Ta pao le liang-bai mi.
3SG run ASP two-hundred meters
‘S/He ran two hundred meters.’

(50) Ta jin le fangjian
3SG enter ASP room
‘S/He entered the room.’

Moreover, both of them can be negated (as in (51) and (52)) or preceded by modals (as in (53) and (54)).

(51) Wo xinzang bu hao, suoyi yiban bu pao.
I heart not good, so normally not run
‘My heart is not good, so I normally don’t run.’

(52) Ta yiban bu jin fangjian.
3sg normally not enter room
‘S/He normally doesn’t enter the room.’

- (53) Wo **neng** pao.
I can run
'I can run.'
- (54) Wo **neng** jin fangjian.
I can enter the room
'I can enter the room.'

All the syntactic frames shown above are typical for Chinese verbs and we see that *jin* and *pao* both fit in these frames.

Nevertheless, we cannot find independent evidence showing that there is another *jin* which does not behave like a verb at all. For example, we expect to find a usage of *jin* which is not able to be the main predicate, just like the example of *zhiyu* in (45), but we do not find such cases. Alternatively, we would like to find a case where *jin* occurs pre-verbally, giving an adjunct structure [VP [PP P DP] V], which is just like other prepositions in modern Chinese (e.g. the *zai*, and *gen* in (47-a) and (48-a)). Indeed, we do find examples where *jin* is used with another DP preceding the other verb, as in (55).

- (55) Ta jin le fangjian na le yidian qian.
he enter ASP room take ASP a-little money
'He entered the room and took some money.'

However, *jin* allows the aspect marker to follow it, differing from the real preposition cases such as (47-a) and (48-a) which forbid the aspect marker to follow the preposition. Therefore, (55) should not be considered as a PP adjunct structure. The *jin* here is obviously also a verb.

Similar to the directional verbs in the pre-verbal position, as in (55), the directional verbs in the post-verbal position, namely in DSVCs, can also be followed by a aspect marker (see (42)), which suggests that the directional verbs in DSVCs are also not prepositions.

In sum, although intuitively we notice the directional verbs in DSVCs are less verbal, we also have no direct evidence showing that they behave like the prepositions in Mandarin. Hence, in this thesis I do not directly assert that the directional-denoting morphemes occurring in DSVCs are simply prepositions, while the ones occurring elsewhere (e.g. (53), (55)) are homophonous verbs. Instead, I will show in Chapters 3 and 4 that the verbless behaviour of

the directional verbs in DSVCs can be accounted for with a structural reason. Basically, my theory assumes that these directional-denoting morphemes are always specified with category *V* in the lexicon, which enable them to be inserted under the node *V* in syntax. However, they have other properties that allow them to be inserted under some functional nodes, such as *Res* and *Path*, as well. This is exactly what happens in the syntax of DSVCs: the movement/displacement verbs are inserted under *V* while the directional verbs are under functional heads such as *Res* or *Path*. Being inserted under *Res*, the morpheme would be interpreted as a result state while being inserted under *Path*, the morpheme would be interpreted as a directed moving track. This is essentially the reason for the bleaching of verbal meaning, observed with the directional verbs occurring in Mandarin DSVCs.

2.1.4 The Serialising Patterns of DSVCs

So far, I have discussed the reasons why I use the term Directional Serial Verb Construction to refer to the relevant data, arguing against the other two alternative views on them, one treating them as compounds and the other as verb plus preposition.

Bearing the new terminology in mind, I now rephrase the descriptive data we have seen in Section 2.1.1 in my own terms, and introduce a few abbreviations which will be used throughout this thesis.

Basically, two major types of verbs are observed in the Mandarin DSVCs: co-event verbs and directional verbs.

Co-event verbs encompass intransitive motion verbs, such as *pao* ‘run’, *zou* ‘walk’, *piao* ‘float’, *gun* ‘roll’, and transitive displacement verbs which express direct or indirect cause of motion such as *song* ‘send’, *tui* ‘push’, *reng* ‘throw’.

Directional verbs, also known as path verbs, inherently indicate some kind of direction. They can be further divided into two subtypes: deictic directional verbs and general (non-deictic) directional verbs. As the names indicate, deictic directional verbs denote speaker oriented directions, including *lai* ‘come’ and *qu* ‘go’, while general directional verbs indicate non-deictic directions, such as *shang* ‘ascend’, *xia* ‘descend’, *jin* ‘enter’, *chu* ‘exit’, *guo* ‘cross’.

To simplify the notation, in this thesis I abbreviate the motion and displacement verb as V_m and V_{dis} respectively, and the general directional verb as

V_{gen} , the deictic directional verb as V_{deic} .

Each DSVC only allows up to one $V_{\text{m}}/ V_{\text{dis}}$, V_{gen} , and V_{deic} respectively, for example, (56) is ungrammatical because it has two V_{gen} .

- (56) *Wo zou jin hui lai le.
I walk enter return come ASP/SFP

In terms of linear order, $V_{\text{m}}/ V_{\text{dis}}$ always precedes V_{gen} and V_{gen} always precedes V_{deic} , as in (57).

- (57) a. Zou jin lai
walk enter come
b. *Zou lai jin
walk come enter

There are seven possible combinations of these verbs observed in Mandarin DSVCs, leading to seven serialising patterns. I show below all the possible serialising patterns of Mandarin DSVCs with examples.

a. $V_{\text{gen}} + V_{\text{deic}}$

- (58) Ta **jin lai** le.
3sg enter come ASP/SFP
'S/He came in.'

b. $V_{\text{m}} + V_{\text{deic}}$

- (59) Ta kaixinde xiang wo **pao lai**.
3sg happily towards 1sg run come
'S/he ran towards me happily.'

c. $V_{\text{m}} + V_{\text{gen}}$

- (60) Ta **zou jin** le fangjian.
3sg walk enter ASP room
'S/He walked into the room.'

d. $V_m + V_{gen} + V_{deic}$

- (61) Ta **zou jin lai** le.
 3sg walk enter come ASP/SFP
 ‘S/He walked inside.’

e. $V_{dis} + V_{deic}$

- (62) Ta **gan lai** le yi qun yazi.
 3sg chase come ASP one group duck
 ‘S/He chased a group of ducks here.’

f. $V_{dis} + V_{gen}$

- (63) Ta **tuo xia** le maozi.
 3sg take-off descend ASP hat
 ‘S/He took off the hat.’

g. $V_{dis} + V_{gen} + V_{deic}$

- (64) Ta **ban jin lai** le yi xiang shu.
 3sg move enter come ASP one box book
 ‘S/He moved a box of books inside.’

These DSVCs demonstrate a handful of interesting syntactic and semantic puzzles, which are addressed in Section 2.2-Section 2.4.

2.2 The Word Order Puzzles

The first interesting observation concerning the Mandarin DSVCs is that the patterns (e) and (g) are reported to allow word order alternations in terms of the position of the direct object. This section illustrates the observed word order alternations and discusses the syntactic and semantic differences between each word order variant.

2.2.1 Word Order Alternation

Chao (1968), Li & Thompson (1981) and many other descriptive linguists have noticed that when the first verb is a displacement verb, its direct object can occur in alternative positions.

Specifically, when the displacement verb is followed by a single deictic verb, namely pattern (e), the object of the displacement verb can be inserted after the whole verb string or in between the two verbs. For example, in (65), the displacement verb *song* is followed by a single deictic directional verb *lai*. The object of *song*, *yi wan tang*, can occur in two positions.

- (65) a. Ta **song lai** le yi wan tang.
3sg send come ASP one CL soup
- b. Ta **song** le yi wan tang **lai**.
3sg send ASP one CL soup come
'S/He brought one bowl of soup.'

When the displacement verb is followed by a general directional verb and a deictic directional verb at the same time, namely pattern (g), the direct object of the displacement verb is allowed to appear in three positions: after the displacement verb, after the general directional verb or after the deictic directional verb. This is illustrated in (66).

- (66) a. Ta **song jin lai** le yi wan tang.
3sg send enter come ASP one CL soup
- b. Ta **song** le yi wan tang **jin lai**.
3sg send ASP one CL soup enter come
- c. Ta **song jin** le yi wan tang **lai**.
3sg send enter ASP one CL soup come
'S/He brought in one bowl of soup.' (scenario: the speaker is in the room and 'he' entered the room with the soup.)

However, note that when the displacement verb is followed by a single general directional verb, namely pattern (f), the direct object of the displacement verb should always follow the whole verb string. In (67), *song* is followed by *jin*, a general directional verb. The object *yi wan tang* has only one possible position.

- (67) a. Ta **song jin** le yi wan tang.
 3sg send enter ASP one CL soup
 b. *Ta **song** le yi wan tang **jin**.
 3sg send ASP one CL soup enter
 S/‘He sent in a bowl of soup.’

The data of pattern (f) will be further discussed in Section 2.3. In this section we shall focus on patterns (e) and (g), where word order alternations are observed.

The word order alternations in (65) and (66) are very much like the phenomenon labelled as Multiple Argument Realization introduced in Chapter 1. On the one hand, the surface word order alternations can be viewed as an instantiation of argument alternations, if we consider the direct object as one argument of the displacement verb and the directional verb as the other. To argue that the secondary directional verb is an argument may not seem to be straightforward at first glance. However, remember that the interpretation of the directional verbs in DSVCs is much less verbal than their normal usage. Their meaning only denotes the directions, which is closer to the English preposition phrase denoting goals or paths. Hence, the secondary directional verb *lai* in (65) and *jin lai* in (66) can be viewed as analogous with the English PP ‘to me/this place’ and ‘into this place’ respectively. Following this idea, the word order alternations demonstrated in (65) can be an analogy with dative alternations. Compare the dative alternation example (repeated in (68)) with (65) (repeated in (69)): the direct object of *song*, namely *yi wan tang*, is parallel with the direct object of *give*, *the newspaper* and the directional verb *lai*, which is interpreted as ‘to me’/‘towards this phrase’, is parallel with the indirect object *Kim* or the dative PP *to Kim*.

- (68) a. Terry gave Kim the newspaper.
 b. Terry gave the newspaper to Kim.
- (69) a. Ta song lai le yi wan tang.
 3sg send come ASP one-CL-soup
 b. Ta song le yi wan tang lai.
 3sg send ASP one-CL-soup come
 ‘S/He brought one bowl of soup.’

On the other hand, the DSVCs involve event composition, which is another instantiation of multiple argument realization. For example, although *song* ‘send’ can still be viewed as a ditransitive verb which selects a theme argument and a goal/path argument, other verbs which are obviously not ditransitives such as *ji* ‘post’, *la* ‘pull’, *tui* ‘push’, *ti* ‘kick’ are also free to be followed by a theme DP and the directional verbs. Semantically, these verbs do not require a goal/path argument. Then what licenses the secondary directional verbs is mysterious.

Most importantly, just like the early studies of other types of argument alternation, in which the subtle differences between the word order variants are ignored or unnoticed, the word order alternations illustrated above have also been viewed as semantic equivalences since the variations were detected. The traditional descriptive studies always assign the same translation to all the alternations in each group, so do the examples illustrated in this thesis so far, which seems to suggest that the divergence in word order does not cause any semantic effect. Nonetheless, I show in Section 2.2.2 that the variants in each case actually differ in several perspectives, suggesting an analysis comprising different underlying structures, which we will look at in Chapter 3.

2.2.2 The Syntactic and Semantic Characteristics of the Word Order Variants

In this section, I argue for the point of view that the word order alternations we observe in Section 2.2.1 are instantiations of different syntaxes. I shall illustrate this point from the semantic and the syntactic perspectives.

First of all, let us restate the word order alternations we have so far. Group 1 word orders involve a V_{dis} and a V_{deic} , presenting two variants, repeated in (70); Group 2 word orders contain a V_{dis} , a V_{gen} and a V_{deic} , presenting three variants, repeated in (71). After each variant, I make a note of the word order schema with abbreviations.

Group 1 word orders

- (70) a. Ta song lai le yi wan tang. ($V_{\text{dis}} V_{\text{deic}} \mathbf{O}$)
 he send come ASP one CL soup
- b. Ta song le yi wan tang lai. ($V_{\text{dis}} \mathbf{O} V_{\text{deic}}$)
 He send ASP one CL soup come
 ‘He brought the soup.’

Group 2 word orders

- (71) a. Ta song jin lai le yi wan tang. ($V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$)
 he send enter come ASP one CL soup
- b. Ta song le yi wan tang jin-lai. ($V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$)
 he send ASP one CL soup enter-come
- c. Ta song jin le yi wan tang lai. ($V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$)
 he send enter ASP one CL soup come
 ‘He brought the soup into here.’

2.2.2.1 Telicity

The first position I would like to assert supporting the view that the word order variants are not equivalences is that their semantics is not exactly the same, hence, strictly speaking, they should not share the same translation. The traditional grammarians do so because the difference is so subtle that even a native speaker can not easily tell without a careful investigation. The key divergence between the variants, I suggest, lies in telicity.

Telicity is a well addressed feature when describing aspectual event types, or in another term, Situation Aspect (Smith 1997). According to Smith (1997:19), “events may be telic or atelic. Telic events have a change of state which constitute the outcome, or goal, of the event...Telic events have a natural final endpoint, or intrinsic bound....In contrast, atelic events are simply processes. They can stop at any time: there is no outcome. In other words, atelic events have arbitrary final endpoints.” The basic acknowledgement is that activities and states are atelic event types while achievements and accomplishments are telic ones. It is also widely accepted nowadays that telicity is a compositional notion, which means it is not only determined by the verb. The other constituents in the sentences such as incremental objects or PPs can also alter the telicity value (Verkuyl 1972, Verkuyl 1999, Tenny 1994). For example, ‘John ate an apple’ is telic, in which the endpoint is when the apple is completely consumed, while ‘John ate apples’ is atelic because the object is an indefinite plural noun, no endpoint can be identified. Besides, a bounded PP can alter an atelic event into telic. For example, ‘John ran.’, a typical atelic event is converted to a telic event by adding the PP ‘to the station’.

The observation that the word order variants in (70) and (71) differ in telicity starts from an assertion test. It was widely agreed that Chinese Resultative Serial Verb Constructions (RSVC), i.e. RVC in the traditional term, are all telic because they contain an inherent endpoint which is the result state denoted by the resultative predicate. And they are incompatible with an assertion that cancels the endpoint. An often cited example is from Smith (1994:114):

- (72) #Ta zuotian xie-wan-le yi feng xin, keshi mei xie-wan.
 He yesterday write-finish-le a CL letter, but not write-finish
 ‘Yesterday he write-finish a letter, but he didn’t finish it.’

However, by directly negating the whole RSVC, we cannot exclude the possibility that the infelicity comes from the negation of the whole event rather than from the cancellation of the endpoint. To make it more clear, I revise (72) as in (73). (73) is infelicitous with an assertion meaning ‘but I have not written the last paragraph’ because *xie wan le* ‘write finish ASP’⁹ already indicates the achievement of the endpoint, which clashes with the assertion indicating that the letter is actually not finished.

- (73) Wo zuotian **xie wan** le yi feng xin, #keshi hai mei
 I yesterday write finishe ASP one CL letter, but still not
 xie zuihou yi duan.
 write last one paragraph
 ‘I wrote up a letter yesterday, #but I have not written the last paragraph.’

Similarly, in (74), the RSVC *xiu hao* ‘fix good’ already indicates the direct object *shouyinji* ‘radio’ ends up in good condition, which contradicts the additional assertion that the radio still has some noise problems. In (75), *xue hui* ‘study acquire’ already indicates that ‘I’ studied and acquired the skill of driving. Hence, the assertion that ‘I’ still do not know the skill is infelicitous.

- (74) Wo zuotian **xiu hao** le yi ge shouyinji, #keshi hai you
 I yesterday fix good ASP one CL radio, but still have
 dian zayin.
 little noise
 ‘I fixed a radio yesterday, #but it still has a little noise.’

⁹ As we proceed, we will also see that *le* is connected with telicity as well, but we shall focus on the serial verbs for the moment and leave the discussion of *le* in Section 3.3.2.2.

- (75) Wo yi nian qian **xue hui** le kaiche, #keshi xianzai wo
 I one year before study acquire ASP drive, but now I
 hai bu zhidao zenme kaiche.
 still not know how drive
 ‘One year ago I learnt driving, #but now I still don’t know how to
 drive.’

The same phenomenon is also observed with English accomplishment events. For example, in (76), ‘write a letter’ entails an endpoint which is the completion of the letter, hence it is incompatible with the following assertion that she did not finish writing it; in (77), the verb *learnt* entails that the driving skill is acquired, hence it clashes with the following assertion that she still doesn’t know how to drive.

- (76) She wrote a letter yesterday, #but she didn’t finish writing it.
 (77) She learnt driving last year, #but she still doesn’t know how to drive.

Compared with the RSVC sentences, the ones without the resultative predicate can take endpoint-cancelling assertions quite neatly because initially no endpoint is entailed.

- (78) Wo zuotian **xie** le yi feng xin, keshi hai mei xie
 I yesterday write ASP one CL letter, but still not write
 zuihou yi duan.
 last one paragraph
 ‘I was writing a letter yesterday, but I have not written the last para-
 graph.’
- (79) Wo zuotian **xiu** le yi ge shouyinji, keshi hai you dian zayin.
 I yesterday fix ASP one CL radio, but still have little noise
 ‘I was fixing a radio yesterday, but it still has a little noise.’
- (80) Wo yi nian qian **xue** le kaiche, keshi xianzai wo hai bu
 I one year before study ASP drive, but now I still not
 zhidao zenme kaiche.
 know how drive
 ‘One year ago I was learning driving, but now I still don’t know how
 to drive.’

Therefore, adding an assertion that denies the endpoint constitutes a good test to judge whether the event in question contains an inherent endpoint, in other words, whether the event is telic.

Now moving back to the DSVC data in (70) and (71). If both variants in (70) mean, as the translation shows, ‘brought one bowl of soup’, then both variants are describing an event with an endpoint: the soup’s arrival at the place where the speaker stays. This means, they should not be able to take an assertion that cancels this endpoint. Similarly, if all the three variants in (71) mean ‘brought inside a bowl of soup’, then they should also entail an endpoint, hence rejecting an assertion that cancels the endpoint. However, by applying the assertion test, we observe interesting effects.

If we keep the aspect marker *le*, adding a telos-cancelling assertion invariably results in infelicity in all the variants:

- (81) a. Ta **song lai** le yi-wan tang, #keshi hai mei dao.
3sg send come ASP one-CL soup but still not arrive
- b. Ta **song** le yi-wan tang **lai**, #keshi hai mei dao.
3sg send ASP one-CL soup come, but still not arrive
‘S/He brought one bowl of soup, #but it has not arrived.’
- (82) a. Ta **song jin lai** le yi wan tang, #keshi zai waimian
3sg send enter come ASP one CL soup, but at outside
bei qiang le.
PASS rob ASP
- b. Ta **song** le yi wan tang **jin lai**, #keshi zai waimian
3sg send ASP one CL soup enter come but at outside
bei qiang le.
PASS rob ASP
- c. Ta **song jin** le yi wan tang **lai**, #keshi zai waimian
3sg send enter ASP one CL soup come but at outside
bei qiang le.
PASS rob ASP
‘S/He brought in a bowl of soup, #but it was robbed outside.’

However, when the aspect marker *le* is absent, the telos-cancelling assertion becomes acceptable by the $V_{\text{dis}} O V_{\text{deic}}$ order in (70) and the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order in (71).

- (83) a. Ta **song lai** yi wan tang, #keshi hai mei dao.
3sg send come one CL soup but still not arrive
- b. Ta **song** yi wan tang **lai**, keshi hai mei dao.
3sg send one CL soup come, but still not arrive
'S/He brought one bowl of soup, #but it has not arrived.'
- (84) a. Ta **song jin lai** yi wan tang, #keshi zai waimian bei
3sg send enter come one CL soup, but at outside PASS
qiang le.
rob ASP
- b. Ta **song** yi wan tang **jin lai**, keshi zai waimian bei
3sg send one CL soup enter come but at outside PASS
qiang le.
rob ASP
- c. Ta **song jin** yi wan tang **lai**, #keshi zai waimian bei
3sg send enter one CL soup come but at outside PASS
qiang le.
rob ASP
'S/He brought in a bowl of soup, #but it was robbed outside.'

More examples of such are illustrated in (85), where the V_{dis} *ji* 'post' is followed by a single V_{deic} *lai* 'come', and (86), where the V_{dis} *tui* 'push' is followed by a V_{gen} *chu* 'exit' and a V_{deic} *lai* 'come'. Again, we observe that under the condition of *le* absence, only the V_{dis} O V_{deic} order and the V_{dis} O V_{gen} V_{deic} order are compatible with the telos-cancelling assertion while the other orders are not.

- (85) a. Shang ge yue, Xiaoming **ji lai** yi feng xin, #keshi
last CL month, Xiaoming post come one CL letter, but
wo hai mei shou dao.
I still not receive arrive
- b. Shang ge yue, Xiaoming **ji** yi feng xin **lai**, keshi wo
last Cl month, Xiaoming post one CL letter come, but I
hai mei shou dao.
still not receive arrive
Intended meaning: 'Last month, Xiaoming posted a letter (to-
wards the speaker), but I have not received it. '

- (86) a. Xiaoming cong wu-li **tui chu lai** shi ge xiangzi,
 Xiaoming from room-inside push exit come ten CL box,
 #keshi you yi ge ka zai le menkou.
 but have one CL stuck at ASP doorway
- b. Xiaoming cong wu-li **tui** shi ge xiangzi **chu lai**,
 Xiaoming from room-inside push ten CL box exit come,
 keshi you yi ge ka zai le menkou.
 but have one CL stuck at ASP doorway
- c. Xiaoming cong wu-li **tui chu** shi ge xiangzi **lai**,
 Xiaoming from room-inside push exit ten CL box come,
 #keshi you yi ge ka zai le menkou.
 but have one CL stuck at ASP doorway
 Intended meaning: ‘Xiaoming pushed out (towards the speaker)
 ten boxes, but one of them got stuck in the doorway.’

The data in (83) to (86) suggest that without the aspect marker *le*, the word order $V_{\text{dis}} O V_{\text{deic}}$ and $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ do not entail an endpoint, yielding atelic interpretation, while the other orders do entail an endpoint, yielding telic reading. But when *le* is added, the two atelic-reading word order variants are converted to telic reading, just as (81) and (82) show.

The telicity difference between the word order variants is very subtle. Besides, the data provided by the descriptive literature mostly includes *le*, which makes it even harder to detect this difference in telicity. Therefore, the existing literature discussing the word order alternations in DSVCs all take it for granted that the variants have the same meaning. Now that we have seen some evidence suggesting the telicity difference, I shall reflect the difference in the translation. However, there is no perfect match in English to illustrate the telicity difference. As a compromise, I adopt the perfective aspect to translate the telic-reading variants, and imperfective aspect to translate the atelic-reading ones in the rest of this thesis. Note that I am not suggesting that the difference we are talking about here lies in perfectivity/imperfectivity. The translation is just used to emphasize the fact that the variants have different interpretations. It should be born in mind that the actual difference lies in whether an endpoint is entailed. Take (83) as an example, (83-a) entails that the goal/endpoint of the soup is the speaker while (83-b) asserts that he sends the soup in the direction of the speaker, but it doesn't entail the final destination of the soup is the speaker.

From the assertion test shown above, we see that the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order in the Group 1 word order alternations and the $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$ order in the Group 2 word order alternations are atelic while the other orders are telic. This intuition can be further supported by some other widely used telicity tests, which are in-PP test, take-time construction test, for-PP test and ‘almost’ test¹⁰.

In-PP refers to a bounded time adverbial phrase such as the English preposition phrases ‘in ten minutes’, ‘in one hour’, etc. In-PPs can modify telic events but not atelic events. For example:

(87) John painted a picture in an hour.

(88) *John walked in an hour.

It is essential to use simple past tense sentences with the in-PP test, as in-PPs with future tense can modify any class of predicate, with the ‘time to pass before event begins’ reading (Kearns 2000: 160). For example, (89)-(92) show that in-PP is compatible with all the four situation types, regardless of their telicity. With the accomplishment, namely (91), the in-PP is ambiguous between expressing the actual duration of the event and the time to pass before the event begins.

(89) Bill will know her in one year. (**state**)

(90) They will chat in five minutes. (**activity**)

(91) John will eat an apple in an hour. (**accomplishment**)

(92) John will recognize the girl in a minute. (**achievement**)

Now I apply the in-PP test to the word order variations. Again note that I do not include *le* in my example because if the aspect marker *le* is present, all the orders can take the in-PP and give the duration of the event reading.

Example (93) shows the result of the Group 1 alternations with the in-PP test.

¹⁰For a full discussion of telicity test, see Dowty(1979).

- (93) a. Ta yi-xiaoshi-nei **song lai** yi wan tang.
 3sg one-hour-in send come one CL soup
 ‘S/He brought one bowl of soup in one hour.’/ ‘S/He will bring a soup in one hour.’
- b. Ta yi-xiaoshi-nei **song yi wan tang lai**.
 3sg one-hour-in send one CL soup come
 *‘S/He brought in one bowl of soup in one hour.’/ ‘S/He will bring a soup in one hour.’

Mandarin has no morphological changes on the verbs to express tenses. The notion of tense is normally identified by time-denoting adverbials such as *zuotian* ‘yesterday’, *xianzai* ‘now’ or *liangzhou yihou* ‘two weeks later’, or modals such as *hui* ‘will’. Since the in-PP is ambiguous between the past tense reading and the future tense reading, we would expect to see that the two word orders give two readings with the in-PP. However, as is shown in the translation, while the $V_{\text{dis}} V_{\text{deic}} O$ order ((93-a)) can express two readings with the in-PP, the $V_{\text{dis}} O V_{\text{deic}}$ order can only express the future reading with the in-PP. Since the in-PP test for telic event is only valid in the past tense reading, only the $V_{\text{dis}} V_{\text{deic}} O$ order survives the in-PP test.

This result can also be shown in (94), where a past-time-denoting adverbial ‘yesterday’ is added to the sentences, forcing a past tense reading.

- (94) a. Zuotian ta yi-xiaoshi-nei song lai yi wan tang.
 yesterday 3sg one-hour-in send come one CL soup
 ‘S/He brought one bowl of soup in one hour yesterday.’
- b. ?Zuotian ta yi-xiaoshi-nei song yi wan tang lai.
 yesterday 3sg one-hour-in send one CL soup come
 Intended: ‘S/He brought in one bowl of soup in one hour yesterday.’

As can be seen in (94-b), the $V_{\text{dis}} O V_{\text{deic}}$ order is odd in this syntactic environment. To express the intended meaning, a native speaker would either use the $V_{\text{dis}} V_{\text{deic}} O$ order, or add an aspect marker *le* to the $V_{\text{dis}} O V_{\text{deic}}$ order, as in (95), which again confirms our earlier observation that *le* can convert the $V_{\text{dis}} O V_{\text{deic}}$ order from atelic to telic.

- (95) Zuotian ta yi-xiaoshi-nei song le yi wan tang lai.
 yesterday 3sg one-hour-in send ASP one CL soup come
 ‘S/He brought in one bowl of soup in one hour yesterday.’

Similarly, applying the in-PP test to the Group 2 word orders, we get (96).

- (96) a. Ta yi-xiaoshi-nei **song jin lai** yi wan tang.
 3sg one-hour-in send enter come one CL soup
 ‘S/He brought in one bowl of soup in one hour.’/‘S/He will bring
 in one bowl of soup in one hour.’
- b. Ta yi-xiaoshi-nei **song yi wan tang jin lai**.
 3sg one-hour-in send one CL soup enter come
 *‘S/He brought in one bowl of soup in one hour.’/‘S/He will bring
 in one bowl of soup in one hour.’
- c. Ta yi-xiaoshi-nei **song jin yi wan tang lai**.
 3sg one-hour-in send enter one CL soup come
 ‘S/He brought in one bowl of soup within one hour.’/‘S/He will
 bring in one bowl of soup in one hour.’

We can see that the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order has the same behaviour as the $V_{\text{dis}} O V_{\text{deic}}$ order in Group 1: it cannot yield past tense reading with an in-PP. In contrast, the other two orders, i.e. $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$, are both compatible with the in-PP in the past tense reading. In other words, the in-PP test suggests that among the Group 2 variants, the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order is atelic while the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ orders are telic.

Apart from the in-PP test, another similar test to identify telic events is the ‘take time construction’ test. It is observed that the construction ‘It took (duration time) to...’ is compatible with accomplishment and achievement, but not with activities (Kearns 2000: 161-162). For example:

- (97) It took five minutes for her to eat an apple.
- (98) It took five minutes for Henry to recognize his sister.
- (99) #It took half an hour for them to walk in the park.

The counterpart of ‘take time construction’ in Mandarin is shown in (100), where the verb-aspect cluster *yong le* followed by the duration time is equal to the English ‘It took (duration time)’ and the adverb *cai* emphasizes that not until the end of the duration time did the event finish. *Cai* is optional, but it makes the sentence more acceptable among more speakers.

- (100) Zhangsan **yong le** yi xiaoshi (**cai**) sha si zhe zhi ji.
 Zhangsan use ASP one hour not-until kill die this CL chicken
 ‘Zhangsan spent one hour to kill this chicken. (Zhangsan only managed to kill the chicken at the end of the one hour time.)’

(100) also shows that ‘take time construction’ works well with a resultative serial verb construction, *sha si*, which we originally know is telic. Now we apply the test to the word order variants and see what happens. Interestingly, we observe again that the $V_{\text{dis}} O V_{\text{deic}}$ and the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ orders are not able to entertain a ‘take time construction’ as well as the other orders. They can only do so with an aspect marker *le*, while the other orders allow *le* to be absent. The examples of the Group 1 and Group 2 word orders are shown in (101) and (102) respectively.

- (101) a. Zhangsan yong le yi xiaoshi cai **ban lai** (le) yi
 Zhangsan use ASP one hour not-until move come ASP one
 xiang shu.
 CL book
 b. Zhangsan yong le yi xiaoshi cai **ban** *(le) yi xiang
 Zhangsan use ASP one hour not-until move ASP one CL
 shu **lai**.
 book come
 ‘It took one hour for Zhangsan to carry here a box of books.’
- (102) a. Zhangsan yong le yi xiaoshi cai **ban jin lai**
 Zhangsan use ASP one hour not-until move enter come
 (le) yi xiang shu.
 ASP one CL book
 b. Zhangsan yong le yi xiaoshi cai **ban** *(le) yi xiang
 Zhangsan use ASP one hour not-until move ASP one CL
 shu **jin lai**.
 book enter come

- c. Zhangsan yong le yi xiaoshi cai **ban jin** (le) yi
 Zhangsan use ASP one hour not-until move enter ASP one
 xiang shu **lai**.
 CL book come
 ‘It took one hour for Zhangsan to carry in here a box of books.’

Contrary to the in-PP test and the ‘take time construction’ test, for-PP is reported to identify atelic events¹¹. For example:

- (103) They were happy for thirty years. (**state**)
 (104) They chatted for an hour. (**activity**)
 (105) #John ate the apple for half an hour. (**accomplishment**)
 (106) #They reached the summit for half an hour. (**achievement**)

The Mandarin for-PPs are located after the verb phrase and require the duplication of the verb, for example:

- (107) Ta kan dianshi kan le liang xiaoshi.
 3sg look TV look ASP two hour
 ‘S/He watched TV for two hours.’

Applying the for-PP test to the word order variants, we observe that the V_{dis} O V_{deic} and the V_{dis} O V_{gen} V_{deic} orders are much better than other orders with a for-PP, as in examples (108) and (109), confirming our observation that these two orders are atelic.

- (108) a. */?Zhangsan **song lai** yi xiang shu song le yi xiaoshi.
 Zhangsan send come one CL book send ASP one hour
 ‘*Zhangsan brought one box of books for one hour.’
 b. Zhangsan **song yi** xiang shu **lai** song le yi xiaoshi.
 Zhangsan send one CL book come send ASP one hour
 ‘Zhangsan has been bringing one box of books for one hour.’

¹¹The for-PP can modify telic predicates on a different interpretation: expressing the result state. But the for-PP test only focuses on the event duration interpretation (Kearns 2000: 163).

- (109) a. */?Zhangsan **song jin lai** yi xiang shu song le yi
 Zhangsan send enter come one CL book send ASP one
 xiaoshi.
 hour
 *‘Zhangsan brought in one box of books for one hour.’
- b. Zhangsan **song** yi xiang shu **jin lai** song le yi
 Zhangsan send one CL book enter come send ASP one
 xiaoshi.
 hour
 ‘Zhangsan has been bringing one box of books for one hour.’
- c. */?Zhangsan **song jin** yi xiang shu **lai** song le yi
 Zhangsan send enter one CL book come send ASP one
 xiaoshi.
 hour
 *‘Zhangsan brought in one box of books for one hour.’

The last test I adopt is the ‘almost test’: the adverb ‘almost’ has different effects on telic/atelic events. Specifically, a telic event, such as (110), gives two readings with ‘almost’. In the first reading, the scope of *almost* is over the whole event, namely, ‘John had the intention of painting a picture, but then he changed his mind and did nothing at all.’ In the second reading, the scope of *almost* is over the result, namely, ‘John did begin work on the painting and he almost but not quite finished it.’

- (110) John almost painted a picture.

An atelic event with ‘almost’, e.g. (111), only has the reading in which the *almost*’s scope is over the whole event: John did not walk at all.

- (111) John almost walked.

I use *chadiar* as the Chinese counterpart of ‘almost’ and insert it into the Group 1 word orders. To justify the two possible readings more explicitly, I also add two assertions at the end of each sentence, separated by slash. Basically, the first assertion denies the whole event, so if the clause before it can be interpreted as the whole event did not happen at all (‘almost’ scope over the whole event), this assertion should be licensed. The second assertion denies the result state only, so if the clause before it can be interpreted as the action has been carried out but the result is not attained (‘almost’ scope over the result), this assertion should be accepted. The test result is shown in (112).

- (112) a. Ta zuotian chadiar **song lai** yi-wan tang. Keshi
 3sg yesterday almost send come one-CL soup but
 shuiguotou le jiu mei song. / Keshi song dao banlu
 oversleep ASP then not song. / but send arrive halfway
 bei qiang le.
 PASS rob ASP
 ‘S/He almost brought one bowl of soup yesterday, but s/he did
 not do it because s/he overslept. / but it was robbed halfway.’
- b. Ta zuotian chadiar **song yi-wan tang lai**. Keshi
 3sg yesterday almost send one-CL soup come but
 shuiguotou le jiu mei song. /? Keshi song dao banlu
 oversleep ASP then not song. / but send arrive halfway
 bei qiang le.
 PASS rob ASP
 ‘S/He almost did the action of bringing one bowl of soup yester-
 day, but s/he did not do it because s/he overslept. / ?but it was
 robbed halfway.’

As is shown in (112), the $V_{\text{dis}} V_{\text{deic}} O$ order accepts the two assertions, which means it can yield two readings naturally. In comparison, the $V_{\text{dis}} O V_{\text{deic}}$ order can accept the first assertion but is odd with the second assertion, which shows that the $V_{\text{dis}} O V_{\text{deic}}$ order is possibly atelic.

Similarly, applying the ‘almost’ test on the Group 2 word orders, with the first assertion testing the possibility of the reading with the *chadiar*’s scope over the whole event and the second assertion testing the reading with the *chadiar*’s scope over the result state, we see the following result:

- (113) a. Ta zuotian chadiar **song jin lai** yi-wan tang. Keshi
 3sg yesterday almost send enter come one-CL soup but
 shuiguotou le jiu mei song. / Keshi song dao banlu
 oversleep ASP then not song. / but send arrive halfway
 bei qiang le.
 PASS rob ASP
 ‘S/He almost brought in one bowl of soup yesterday, but s/he did
 not do it because s/he overslept. / but it was robbed halfway.’

- b. Ta zuotian chadiar **song** yi-wan tang **jin lai**. Keshi
 3sg yesterday almost send one-CL soup enter come but
 shuiguotou le jiu mei song. /? Keshi song dao banlu
 oversleep ASP then not song. / but send arrive halfway
 bei qiang le.
 PASS rob ASP
 ‘S/He almost did the action of bringing a bowl of soup yesterday,
 but s/he did not do it because s/he overslept. / ?but it was
 robbed halfway.’
- c. Ta zuotian chadiar **song jin** yi-wan tang **lai**. Keshi
 3sg yesterday almost send enter one-CL soup come but
 shuiguotou le jiu mei song. / Keshi song dao banlu
 oversleep ASP then not song. / but send arrive halfway
 bei qiang le.
 PASS rob ASP
 ‘S/He almost brought in one bowl of soup yesterday, but s/he did
 not do it because s/he overslept. / but it was robbed halfway.’

As is illustrated in (113), the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ order and the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order allow both scope readings, which resembles the telic events. In comparison, the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order definitely allows the wide scope reading while the narrow scope reading is odd, which again suggests that they are atelic.

In view of all the telicity tests illustrated so far, we have a general impression that in the Group 1 word order variation, the $V_{\text{dis}} V_{\text{deic}} O$ order is telic while the $V_{\text{dis}} O V_{\text{deic}}$ order is atelic. In the Group 2 word order alternations, the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ order and the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order are telic while the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order is atelic. The telic variants indicate an inherent endpoint denoted by the directional verb, which is analogous to the case of an RSVC where the endpoint is expressed by the resultative predicate. The atelic orders do not entail the endpoint. The source of the telicity difference is discussed in Sections 3.3 and 4.3.2

2.2.2.2 Interaction with the Aspect Marker *le*

In this section, we investigate the interaction between the aspect marker *le* and the word order variants. Specifically I show the syntactic position of *le* in each word order and the semantic effect that *le* poses on them.

First, I shall provide a brief introduction to the Chinese morpheme *le* considering that *le* itself is a very complex topic in the literature which has caused loads of debate.

In Mandarin Chinese, the morpheme *le* is observed to occur after verbs or predictive adjectives (referred to as verb-*le*) or at the end of the sentences (referred to as sentence-*le*). There have been debates on the relation between these two *les*: whether there are two *les* (homonyms) (Chao 1968, Li & Thompson 1981, Sybesma 1999), or whether both *les* are really instances of one morpheme (Rohsenow 1977, Ping 1990). The two-*le* theory posits that the verb-*le* and the sentence-*le* differ in semantics. Verb-*le* “expresses perfectivity, that is, it indicates that an event is being viewed in its entirety or as a whole” (Li & Thompson 1981: 185). For example, (114) entails that the event of buying a book is a whole and over, without attention paid to the internal phases.

- (114) Wo mai le yi ben shu.
 I buy LE one CL book
 ‘I (have) bought a book’

This is why verb-*le* is also referred to as perfective aspect marker in a large amount of literature. More analysis about the verb-*le* will be given in Section 3.3.2.2. The important point here is that the function of verb-*le* is normally considered to be related to aspect.

The sentence final *le*, according to Chao (1968:798), expresses “inchoativity”, which in Li and Thompson’s term is Current Relevant State. Sybesma interprets the sentence *le* in the following way:

“sentence *le* expresses that the preceding sentence denotes a state which is relevant for the present moment, implying that some change has occurred... Sentences with sentence *le* are best paraphrased as something like: ‘the state of affairs [expressed in the part of the sentence preceding *le*] has begun’ or ‘it is now the case that [the state of affairs denoted by the sentence preceding *le*]’ ”

(Sybesma 1999: 60)

For example, (115) indicates that the state that ‘I love Xiaoming’ did not hold a moment ago, but it is the case now.

- (115) Wo ai shang Xiaoming le.
I love ascend Xiaoming LE
'I fell in love with Xiaoming.'

Sybesma (1999:62) shows an example to illustrate the different semantic effects of the two *les*.

- (116) Qiche zhuang dao le daqiao.
car hit down LE bridge
'The car knocked down the bridge'

- (117) Qiche zhuang dao daqiao le.
car hit down bridge LE
'The car knocked down the bridge.'/'The car has begun knocking down the bridge'.

The sentence with verb-*le* (Example (116)) clearly expresses that the bridge has been knocked down. The one with sentence-*le* (Example (117)) is ambiguous between a past event reading and a non-past event reading, in which the speaker is asserting the on-going scene that the car is hitting down the bridge.¹²

Further, the verb-*le* and sentence-*le* can co-occur in the same sentence (see (119)), which strongly suggests that the two *les* should not be the same morpheme since having two aspect markers with exactly the same function is obviously redundant:

- (119) Wo ai shang le Xiaoming le.
I love ascend LE Xiaoming LE
'I fell in love with Xiaoming.'

The other theory which assumes that there is only one-*le* tries to unify the meaning of the verb-*le* and sentence-*le*. However, it is very hard for such a view to capture the distributional difference between the two *les*, and explain the semantic difference demonstrated in (116)-(117)¹³. In this thesis, I adopt the

¹²The latter reading is clearer if we add some context as in (118):

- (118) Kan! Qiche zhuang dao daqiao le.
look! car hit down bridge LE
'Look! The car is knocking down the bridge'.

¹³For a discussion against the one-*le* approach, see Sybesma (1999:61-65)

two-*le* approach and gloss the verb-*le* as ASP and the sentence *le* as SFP (short for Sentence Final Particle). But one tricky case is that when the sentence ends with an intransitive verb, the final *le* is ambiguous between verb-*le* and sentence-*le*, for example:

- (120) Wo lai le.
 I come LE
 ‘I have come.’/‘I’m coming.’

When *le* is interpreted as ASP, the sentence only has the first reading that ‘I have come’; when the *le* is interpreted as SFP, the sentence can have two readings. Therefore, *le* appearing after a sentence final intransitive verb should be viewed as an ASP marker combined with a sentence final particle. In other words, the tree representation underneath (120) contains two *les* occupying two different syntactic positions: the ASP *le* heads the projection denoting aspect while the SFP *le* probably heads a projection in the C domain (Paul 2015: Ch7). Then when spelt out, the two *les* are pronounced only once. I will gloss this type of *le* as ASP/SFP to indicate such ambiguity. In this thesis, we will focus on the interaction between the verb-*le* (namely the ones glossed as ASP or ASP/SFP) and each word order variant. Unambiguous sentence-*le* (the ones glossed as SFP) would be left aside because it invariably appears at the end of the sentence regardless of the word orders preceding it.

In Section 3.3.2.2, I will further show that the claim that the verb-*le* expresses perfectivity/completion is over simplified. Although (114) suggests that *le* denotes the action of buying is completed, some other examples shows that verb-*le* does not necessarily indicate the completion of the action denoted by the verb. For example:

- (121) Ta xie le yi feng xin, keshi mei xie wan.
 he write ASP one CL letter, but not write finish
 ‘He was writing a letter, but he did not finish it.’

In (121), if *le* indicates the completion of writing, then the following assertion will be infelicitous, which in fact is licensed. To account for the semantic effect of *le* demonstrated in (121), the terminology ‘termination/realization’ are adopted instead of ‘completion’ (Liu 1988, Smith 1997, Sybesma 1999). Moreover, Sybesma further propose that the surface verb-*le* is the instantiation

of two different syntactic item which occupies different positions in the syntax: one is called ENDPOINT *le* and the other is called REALIZATION *le*. In other words, following this view, there are three *les* in Mandarin: one sentence final *le*, into which we will not dig further in this thesis, and two verb-*les*. The detailed discussion on the two verb-*les* is addressed in 3.3.2.2.

Since we have already seen that the distribution of the verb-*le* is after verbs, a natural question arises: among all the verbs in a DSVC, after which verb can the verb-*le* (i.e. ASP *le*) occur?

Starting from the Group 1 word orders, we add *le* after each verb in the strings, as is shown in (122).

- (122) a. Ta **song** (*le) **lai** (le) tang.
 he send ASP come ASP soup
 b. Ta **song** (le) tang **lai** (le).
 he send ASP soup come ASP/SFP

We find that *le* can only occur after the V_{deic} in the $V_{\text{dis}} V_{\text{deic}} O$ variant, but not after the V_{dis} , as is shown in (122-a). Nevertheless, *le* can occur after V_{dis} in the $V_{\text{dis}} O V_{\text{deic}}$ variant as is shown in (122-b). Besides, *le* can also occur after V_{deic} in (122-b). As we have just mentioned, *le* occurring after a sentence final intransitive verb is viewed as a combination of aspect marker and sentence final particle (shown as ASP/SFP in the gloss). However, by closer observation, we can exclude the possibility that this *le* is an aspect *le*. Firstly, the sentence final *le* in (122-b) can always co-occur with the *le* following *song*, which itself is undoubtedly the ASP *le*. If the sentence final *le* is also the ASP *le*, the sentence would involve two morphemes with exactly the same grammatical function occupying two different positions, which is not accepted by the general syntactic theory. Therefore, the sentence final *le* can only be the SFP *le*. Moreover, the interpretation of this *le* also indicates that it does not carry the ASP *le*'s function. What this *le* does in (122-b) can be paraphrased in the Sybesma's way, addressed earlier in this section, which is to express that "the state of affairs that [he send soup come] has begun" or "it is now the case that [he send soup come]". This *le* does not express that 'he' or 'the soup' has come. In other words, this *le* only takes scope over the whole sentence rather than over the sentence final intransitive verb *lai*. Therefore, the sentence final *le* in (122-b) should only be glossed as SFP, which means it is not within our interest about the interaction between the word orders and ASP *le*.

Then the essential observation in (122) can be summarised as follows: in the $V_{\text{dis}} V_{\text{deic}} O$ variant, ASP *le* has to follow V_{deic} but not V_{dis} ; in the $V_{\text{dis}} O V_{\text{deic}}$ variant, ASP *le* follows V_{dis} .

Now turning our attention to the position of *le* in the Group 2 word order alternations, we see the following result¹⁴:

- (123) a. Ta **song** (*le) **jin** (*le) **lai** (le) tang.
 he send *ASP enter *ASP come ASP soup
- b. Ta **song** (le) tang **jin** (*le) **lai** (le).
 he send ASP soup enter *ASP come SFP
- c. Ta **song** (*le) **jin** (le) tang **lai** (le).
 he send *ASP enter ASP soup come SFP

There are two basic observations: first, the aspect *le* cannot appear after the $V_{\text{dis}} \textit{song}$ in the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order, but it can do so in the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order. Second, *le* cannot intervene between V_{gen} and V_{deic} when there are no other constituents between them. The second point is illustrated by the starred *le* between *jin* and *lai* in (123-a) and (123-b).

Apart from the difference in distribution, *le* also brings different semantic effect to the word order variants, which has already been mentioned in Section 2.2.2.1: *le* converts the atelic variants (the ones with a VOV word order pattern including $V_{\text{dis}} O V_{\text{deic}}$ and $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$) to telic, but it does not change the telicity value of the telic variants (the ones with a VVO word order pattern, including $V_{\text{dis}} V_{\text{deic}} O$, $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$, $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$). The examples to support this view are repeated in (124) and (125), in which *le* is added to all the word order variants and all of them crash with the telos-cancelling assertion. This suggests that the originally telic variants are still telic while the originally atelic ones become telic as well.

- (124) a. Ta **song lai** le yi-wan tang, #keshi hai mei dao.
 3sg send come ASP one-CL soup but still not arrive
- b. Ta **song** le yi-wan tang **lai**, #keshi hai mei dao.
 3sg send ASP one-CL soup come, but still not arrive
 ‘S/He brought one bowl of soup, #but it has not arrived.’

¹⁴Again we can argue that the sentence final *le* in (123-b) and (123-c) is simply SFP rather than a combination of ASP and SFP.

- (125) a. Ta **song jin lai** le yi wan tang, #keshi zai waimian
 3sg send enter come ASP one CL soup, but at outside
 bei qiang le.
 PASS rob ASP
- b. Ta **song** le yi wan tang **jin lai**, #keshi zai waimian
 3sg send ASP one CL soup enter come but at outside
 bei qiang le.
 PASS rob ASP
- c. Ta **song jin** le yi wan tang **lai**, #keshi zai waimian
 3sg send enter ASP one CL soup come but at outside
 bei qiang le.
 PASS rob ASP
 ‘S/He brought in a bowl of soup, #but it was robbed outside.’

We will revisit *le* in Section 3.3.2.2 and the analysis of the distribution of *le* in the word order variants is addressed in Section 4.3.3.

2.2.2.3 Negation

The word order variants demonstrate different behaviour when they are combined with negations.

There are two negation morphemes in Mandarin which are *bu* and *mei*. Traditional Chinese grammar normally describes the differences between the two according to their usage. Basically, *bu* is used to negate a future action, expressing that the speaker does not intend to do something, or to negate habitual actions, expressing the subject is not in the habit of doing something. For example,

- (126) Jintian wo bu qu xuexiao.
 today I NEG go school
 ‘I don’t intend to go to school today.’
- (127) Xiaoming bu xihuan chi xiangjiao.
 Xiaoming NEG like eat banana
 ‘Xiaoming does not like eating bananas.’

Mei is used to negate actions that occurred in the past.

- (128) Wo zuotian mei he jiu.
 I yesterday NEG drink alcohol
 ‘I didn’t drink alcohol yesterday.’

Syntactically, *bu* can not co-occur with any aspect markers while *mei* can co-occur with the durative marker *zhe* and an experiential aspect maker *guo*, but not with *le*:

- (129) a. *Wo bu dai zhe maozi.
 I NEG wear DUR hat
 ‘I’m not wearing a hat.’
 b. *Wo bu kan guo dianying.
 I NEG look EXP movie
 ‘I have not watched movies.’
 c. *Wo bu kan le dianying.
 I NEG look ASP movie
 ‘I did not watch the movie/movies.’

- (130) a. Wo mei dai zhe maozi.
 I NEG wear DUR hat
 ‘I’m not wearing a hat.’
 b. Wo mei kan guo dianying.
 I NEG look EXP movie
 ‘I have not watched movies.’
 c. Wo mei kan (*le) dianying.
 I NEG look ASP movie
 ‘I did not watch the movie/movies.’

Interestingly, we observe that *bu* can only take the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order in Group 1 and the $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$ order in Group 2, whilst *mei* can take all the word orders. The examples are show in (131) (132) and (133) (134) respectively. Note that there is no aspect marker in the examples, so the ungrammaticality is not caused by the co-occurrence with aspect markers.

- (131) a. *Xiaoming bu **song lai** tang.
 Xiaoming NEG send come soup
 b. Xiaoming bu **song** tang **lai**.
 Xiaoming NEG send soup come
 ‘Xiaoming does not have the habit of bringing the soup’/‘Xiaoming does not intend to bring the soup’.

- (132) a. *Xiaoming bu **song jin lai** tang.
Xiaoming NEG send enter come soup
- b. Xiaoming bu **song tang jin lai**.
Xiaoming NEG send soup enter come
- c. *Xiaoming bu **song jin tang lai**.
Xiaoming NEG send enter soup come
'Xiaoming does not have the habit of bringing in the soup'/'Xiaoming does not intend to bring in the soup'.
- (133) a. Xiaoming mei **song lai** tang.
Xiaoming NEG send come soup
- b. Xiaoming mei **song tang lai**.
Xiaoming NEG send soup come
'Xiaoming did not bring the soup.'
- (134) a. Xiaoming mei **song jin lai** tang.
Xiaoming NEG send enter come soup
- b. Xiaoming mei **song tang jin lai**.
Xiaoming NEG send soup enter come
'Xiaoming did not bring in the soup.'
- c. Xiaoming mei **song jin tang lai**.
Xiaoming NEG send enter soup come
'Xiaoming did not bring in the soup.'

In other words, while the word orders with atelic interpretation are compatible with both negations, the word orders with telic interpretation are not compatible with *bu*, but compatible with *mei*. The DSVCs with telic word orders resemble the RSVCs, which also accept *mei* but not *bu*. For example, (135) (136) and (137) (138) show that the RSVC *da si* and *ku shi* cannot take the negation *bu*, but accept *mei*.

- (135) *Xiaoming bu **da si** lang.
Xiaoming NEG hit die wolf
Intended meaning: 'Xiaoming does not have the habit of killing the wolf'/'Xiaoming does not intend to kill the wolf'.
- (136) Xiaoming mei **da si** lang.
Xiaoming NEG hit die wolf
'Xiaoming did not kill the wolf.'

- (137) *Xiaoming bu **ku shi** shoujuan.
 Xiaoming NEG cry wet handkerchief
 Intended meaning: ‘Xiaoming does not have the habit of crying the handkerchief wet.’/‘Xiaoming does not intend to cry the handkerchief wet.’
- (138) Xiaoming mei **ku shi** shoujuan.
 Xiaoming NEG cry wet handkerchief
 ‘Xiaoming did not cry the handkerchief wet.’

I will show in Section 4.3.5 that the compatibility between the word orders and the two negation markers is also due to the different underlying structures.

2.2.2.4 Potential Morphemes *de/bu*

The word orders also differ in the compatibility with the potential morpheme *de/bu*. We have briefly seen in Section 2.1.2 that Mandarin has a pair of morphemes expressing potentiality, namely, *de/bu*, glossed as ‘able/unable’. Note that the potential morpheme *bu* has the same phonological form as the negation *bu*, but they should be treated as homophones since they have very different distribution and interpretation. The potential morphemes are inserted between the action verb and the resultative predicate in RSVCs, expressing the that action denoted by the action verb can or cannot cause the result denoted by the resultative predicate, for example:

- (139) Xiaoming da *de/bu* si lang.
 Xiaoming hit able/unable die wolf
 ‘Xiaoming can / cannot kill the wolf.’

The potential morphemes can also occur in DSVCs. However, they are not licensed by all the word order variants we observed so far.

In Group 1 word orders, *de/bu* is definitely bad with the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order:

- (140) *Xiaoming **song** *de/bu* tang **lai**.
 Xiaoming send able/unable soup come
 Intended meaning: ‘Xiaoming can/cannot bring the soup.’

But they can be inserted between the V_{dis} and V_{deic} in the $V_{\text{dis}} V_{\text{deic}} O$ order if the V_{deic} is *lai*, as in (141). And in this case, the object is often preposed as in (142).

(141) Xiaoming song de lai tang.
Xiaoming send able come soup
'Xiaoming can send the soup.'

(142) Tang, Xiaoming song de lai.
soup, Xiaoming send able come
'The soup, Xiaoming can send.'

However, note that the interpretation of (141) and (142) is not that Xiaoming can bring the soup, which entails that the endpoint 'the soup arrives here' can be achieved. (141) and (142) actually mean Xiaoming can do the soup-sending action.

More interestingly, the word string *V-de/bu-lai* is also observed in Mandarin even if the first verb in the verb string is not a displacement verb, but a verb denoting no spatial transition, such as *chang* 'sing'. And the semantics of the word string *V-de/bu-lai* does not involve movement towards the speaker, but rather something like "can/cannot do the action that V denotes". For example,

(143) Xiaoming chang de/bu lai zhe shou ge.
Xiaoming sing able/unable come this CL song
'Xiaoming can/cannot sing this song.'

These pieces of data suggest that *lai* in the string *V-de/bu-lai-O* is interpreted metaphorically.¹⁵

Now we examine Group 2 word orders. We find that the potential morphemes are definitely bad with the $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ order (see (145)).

¹⁵ Note that if the V_{deic} in the $V_{\text{dis}} V_{\text{deic}} O$ order is *qu* 'go', *qu* does not have the metaphoric reading observed with *lai*, as is shown in (144).

(144) *Xiaoming chang bu qu zhe shou ge.
Xiaoming sing unable go this CL song
'Xiaoming cannot sing this song.'

This may be related to the semantic difference between *lai* and *qu*. I leave this puzzle for future research.

- (145) *Xiaoming **song** de tang **jin lai**.
 Xiaoming send able soup enter come
 ‘Xiaoming can bring in the soup.’

However, *de/bu* are compatible with the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order, especially with the object preposed. For example, (146-a) and (146-b) show that *de* is acceptable in both the $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order with a little oddity, but when the object is preposed as in (146-c), the sentence becomes perfect.

- (146) a. ?Xiaoming **song** de **jin lai** tang.
 Xiaoming send able enter come soup
 b. ?Xiaoming **song** de **jin** tang **lai**.
 Xiaoming send able enter soup come
 c. Tang, Xiaoming **song** de **jin lai**.
 soup, Xiaoming send able enter come
 ‘Xiaoming can bring in the soup.’

Recall in the Group 1 data, the V_{deic} *lai* in the string *V-de/bu-lai* does not indicate a spatial reading, but a metaphoric reading. In the Group 2 data, the $V_{\text{gen}} V_{\text{deic}}$ cluster in the string is also possible to indicate a non-spatial reading. For example, (147) shows the basic spatial reading of the verb complex *qi lai* ‘rise come’ and (148) shows the non-spatial reading of the *qi lai*.

- (147) Xiaoming **ti** bu **qi lai** zhe tong shui.
 Xiaoming lift unable rise come this CL water
 ‘Xiaoming cannot lift up this bucket of water.’
- (148) Xiaoming **xiang** bu **qi lai** zhe shou ge.
 Xiaoming think unable rise come this CL song
 ‘Xiaoming cannot recall this song.’

All in all, we observe in this section that the potential morphemes *de/bu* are banned by the word order variants with atelic interpretation, namely the VOV word order types. However, *de/bu* can be accepted by the word orders with telic interpretation, namely the VVO types. The syntactic analysis of *de/bu* in the word order variants is illustrated in Section 4.3.4. Besides, we will also see the data about *de/bu* in the serialising patten $V_{\text{gen}} V_{\text{deic}}$ (e.g. *jin de lai* ‘enter DE come’) in Section 2.4.1 and the relevant analysis in Section 4.1.3.

We also find in this section that the directional verbs following the potential morpheme can be interpreted in a metaphorical, non-spatial sense, when these directional verbs are following certain co-event verbs which do not indicate spatial movement. In Section 2.3, I further show that the phenomenon that the directional verbs in the DSVCs can be interpreted metaphorically is not confined to $V_{\text{deic}s}$ and $V_{\text{gen}}-V_{\text{deic}}$ complexes. It is also observed with $V_{\text{gen}s}$. More importantly, we will see that the metaphoric interpretation is sensitive to the word order type as well. Basically, the metaphoric reading is only available with the VVO type of word orders, not with the VOV type of word orders. The syntactic reason for this observation is revealed throughout Section 3.3 and specially addressed in Section 4.4.2.

2.2.3 Interim Summary

To close the discussion on the syntactic and semantic divergences between the word order alternations, I summarise the findings we have got so far.

The schema of the word order alternations in question are:

(149) **Group 1 word orders:**

$V_{\text{dis}} V_{\text{deic}} \text{O}$
 $V_{\text{dis}} \text{O} V_{\text{deic}}$

(150) **Group 2 word orders:**

$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} \text{O}$
 $V_{\text{dis}} \text{O} V_{\text{gen}} V_{\text{deic}}$
 $V_{\text{dis}} V_{\text{gen}} \text{O} V_{\text{deic}}$

I compare the word orders from four perspectives: telicity, position of ASP *le* and its effect, compatibility with negation, and compatibility with potential morphemes. The findings are summarised in Table 2.1.

Table 2.1: The syntactic and semantic characteristics of the word order variants

The word orders	telicity	position of ASP <i>le</i>	with negation	with <i>de/bu</i>
V _{dis} V _{deic} O	telic	V _{dis} V _{deic} <i>le</i> O	*bu, mei	YES
V _{dis} O V _{deic}	atelic	V _{dis} <i>le</i> O V _{deic}	bu, mei	NO
V _{dis} V _{gen} V _{deic} O	telic	V _{dis} V _{gen} V _{deic} <i>le</i> O	*bu, mei	YES
V _{dis} O V _{gen} V _{deic}	atelic	V _{dis} <i>le</i> O V _{gen} V _{deic}	bu, mei	NO
V _{dis} V _{gen} O V _{deic}	telic	V _{dis} V _{gen} <i>le</i> O V _{deic}	*bu, mei	YES

Note that the *le* adding to the two atelic variants converts their telicity value. In other words, the V_{dis} O V_{deic} and V_{dis} O V_{gen} V_{deic} variants become telic when *le* is added to them.

The generalization is that the VVO type of variants, i.e. V_{dis} V_{deic} O, V_{dis} V_{gen} V_{deic} O and V_{dis} V_{gen} O V_{deic}, behave in the same way and the VOV types of variants, i.e. V_{dis} O V_{deic} and V_{dis} O V_{gen} V_{deic} share the same properties in terms of the four perspectives shown in the table.

2.3 The V_{dis} V_{gen} O Order

So far we have investigated the word order alternations found in two serialising patterns in Mandarin DSVCs: V_{dis} V_{deic} and V_{dis} V_{gen} V_{deic}. Another serialising pattern beginning with V_{dis} is V_{dis} V_{gen}, namely, a displacement verb followed by a single general directional verb such as ‘enter’, ‘ascend’ and ‘descend’.

In the verb sequence V_{dis} V_{gen}, the direct object of V_{dis} can only follow the whole verb string. In other words, the string V_{dis} V_{gen} O does not allow a V_{dis} O V_{gen} variant. Compare (151-a) and (151-b).

- (151) a. Xiaoming **song jin** le yi wan tang.
Xiaoming send enter ASP one CL soup
- b. *Xiaoming **song** le yi wan tang **jin**.
Xiaoming send ASP one CL soup enter
‘Xiaoming brought in one bowl of soup.’

Note that the V_{dis} O V_{gen} order is licensed when V_{gen} is followed by a locative NP, as in (152).

- (152) Xiaoming **song** le yi wan tang **jin** fangjian.
 Xiaoming send ASP one CL soup enter room
 ‘Xiaoming brought one bowl of soup into the room.’

The locative object of directional verbs would be further addressed in Section 2.4. What is crucial here is that the serialising pattern V_{dis} V_{gen} has no word order alternation.

We find that the sequence V_{dis} V_{gen} O behaves just like the VVO types of word orders we discussed before in terms of telicity, the interaction with *le*, negation and potential morphemes.

Example (153) shows that the string *song jin yi ben shu* is telic and that the aspect *le* should be located after the second verb but not the first one.

- (153) Xiaoming **song** (*le) **jin** (le) yi ben shu, #keshi shu hai zai
 Xiaoming send ASP enter ASP one CL book, but book still at
 waimian.
 outside
 ‘Xiaoming sent in a book, #but the book is still outside.’

(154) shows that the string *ji chu* can follow the negation *mei* but not the negation *bu*.

- (154) Xiaoming mei/*bu **ji chu** yi feng xin.
 Xiaoming NEG post exit one CL letter
 ‘Xiaoming did not post out one letter.’

(155) shows that the potential morpheme can be inserted between the two verbs in the string *la chu*.

- (155) Xiaoming liqi xiao, **la** de **chu** shi ge xiangzi ma?
 Xiaoming strength small, pull able exit ten CL box SFP
 ‘Xiaoming’s strength is weak. Can he pull out ten boxes?’

Now I shall extend the data a little beyond the V_{dis} V_{gen} O string. We have briefly seen in Section 2.2.2.4 that deictic direction verbs as well as the V_{gen}

V_{deic} complex can also follow a non-spatial-denoting co-event verb, in which case the directional verbs are often interpreted metaphorically. Likewise, single V_{genS} are also found to be used in such ways.¹⁶

Examples (156) to (160) illustrate the metaphoric usage of a V_{gen} *shang* ‘ascend’.

- (156) Wo **wan shang** xiuzi, zhunbei zuofan.
I roll ascend sleeve, prepare cook
‘I rolled up the sleeves and prepare to cook.’
- (157) Xiaoming pao de tai kuai le, wo **zhui** bu **shang** ta.
Xiaoming run DE too quick SFP, I chase unable ascend 3sg
‘Xiaoming ran too fast, I couldn’t catch up with him.’
- (158) Xiaoming jinnian gang **kao shang** daxue.
Xiaoming this-year just take-exam ascend university
‘Xiaoming just passed the university entrance examination this year.’
- (159) Xiaoming momode **guan shang** le men.
Xiaoming quietly shut ascend ASP door
‘Xiaoming quietly shut the door.’
- (160) Na xiao huozi **kan shang** le Wang jia guniang.
that small lad look ascend ASP Wang family girl
‘That young lad had a crush on the girl from the Wang family.’

While we can still perceive the directional meaning of *shang*, namely ‘upward direction’ in (156), the *shang* in (157) definitely cannot be interpreted as ‘upward direction’ because the sentence is describing a horizontal movement rather than vertical movement. This *shang* is best interpreted as a result of the action *zhui* ‘chase’. In other words, *zhui shang* means ‘chase and actually catch...’ rather than ‘chase upwards’. Likewise, the *kao shang* in (158) and *guan shang* in (159) do not denote any movement event. *shang* only denotes the result states caused by the preceding verb, which are ‘the exam is passed’ and ‘the door is closed’ respectively. In (160), the action verb *kan* ‘look’ does not entail any spatial movement on the direct object *guniang* ‘girl’ and *shang* cannot be interpreted as ‘upward’ as well. Instead, *shang* in this case indicates a state in which the subject is in love. And the string *kan shang* has an idiomatic reading ‘have a crush on’.

¹⁶ More descriptive data can be found in Huang, Hsieh et al. (2008).

Example (161) and (162) show the metaphoric usage of *xia* ‘descend’. The direct objects ‘the impression’ and ‘fruits’ do not undergo any physical downward movement.

- (161) Zhe jian shi zai wo naohai-li **liu xia** le shenke de
 this CL issue at I mind-inside leave descend ASP deep DE
 yinxiang.
 impression
 ‘This issue left a deep impression on my mind.’
- (162) Ta ba naxie shuiguo quanbu **mai xia** le.
 3sg BA those fruit all buy descend
 ‘S/He bought all those fruits.’

(163) and (164) show the metaphoric usage of *chu* ‘exit’.

- (163) Xiaoming **kan chu** le wo de fannao.
 Xiaoming look exit ASP I POSS worry
 ‘Xiaoming saw through my worries.’
- (164) Zhe ci bisai, ta **pao chu** le yi fen ling wu miao de
 this CL race, 3sg run exit ASP one minute and five second DE
 hao chengji.
 good score
 ‘In this running race, s/he obtained a good result of 1’05.’

In (163), the object ‘worry’ does not, and is not, possible to physically come out of somewhere, so *kan chu* should be interpreted as ‘look and manage to figure out what’s hidden’. In (164), the object ‘good result’ does not undergo outward movement. Instead, it is interpreted as the result of the action ‘run’.

qi is the V_{gen} that is most widely used in the metaphoric way. The original meaning of *qi* is ‘rise’. Its directional meaning is similar to *shang*, namely ‘upwards’, but *qi* can never take a locative object. (165) shows an example where *qi* still maintains its directional meaning.

- (165) Xiaoming cong zhuoshang **na qi** le yi ba xiaodao.
 Xiaoming from desk-upside take rise ASP one CL knife
 ‘Xiaoming picked up a knife from the desk.’

In (166), this directional meaning is bleached. The direct object ‘that issue’ is an abstract concept which cannot physically undergo movement. But metaphorically, a past event can be recalled from one’s memory just as a slide picture rising onto a screen. Hence, *xiang qi* actually means that the subject managed to recall the issue.

- (166) Wo **xiang qi** le na jian shi.
 I think rise ASP that CL issue
 ‘I recalled that issue.’

We show in Section 2.2.2.4 that the complex clusters formed by V_{gen} and V_{deic} , such as *qi lai* ‘rise come’, can also express metaphorical meaning. Interestingly, in this case, they have to adopt a VVO type of word order rather than a VOV type, as in (167) and (168), compared with (169), where *qi lai* is not interpreted metaphorically, so all the three word orders are permitted.

- (167) a. Wo **xiang qi lai** le na jian shi.
 I think rise come ASP that CL issue
 b. *Wo **xiang** le na jian shi **qi lai**.
 I think ASP that CL issue rise come
 c. Wo **xiang qi** le na jian shi **lai**.
 I think rise ASP that CL issue come
 ‘I recalled that issue.’
- (168) a. Houzi henkuai **chi qi lai** le wo gei de xiangjiao.
 monkey quicky eat rise come ASP I give DE banana
 b. *Houzi henkuai **chi** le wo gei de xiangjiao **qi lai**.
 monkey quicky eat ASP I give DE banana rise come
 c. Houzi henkuai **chi qi** le wo gei de xiangjiao **lai**.
 monkey quicky eat rise ASP I give DE banana come
 ‘The monkey quickly started to eat the bananas given by me.’
- (169) a. Wo ti **qi lai** le na tong shui.
 I lift rise come ASP that CL water
 b. Wo **ti** le na tong shui **qi lai**.
 I lift ASP that CL water rise come
 c. Wo **ti qi** le na tong shui **lai**.
 I lift rise ASP that CL water come
 ‘I lifted that bucket of water.’

The judgement about (169-b) may vary. But if we embed (168-b) and (169-b) in the *ba* sentence, a special construction in Mandarin which uses a morpheme *ba* to prepose the object before the main verb to emphasize the disposal of the object, the judgement difference between (168-b) and (169-b) becomes obvious:

(170) *Houzi ba [wo gei de xiangjiao]_i **chi** le t_i **qi lai**
 Monkey BA I give DE banana eat ASP t rise come

(171) Wo ba [na tong shui]_i **ti** le t_i **qi lai**.
 I BA that CL water lift ASP t rise come

Similarly, (172) shows the metaphoric usage of another $V_{\text{gen}} V_{\text{deic}}$ cluster *xia qu* ‘descend go’. *xia qu* follows the co-event verb *yan* ‘act’, whose direct object ‘drama’ does not undergo physical movement, but temporal changes. In this case, the VOV variant is banned.

- (172) a. Wo mei banfa bang ni **yan xia** **qu** zhe chang xi
 I Neg method help you act descend go this CL drama
 le.
 SFP
- b. *Wo mei banfa bang ni **yan** zhe chang xi **xia** **qu**
 I Neg method help you act this CL drama descend go
 le.
 SFP
 ‘I cannot help you to play this game any more.’

Strictly speaking, these data should not be subsumed under the DSVC because the first verb is not a displacement verb and the whole phrase does not express motion and direction. However, what is important here is that among all these metaphoric usages, the direct object of the co-event verb always follows a directional verb, not the co-event verb. In other words, the VVO type of word orders allow the directional verb to be interpreted metaphorically, while the VOV type of word orders disallow it. We will see the reason for this phenomenon throughout Section 3.3 and in Section 4.4.2.

2.4 More Word Orders

In Section 2.2 and Section 2.3, we have discussed three serialising patterns in Mandarin DSVCs: $V_{\text{dis}} V_{\text{deic}}$, $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}}$ and $V_{\text{dis}} V_{\text{gen}}$. However, these

are not the only serialising patterns. Recall that in Section 2.1.4, I list seven serialising patterns of Mandarin DSVCs, repeated below:

- a. $V_{\text{gen}} + V_{\text{deic}}$
- b. $V_{\text{m}} + V_{\text{deic}}$
- c. $V_{\text{m}} + V_{\text{gen}}$
- d. $V_{\text{m}} + V_{\text{gen}} + V_{\text{deic}}$
- e. $V_{\text{dis}} + V_{\text{deic}}$
- f. $V_{\text{dis}} + V_{\text{gen}}$
- g. $V_{\text{dis}} + V_{\text{gen}} + V_{\text{deic}}$

What we have looked into are patterns (e)-(g). To complete the picture of the Mandarin DSVCs, we need to investigate the remaining serialising patterns as well, including the one directly beginning with a general directional verb (a) and the ones beginning with an intransitive manner of motion verb (b,c,d).

2.4.1 The Serialising Pattern $V_{\text{gen}} V_{\text{deic}}$

The serialising pattern $V_{\text{gen}} V_{\text{deic}}$ only consists of directional verbs without any co-event verbs. If we follow Li & Thompson's work, which concludes that there are eight V_{gen} and two V_{deic} in Mandarin, then there are sixteen logical combinations of V_{gen} and V_{deic} , but two of them (*qiqu* and *kaiqu*) do not exist in Mandarin, as is illustrated in Table 2.2.

Table 2.2: The instantiation of $V_{\text{gen}} V_{\text{deic}}$ cluster in Mandarin

$V_{\text{deic}} \backslash V_{\text{gen}}$	<i>shang</i>	<i>xia</i>	<i>jin</i>	<i>chu</i>	<i>qi</i>	<i>hui</i>	<i>guo</i>	<i>kai</i>
<i>lai</i>	shanglai	xialai	jinlai	chulai	qilai	huilai	guolai	kilai
<i>qu</i>	shangqu	xiaqu	jinqu	chuqu	–	huiqu	guoqu	–

An interesting feature of the verb clusters $V_{\text{gen}} V_{\text{deic}}$ is their controversial status between a compound and a phrase, as is mentioned briefly in Section 2.1.2. To illustrate this point more clearly, I show the evidence that supports the compound view and the phrasal view respectively.

The compound status of the clusters in the form of $V_{\text{gen}} V_{\text{deic}}$ can be supported by two arguments. Firstly, aspect marker *le* can not be inserted between the two verbs. Instead, *le* can only appear at the end of the cluster, as in (173).

- (173) Xiaoming **jin** (*le) **lai** le.
 Xiaoming enter ASP come ASP/SFP
 ‘Xiaoming came in.’

Note that the sentence final *le* can be ambiguous between the sentence final particle and aspect marker, as the gloss shows. But the main point here is that *le* can definitely not occur after the V_{gen} . If V_{gen} and V_{deic} are two verbs and the aspect marker *le* is supposed to follow verbs, then why can *le* only occur after the V_{deic} but not after the V_{gen} ? The most straightforward answer would be that the cluster is a compound verb readily formed in the lexicon, hence the aspect *le* should follow the whole compound verb $V_{\text{gen}}-V_{\text{deic}}$. *le* cannot follow V_{gen} because the syntactic operation cannot see inside a compound formed in the lexicon.

The second argument supporting the compound status of the verb cluster $V_{\text{gen}} V_{\text{deic}}$ comes from the distribution of a locative object. Basically, the $V_{\text{gen}}\text{s}$ require a locative object when they are used alone. (174) is an example of the V_{gen} *jin*.

- (174) Ta jin *(fangjian) le.
 he enter room SFP
 ‘He entered the room.’

But when $V_{\text{gen}}\text{s}$ are used in serial verbs, they do not need a locative object any more (as in (175-a)). Moreover, adding a locative object at the end of the whole verb string results in ungrammaticality in Mandarin (as in (175-b))¹⁷.

- (175) a. Ta jin lai le.
 he enter come ASP/SFP
 ‘He came in.’
 b. *Ta jin lai fangjian le.
 he enter come room SFP
 ‘He came into the room.’

¹⁷Locative object is not allowed to follow the string $V_{\text{gen}} V_{\text{deic}}$ in Mandarin, but it is possible to do so in some dialects of Chinese, such as Min and Cantonese.

If *jin* and *lai* are two verbs, we should expect the whole verb string to require a locative object as well, otherwise the *c*-selectional feature of *jin* will not be satisfied. However, (175-a)-(175-b) shows that this prediction fails. A natural solution is to postulate that the cluster $V_{\text{gen}} V_{\text{deic}}$, namely *jin lai* in the example, is an intransitive compound verb already formed in the lexicon and then enters syntax. Then (175-a)-(175-b) are born out naturally. In other words, a compound view rather than a two-verb view seems to be more convenient to explain the data in (175).

Note that this compound behaviour of the $V_{\text{gen}} V_{\text{deic}}$ cluster is not observed with a verb string composed of a V_{dis} and a directional verb, such as the example *song lai* ‘send come’, which we have seen in Section 2.2. *song* requires an object when it is used alone ((177)), which resembles *jin* when used alone ((174)). However, *song* still requires an object when used in DSVC ((178)), contrasting with the behaviour of the $V_{\text{gen}} V_{\text{deic}}$ cluster *jin lai* ((175)).¹⁸

(177) Ta song le *(tang).
 3sg send ASP soup
 ‘S/He sent the soup.’

(178) Ta song lai le *(tang).
 3sg send come ASP soup
 ‘S/He brought the soup.’

This again shows that the $V_{\text{gen}} V_{\text{deic}}$ cluster has some sort of compound property, differing from a co-event plus direction verb cluster, which is definitely phrasal.

However, the compound status of the verb cluster $V_{\text{gen}} V_{\text{deic}}$ can be questioned as well. Firstly, although an aspect marker can not be inserted between the two verbs, the potential morphemes *de/bu* ‘able/unable’ can be inserted between the two verbs:

¹⁸Some native speakers may accept (177), (178) without the direct object. But this is only true when the direct object has already been mentioned in the context, for example:

(176) - Ta song lai le tang_ima? - Ta song lai le e_i.
 - 3sg send come ASP soup SFP - 3sg send come ASP
 ‘- Did he bring the soup? - Yes, he did.’

So even in the case of object omission, it is reasonable to postulate a null object for *song*.

- (179) Xiaoming jin **de** lai, jin **bu** lai?
 Xiaoming enter can come, enter cannot come
 ‘Can Xiaoming come in or not?’

Secondly, although (175-b) shows that the cluster *jin lai* disallows a locative object to follow the whole verb string, (180) shows that *jin lai* licences a locative object in between the two verbs:

- (180) Ta jin (le) fangjian lai le.
 he enter ASP room come SFP
 ‘He came into the room.’

In other words, although the verb cluster $V_{\text{gen}} V_{\text{deic}}$ does not obligatorily require a locative object, it also does not bar a locative object. The key point is that the position of the locative object should be in between the two verbs. Besides, in (180), we also see that when the locative object occurs, the aspect marker *le* can occur after the first verb *jin*, which is not possible in (175).

Example (179) and (180) pose a threat to the compound hypothesis for the verb cluster $V_{\text{gen}} V_{\text{deic}}$: if it is a compound, how can other syntactic items be inserted in between the composing elements?

Now we have a dilemma in analysing the cluster $V_{\text{gen}} V_{\text{deic}}$. I will come back to the contradicting facts illustrated by the $V_{\text{gen}} V_{\text{deic}}$ cluster and offer a syntactic analysis in Section 4.1.

2.4.2 The Serialising Patterns Beginning with V_m

The serialising patterns beginning with V_m include the following:

- (b) $V_m V_{\text{deic}}$
- (c) $V_m V_{\text{gen}}$
- (d) $V_m V_{\text{gen}} V_{\text{deic}}$

There are two interesting observations concerning these DSVC patterns.

The first observation is about the distribution of a locative object. We have seen in Section 2.4.1 that a locative object can only occur between the V_{gen} and V_{deic} . Then how is the distribution of the locative object in these serialising patterns?

I show in Section 2.4.1 that V_{gen} compulsorily takes a locative object when used alone, the example of which is repeated in (182) ¹⁹.

- (182) Wo jin/chu le *(fangjian).
 I enter/exit ASP room
 ‘I entered/exited the room.’

$V_{\text{deic}s}$ can also take a locative object when they are used alone, as in (183). Specifically, *qu* normally has to take a locative DP while *lai* can drop it, as is shown in (184).

- (183) Xiaoming san tian qian lai/qu le Beijing.
 Xiaoming three day before come/go ASP Beijing
 ‘Xiaoming came/went to Beijing three days ago.’
- (184) Xiaoming san tian qian lai le.
 Xiaoming three day before come ASP
 ‘Xiaoming came three days ago.’

Considering that the direct object of V_{dis} in the DSVCs beginning with a V_{dis} , i.e. patterns (e)-(g), can occur in several positions, then in the DSVCs beginning with a V_{m} , i.e. patterns (b)-(d), can the locative object also appear after different verbs? In other words, do these DSVCs also have word order alternation? The answer is no.

Pattern (b) represents DSVCs composed of an intransitive manner of motion verb and a single deictic directional verb. Mandarin does not like the verb string $V_{\text{m}} V_{\text{deic}}$ to take a locative object, as in (185) although the V_{deic} *lai* itself can take these locative objects when it is used alone (compare (183) with (185)).

- (185) ?Ta fei lai/qu Beijing le.
 he fly come/go Beijing SFP
 ‘He flew hither/thither to Beijing.’

¹⁹With a context where the locative object is addressed, the omission of the locative object is possible. But that would be considered as a case where a null locative object is presented:

- (181) -Ta jin le fangjian ma? -Dui! Ta jin le.
 -3sg enter ASP room SFP -yes! 3sg enter ASP
 ‘Did S/He enter the room? Yes, S/He did.’

To introduce a locative object, native speakers tend to add a V_{gen} before the locative object and V_{deic} is allocated after the locative object. Sometimes, instead of using a V_{gen} listed in Table 2.2, a verb *dao* ‘arrive’ is used before the locative object, as in (187).

(186) Ta **fei jin** Beijing (**lai/qui**) le.
 he fly enter Beijing come/go SFP
 ‘He flew into Beijing.’

(187) Ta **fei dao** Beijing (**lai/qui**) le.
 he fly arrive Beijing come/go SFP
 ‘He flew hither/thither to Beijing.’

Actually *dao* is also considered as one type of V_{gen} s in some works, such as Lamarre (2007), although its semantics does not really entail a direction. What is important here is that Mandarin DSVCs need a non-deictic verb to introduce the locative object.

Pattern (c) represents the DSVCs composed with a V_{m} and a single V_{gen} . In this case, a locative object is compulsory and located after the V_{gen} , as is shown in (188).

(188) Ta **zou jin** le *(fangjian).
 he walk enter ASP room
 ‘He walked into the room.’

Pattern (d) shows the DSVCs composed of a V_{m} , a V_{gen} and a V_{deic} . The locative object should be following the V_{gen} and before the V_{deic} , as in (189), which is actually the same pattern as (186) and (187).

(189) Ta **zou jin** le fangjian **lai**.
 he walk enter ASP room come
 ‘He walked into the room.’

The observation that Mandarin DVSCs prefer a V_{gen} to introduce the locative object can be extended to the discussed patterns (e)-(g) as well, including all the possible word order variants. I show one example below:

- (190) a. ?Xiaoming ba keben **song lai** le wo de fangjian.
 Xiaoming BA textbook send come ASP I POSS room
- b. Xiaoming ba keben **song dao/jin** le wo de
 Xiaoming BA textbook send arrive/enter ASP I POSS
 fangjian (lai).
 room (**come**)
 ‘Xiaoming brought the textbook into the room.’

(190-a) shows a *ba* construction derived from the verb string $V_{\text{dis}} V_{\text{deic}} O$ by preposing the direct object. Directly adding the locative object *wo de fangjian* after the V_{deic} *lai* is slightly odd, compared with (190-b), where the locative object follows a V_{gen} but precedes a V_{deic} .

Besides, we have seen in Section 2.3 that the word order $V_{\text{dis}} O V_{\text{gen}}$ is not possible, but adding a locative object to the V_{gen} can save the sentence, as in (191).

- (191) Xiaoming **song** le tang **jin** *(fangjian).
 Xiaoming send ASP soup enter room
 ‘Xiaoming took the soup into the room.’

To close the discussion on the distribution of the locative object in DSVCs, we come to the generalization that in Mandarin DSVCs, a locative object tends to occur after a V_{gen} but not a V_{deic} . Specifically, if both a V_{gen} and a V_{deic} occur, the locative object follows V_{gen} ²⁰. If only a V_{deic} occurs, adding a locative DP after the V_{deic} causes slight oddity, although it is not entirely impossible. Moreover, when V_{gen} s are at the end of the sentence (e.g. *zou jin* ‘walk enter’, *na shu chu* ‘take book exit’), they compulsorily take a locative object. The syntactic position of the locative object in the DSVCs will be discussed in Sections 4.1 and 4.2.

The second interesting observation about DSVCs beginning with V_{m} is related to the distribution of the aspect marker *le*. Specifically, in the patterns $V_{\text{m}} V_{\text{deic}}$ and $V_{\text{m}} V_{\text{gen}}$, *le* should follow the whole verb string. *le* cannot follow V_{m} .

²⁰Speakers who accept the locative object following V_{deic} are possibly influenced by dialects of Chinese, the data of which will be addressed in Chapter 5.

- (192) Xiaoniao **fei** (*le) **lai** le.
 bird fly ASP come ASP/SFP
 ‘Birds flew hither.’²¹

- (193) Xiaoniao **fei** (*le) **jin** le shulin.
 bird fly ASP enter ASP woods
 ‘Birds flew into the woods.’

However, in the pattern $V_m V_{gen} V_{deic}$, *le* can not only follow the whole string, but also follow V_m . The only inhibited position is between V_{gen} and V_{deic} .

- (194) Xiaoniao **fei** (le) **jin** (*le) **lai** (le).
 bird fly ASP enter (ASP) come ASP/SFP
 ‘Birds flew inside.’

Note that the sentence final *le* in (194) is not merely a SFP as the sentence final *le* in the cases of $V_{dis} O (V_{gen}) V_{deic}$ and $V_{dis} V_{gen} O V_{deic}$ (see discussion in Section 2.2.2.2). Recall that in Section 2.2.2.2, we have seen that the sentence final *le* in the cases of $V_{dis} O (V_{gen}) V_{deic}$ and $V_{dis} V_{gen} O V_{deic}$ can co-occur with the ASP *le* following V_{dis} . Hence, we came to the conclusion that the sentence final *le* should only be a sentence final particle. However, the sentence final *le* in (194) cannot co-occur with the ASP *le* following the co-event verb, i.e the V_m *fei*:

- (195) a. *Xiaoniao **fei** le **jin** **lai** le.
 bird fly ASP enter come LE
 b. Xiaoniao **fei** le **jin** **lai**.
 bird fly ASP enter come
 c. Xiaoniao **fei** **jin** **lai** le.
 bird fly enter come LE

This piece of evidence suggests that we cannot exclude the possibility that the sentence final *le* in this case can be the ASP *le* as well. Therefore, we also consider the sentence final *le* in (194) as a partial ASP *le*.

²¹As I mentioned in Section 2.2.2.2, *le* following a sentence final intransitive verb is a combination of aspect marker and sentence final particle, hence glossed as ASP/SFP, unless we have evidence that this *le* only carries the SFP function.

Combined with the findings about ASP *le*'s distribution in other DSVC patterns addressed in the previous sections, we summarise the results in Table 2.3.

Table 2.3: Distribution of ASP *le* in DSVCs

No.	Word order	Possible position of <i>le</i>
(a)	$V_{\text{gen}} V_{\text{deic}}$	$V_{\text{gen}} V_{\text{deic}} le$
(b)	$V_{\text{m}} V_{\text{deic}}$	$V_{\text{m}} V_{\text{deic}} le$
(c)	$V_{\text{m}} V_{\text{gen}}$	$V_{\text{m}} V_{\text{gen}} le$
(d)	$V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$	$V_{\text{m}} (le) V_{\text{gen}} V_{\text{deic}} (le)^{22}$
(e ₁)	$V_{\text{dis}} V_{\text{deic}} O$	$V_{\text{dis}} V_{\text{deic}} le O$
(e ₂)	$V_{\text{dis}} O V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{deic}}$
(f ₁)	$V_{\text{dis}} V_{\text{gen}} O$	$V_{\text{dis}} V_{\text{gen}} le O$
(f ₂)	$V_{\text{dis}} O V_{\text{gen}} \text{LocO}$	$V_{\text{dis}} le O V_{\text{gen}} \text{LocO}$
(g ₁)	$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$	$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} le O$
(g ₂)	$V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{gen}} V_{\text{deic}}$
(g _{3j})	$V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$	$V_{\text{dis}} V_{\text{gen}} le O V_{\text{deic}}$

The generalization based on Table 2.3 is generally quite neat: when the verbs are not separated by an object, be it a direct object of V_{dis} or a locative object of V_{gen} , *le* cannot be added between the verbs, although there is one exception, pattern (d), in which *le* can be inserted between V_{m} and the directional verb cluster even if there is no object there. I discuss the syntactic position of *le* in Section 3.3.2.2 and account for the distribution of *le* in each serialising pattern through Chapter 4.

2.5 Summary

In this chapter, we first discuss the grammatical status of the directional verb strings in Mandarin Chinese and come to the conclusion that they should not be viewed as compounds as the traditional Chinese linguists did. We also argue against the solution of re-analysing the directional verbs as prepositions. In other words, each verbal morpheme in the directional verb strings is viewed as a verb, hence the terminology *directional serial verb construction* is justified.

Then we investigate all the serialising patterns allowed by the Mandarin DSVCs, repeated below:

²²Note that *le* can occur in either of these two positions but not both.

a. $V_{\text{gen}} + V_{\text{deic}}$

jin lai ‘enter come’

b. $V_{\text{m}} + V_{\text{deic}}$

zou lai ‘walk come’

c. $V_{\text{m}} + V_{\text{gen}}$

zou jin ‘walk enter’

d. $V_{\text{m}} + V_{\text{gen}} + V_{\text{deic}}$

zou jin lai ‘walk enter come’

e. $V_{\text{dis}} + V_{\text{deic}}$

song lai ‘send come’

f. $V_{\text{dis}} + V_{\text{gen}}$

song jin ‘send enter’

g. $V_{\text{dis}} + V_{\text{gen}} + V_{\text{deic}}$

song jin lai ‘send enter come’

The patterns involve three subgroups of data: (1) DSVCs with only directional verbs, i.e. (a); (2) DSVCs starting with an intransitive manner of motion verb, i.e. (b-d); (3) DSVCs starting with a transitive displacement verb, i.e. (e-g).

The first problem we address is about word order alternations. The patterns (e) and (g) are reported to allow word order alternations. Basically, the direct object can appear after each verb in the sequence. So (e) allows two word order variants and (g) allows three, repeated in (196). This phenomenon is very similar to the Multiple Argument Realization introduced in Chapter 1.

(196) Two groups of word order alternations

a. Group 1 (pattern e):

$V_{\text{dis}} V_{\text{deic}} \mathbf{O}$

$V_{\text{dis}} \mathbf{O} V_{\text{deic}}$

b. Group 2 (pattern g):

$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} \mathbf{O}$

$V_{\text{dis}} \mathbf{O} V_{\text{gen}} V_{\text{deic}}$

$V_{\text{dis}} V_{\text{gen}} \mathbf{O} V_{\text{deic}}$

By further examining the variants allowed in (e) and (g), we find that the variants in each group are not equivalents, the evidence of which is from four perspectives: telicity, interaction with *le*, negation, and potential morpheme *de / bu*. The general finding is summarised in (197).

(197) **General findings on the word order variants**

1. VVO type of word order, namely, the word orders in which the direct object does not immediately follow V_{dis} , including $V_{\text{dis}} V_{\text{deic}} O$, $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$, demonstrate similar properties:
 - (a) They have inherent endpoint, hence telic.
 - (b) ASP *le* is located after the directional verb(s). *le* does not change the telicity value of these variants.
 - (c) They are compatible with negation *mei* but not *bu*.
 - (d) They allow the potential morpheme *de/bu* to be inserted between the first verb and the second verb.
2. VOV type of word order, namely, the word orders in which the direct object immediately follows V_{dis} , including $V_{\text{dis}} O V_{\text{deic}}$ and $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$, show similar properties:
 - (a) They have no inherent endpoint, hence atelic.
 - (b) ASP *le* occurs between V_{dis} and the object. *le* converts the telicity value of these variants from atelic to telic.
 - (c) They are compatible with negation *mei* and *bu*.
 - (d) They disallow the potential morpheme *de/bu*.

The second problem we look into is the serialising pattern (f). Although this pattern also starts with a transitive displacement verb, as pattern (e) and (g), it only allows one word order, i.e. the $V_{\text{dis}} V_{\text{gen}} O$ order. The $V_{\text{dis}} O V_{\text{gen}}$ order is only licensed when a locative object is added after the V_{gen} . We find that the $V_{\text{dis}} V_{\text{gen}} O$ order behaves just like the other VVO orders in terms of telicity, position of *le*, compatibility with negation and potential morphemes. We also discuss the metaphoric usage of the V_{gen} s serving as the secondary verb and find that in these cases V_{gen} s have to be adjacent to the action verb. This observation extends to other directional verbs, including V_{deic} s and V_{gen}

V_{deic} clusters. In other words, in order for the directional verbs to express metaphoric meaning, a VVO type of word order should be adopted.

The third question we pursue is about the serialising patterns (a) to (d). We obtain the following findings:

1. Pattern (a) $V_{\text{gen}} V_{\text{deic}}$ demonstrates both word and phrasal characteristics, posing a dilemma to the analysis.
2. The locative object tends to follow V_{gen} rather than V_{deic} . This rule also extends to pattern (e)-(g).
3. The position of *le* in all the serial patterns generally follows the rule that *le* cannot intervene between the verbs unless there is already an object inserted there, be it direct object or locative object. The only exception is the pattern (d) where *le* can be inserted between V_{m} and the directional verb cluster even if there is no object in that position.

All in all, in order to capture the complicated findings we observe in the Mandarin DSVCs system, our theory needs be able to answer the following questions:

1. Why do certain serialising patterns illustrate word order alternations while others do not?
2. How can the syntactic and semantic similarities and divergences among the word order variants be accounted for? Specifically, how can we explain the telicity interpretation of each variant and their interaction with *le*, negation and the potential morpheme?
3. Why can some directional verbs be interpreted metaphorically and why does it only happen in certain positions?
4. Why does the locative object always stays in the same position, i.e. after a V_{gen} ?

In the following chapters, we are going to build up a theory, based on which these questions shall receive an answer.

Chapter 3

Building up the Theory

As we discussed in Chapter 1, this thesis aims to put to the test the neo-constructionist approaches by investigating the Mandarin DSVCs. In Chapter 2, we have identified our empirical questions. Bearing those questions in mind, in this chapter we shall build up our theory to account for those questions step by step. In Section 3.1, I illustrate some previous solutions to deal with the issue of word order alternations and point out their drawbacks which render them insufficient to solve the empirical problems we have seen so far. Section 3.2 introduces Ramchand's (2010) first phrase syntax which is fundamentally a neo-constructionist approach involving verb decomposition. This theory constitutes the basis for our theory. Section 3.3 builds up the main theory of the thesis, including an articulated syntactic structure and a set of rules adopted in the system regarding the lexical item insertion, head movement and telicity calculation. In the meantime, other theories/approaches related to the proposed functional projections are also addressed. Section 3.4 is the summary for the chapter.

3.1 Previous Solutions to the Word Order Alternation Puzzles

In this section, I review three previous solutions to account for the word order alternation phenomenon observed in the Mandarin DSVCs. These solutions manage to represent the word orders in syntax. However, they either totally overlook the divergences between the variants or are inadequate to account for the syntactic and semantic divergences addressed in Chapter 2. From these attempts, we can assess what we are lacking in before we build up our new theory. Sections 3.1.1 and 3.1.2 review Zou’s (1994*a*) and Paul’s (2008) proposals for the syntactic analysis of the different variants. Section 3.1.3 sketches the proposal in Chen (2014, 2015) which intends to take into consideration the telicity difference among the variants.

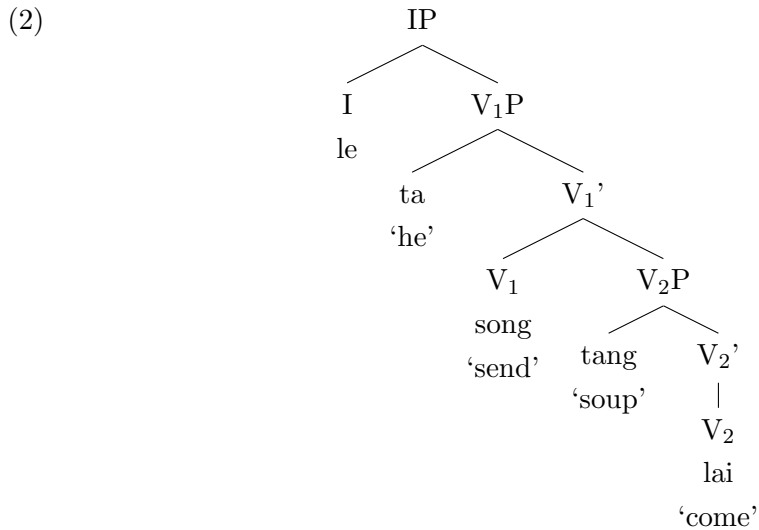
3.1.1 Zou’s Solution

Zou (1994*a*) attempts to capture the multiple word order phenomenon with a lexical-syntactic approach following Chomsky (1986) and Hale and Keyser (1993). Although he still refers to the directional serial verb construction as ‘directional verb compounds’, his analysis actually does not treat the verb strings as compounds. Rather, he suggests that each verb projects its own VP, as is quoted in (1).

- (1) “a. The displacement verb, the general directional verb and the speaker-oriented directional verb project their own independent VPs respectively.
 b. The displacement verb selects a general directional VP or a speaker oriented directional VP as its complement.
 c. The general directional verb selects a speaker oriented directional VP as its complement.”

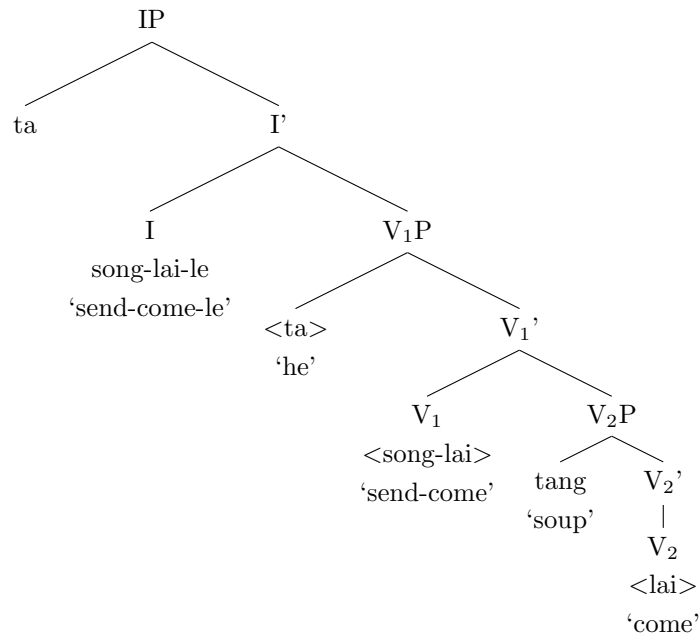
(Zou 1994*a*: 449)

In Zou's proposal, the 'speaker oriented verb' corresponds to the V_{deic} , the 'displacement' verb to the $V_{\text{dis}}/V_{\text{m}}$, and the 'general directional verb' to the V_{gen} in this thesis. According to (1), the three VPs projected by three types of verbs should form a hierarchy (from top to bottom): $V_{\text{dis}}\text{P}-(V_{\text{gen}}\text{P})-V_{\text{deic}}\text{P}$. He accounts for the word order shift phenomenon by assuming one order as the base structure while the other is derived from this base. Specifically, in the serialising pattern $V_{\text{dis}} V_{\text{deic}}$, the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order is the base and the $V_{\text{dis}} V_{\text{deic}} \text{ O}$ order is derived from it. For example, the syntactic representation of the string with the base structure, *song tang lai* 'send soup come', is shown in (2), where the direct object merges as the Spec of the lower V:



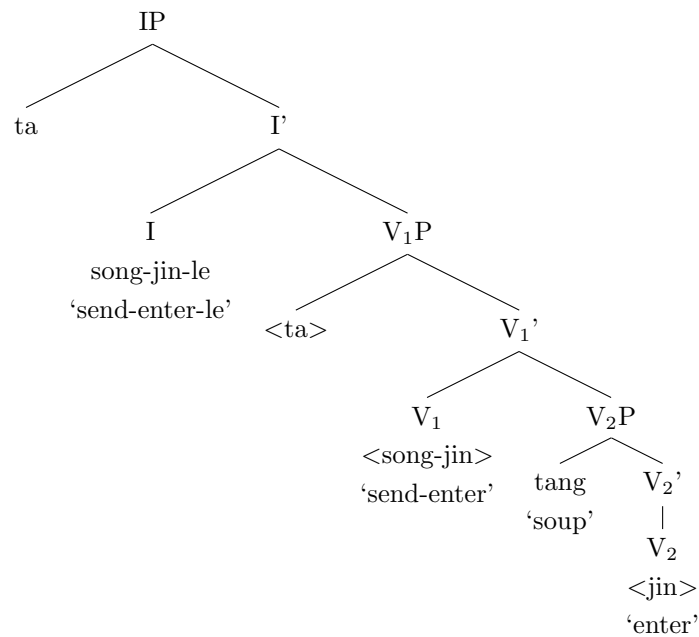
The $V_{\text{dis}} V_{\text{deic}} \text{ O}$ order, namely *song lai tang* 'send come soup' is derived by raising the lower verb *lai* to combine with the displacement verb 'send' by verb incorporation (cf. Baker 1988). The resulting V-V compound *song-lai* is raised again to amalgamate with the aspect marker *le*, which is assumed to merge under I (Zou 1994a: 450). Then the NP *ta* moves to the Spec of IP to receive case from I. The derivation is shown in (3):

(3)

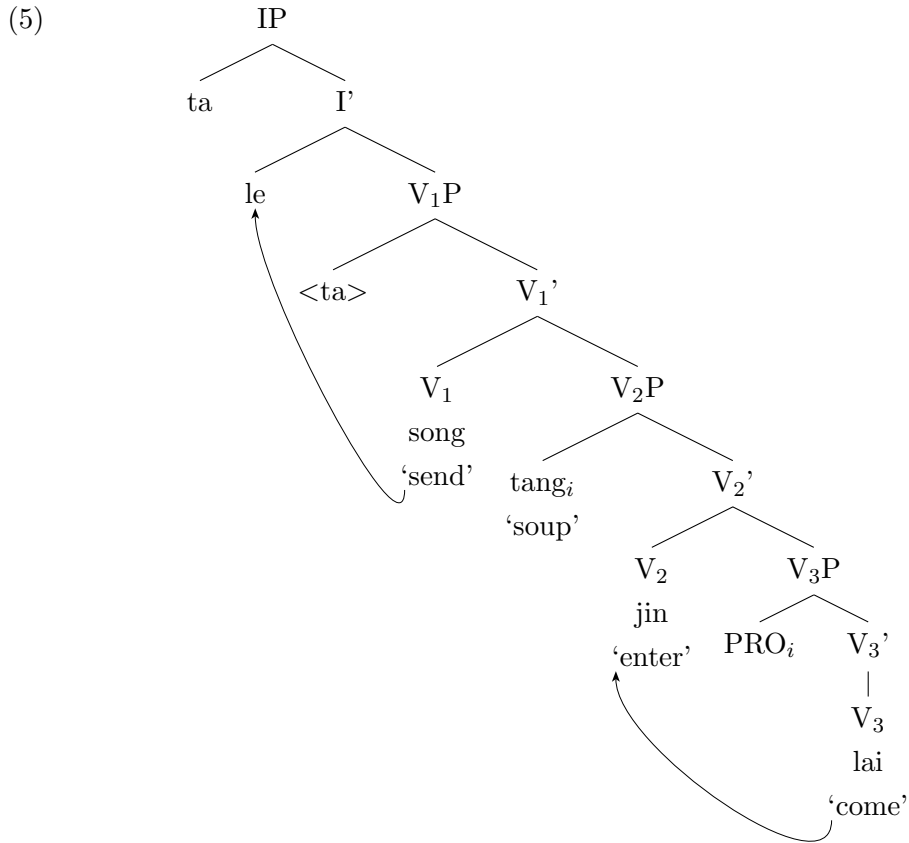


Zou further extended this analysis to the cases where the displacement verb is followed by a single V_{gen} and those where the displacement verb is followed by a V_{gen} and a V_{deic} at the same time. Recall that when the serialising pattern is $V_{\text{dis}} V_{\text{gen}}$, the object always follows the verb string, presenting the VVO order. In Zou's view, this word order is also derived from the underlying VOV order, as is shown in (4):

(4)



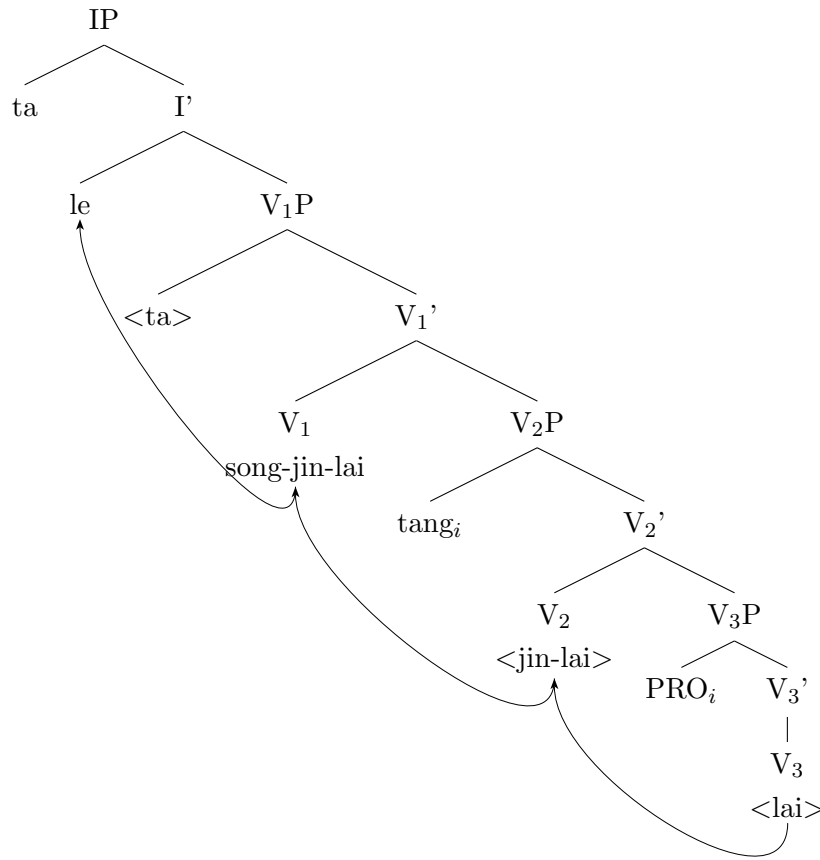
In terms of the serialising pattern $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}}$, where the object can occur after each verb respectively, Zou also derives the VVVO and VVOV orders from the base order VOVV, which itself has the tree representation in (5).



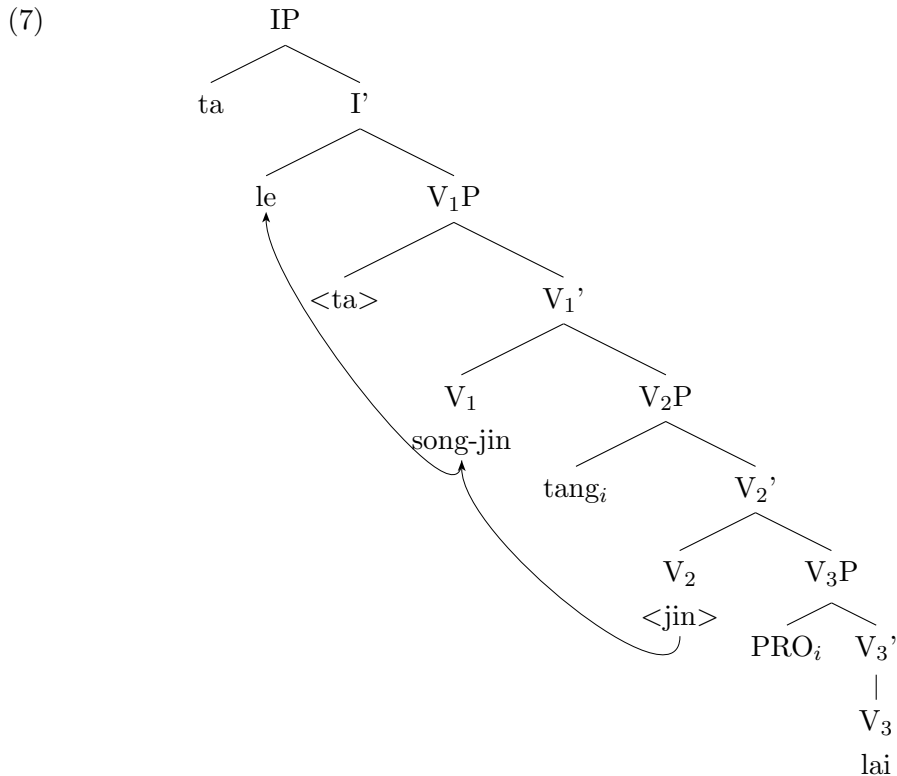
Slightly differing from the VOV base structure, the VOVV basic structure involves a PRO in the Spec of the lowest V, which is bound by the direct object merged in the Spec of the intermediate V.

The VVVO order is derived by first raising the lowest V_{deic} (V_3) to the intermediate V_{gen} (V_2), and then raising the compounded verb cluster $V_{\text{gen}}-V_{\text{deic}}$ to the highest verbal head V_{dis} (V_1), as in (6).

(6)



The VVOV order is derived by directly raising V_{gen} (V_2) to V_{dis} (V_1), leaving the V_{deic} (V_3) in situ, as in (7).



There are several problems arising from Zou's approach.

Firstly, Zou's analysis lacks a convincing trigger for the head movements.

In Zou's system, the movement of the verbal heads can be summarized in the following way: when serialising $V_{dis} V_{deic}$, V_{deic} optionally raises to V_{dis} ; when serialising $V_{dis} V_{gen}$, V_{gen} compulsorily raises to V_{dis} ; when serialising $V_{dis} V_{gen} V_{deic}$, three options are allowed, including (a) raising V_{deic} to V_{gen} without further raising the resulting compound, generating the $V_{dis} O V_{gen} V_{deic}$ variant, (b) raising V_{deic} to V_{gen} and further raising the compound to V_{dis} , generating the $V_{dis} V_{gen} V_{deic} O$ variant, (c) directly raising V_{gen} to V_{dis} , generating the $V_{dis} V_{gen} O V_{deic}$ variant. This looks quite arbitrary and complex. Zou attributes the motivation for such kind of head movement to the lexical difference between the V_{gen} and V_{deic} . He claims that "the general directional verb (V_{gen}) behaves like a bound morpheme which has to be attached to another verbal morpheme" and that "the speaker-oriented directional verb (V_{deic}) behaves like a free morpheme which can stand alone as an independent word" (Zou 1994a: 452). In other words, according to Zou, the core trigger of the verbal heads' movement lies in the fact that the V_{gen} always needs to find another verb to attach to, so V_{gen} either raises itself to V_{dis} , or requires the raising of the lower V_{deic} .

Although this kind of explanation somewhat captures the compulsory head movement of V_{gen} to V_{dis} , or V_{deic} to V_{gen} , it is unclear why the head movement becomes optional when no V_{gen} is involved, or when the V_{gen} is already attached to another verbal head. It seems to suggest that there is no restriction regulating whether the V_{deic} or the head complex $V_{\text{gen}}-V_{\text{deic}}$ should raise or stay in situ. It also seems to suggest that there is no semantic difference between the movement/non-movement options. This is against the spirit of generative grammar that any syntactic operation should have some semantic consequence.

More importantly, his argument to support the bound/free status of general and deictic directional verbs is problematic. Basically, he listed the following paired sentences as evidence that general directional verbs cannot stand alone.

- (8) a. Ta **ban-hui** le yi ba yizi lai.
 he mover-return ASP one CL chair come
 b. *Ta **hui** le yi ba yizi lai.
 he return ASP one CL chair come
- (9) a. Ta ban le yi ba yizi **hui-lai**.
 he move ASP one CL chair return-come
 b. *Ta ban le yi ba yizi **hui**.
 he move ASP one CL chair return

According to Zou, (8-a) and (9-a) are grammatical because the general directional verb *hui* has a verb to attach to. Whereas the ungrammaticality of (8-b)(9-b) is due to the deletion of the verb, which the general directional verbs have to attach to. Hence, Zou asserts that general directional verbs are like bound morphemes.

Zou's argument, however, cannot stand. It is fairly easy to find cases where general directional verbs stand alone without attaching to other verbs. As is mentioned in Chapter 2, the distribution of general directional verbs is not restricted to the position following motion verbs or displacement verbs in serial verb constructions. They can also serve as the main verb in a single verb clause, just like any other verbs. For example:

- (10) Ta **shang** le louti.
 He ascend ASP stairs
 'He went up stairs.'

- (11) Ta **guo** le he.
 Ta cross ASP river.
 ‘He crossed the river.’

Hence, claiming general directional verbs are bound morphemes is against the empirical data. The ungrammaticality of (8-b) and (9-b) should be due to independent reasons: general directional verbs require an object which denotes a location. In (8-b), the object is not a location denoting NP and in (9-b), there is no object for the general directional verb. If we replace the object in (8-b) with a location NP and add a location NP after the V_{gen} in (9-b), we can get two grammatical sentences:

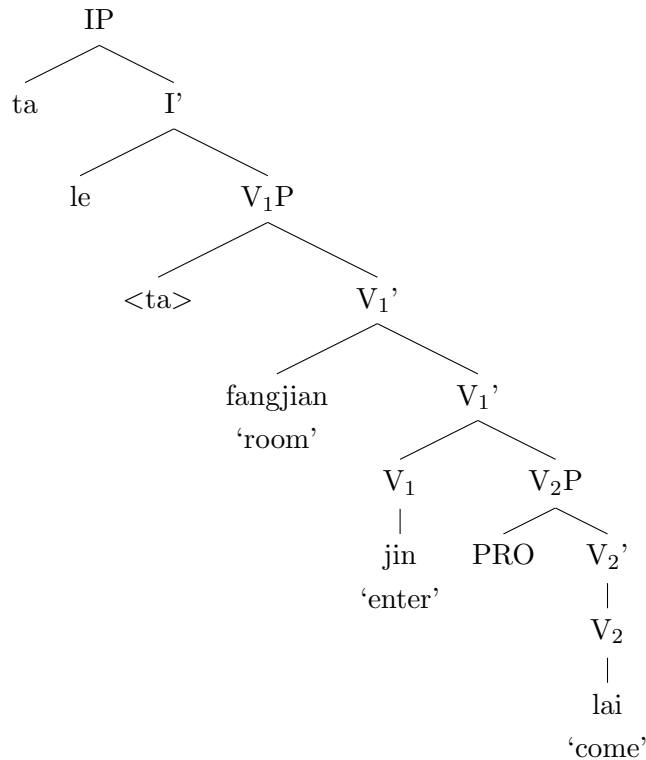
- (12) Ta **hui** le jia lai.
 he return ASP home come
 ‘He returned home.’
- (13) Ta ban le yi ba yizi **hui** jia.
 he move ASP one CL chair return home
 ‘He moved a chair home’

This again shows that the general directional verbs do not need to attach to other verbs, hence they are not bound. If the general directional verbs are not bound morphemes as Zou claimed, then the head movements in Zou’s analysis require a new theoretical explanation.

A second problem Zou’s analysis faces is that it cannot solve the puzzle that when a locative object is added to the verb string, it can only be located between the general directional verb and the deictic verb, as is shown in (14). Zou did not address this problem. But if we follow his reasoning, we should expect a sentence like (14-a) to have the base structure as in (15).

- (14) a. Ta **jin** fangjian **lai** le.
 he enter room come SFP
- b. *Ta **jin lai** fangjian le.
 he enter come room SFP
 ‘He came into the room.’

(15)

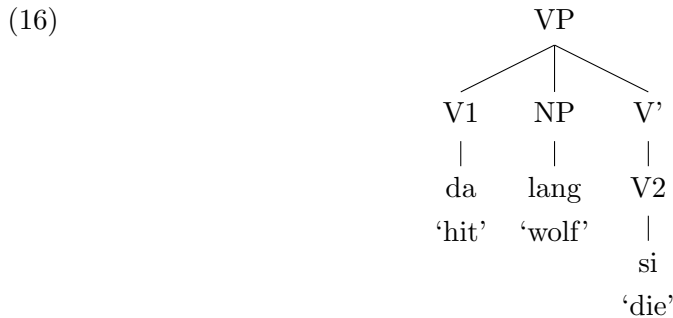


If Zou's argument that V_{gen} needs to attach to another verbal morpheme is right, then we should expect the V_{deic} *lai* to raise to V_{gen} *jin* to satisfy this needs. And then the resulting compound further raises to I. This will result in the ungrammatical order VVLocO in (14-b). Following the argument that a V_{gen} needs to attach to another verbal morpheme, *jin* cannot raise on its own to I. Therefore, it is obvious that Zou's system cannot cover the fact that the locative object is between V_{gen} and V_{deic} .

3.1.2 Paul's Solution

Paul (2004) also discusses the word order issue of the directional serial verb construction in Mandarin in a very similar fashion, but very briefly. She clearly points out that these verbs should be considered as serial verb constructions rather than compounds, a view shared by this thesis. She suggests that the word order alternation between the VOV and the VVO order can be analysed as the consequence of different options of head movement in a stacked VP structure, which is an approach adopted from Collins' analysis on object sharing observed in serial verb constructions in general.

Basically, there are two ways to deal with object sharing in SVCs in the literature. One way, represented by Baker (1989), is to assign a flat structure to the serial verbs. For example, a Chinese RSVC *da-si lang* ‘hit-die wolf’ should be analysed as in (16), before any syntactic movement that derives the surface word order.



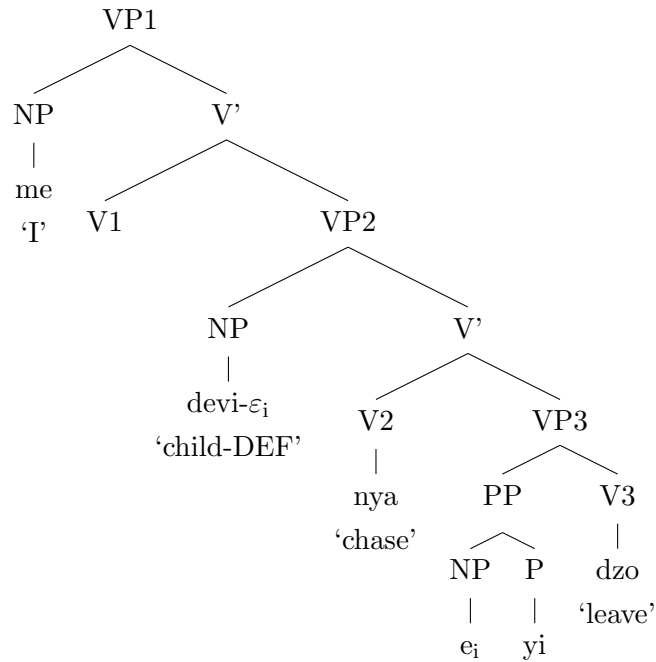
Another view, advocated by Collins (1997), argues, with evidence from Ewe and related languages, that the internal argument sharing is mediated by empty categories in SVCs. Collins shows that, in Ewe, a SVC construction can be followed by a postposition *yi* (glossed as POST), as is shown in (17):

- (17) Me nya devi-ε dzo (yi).
 I chase child-DEF leave POST
 ‘I chased the child away.’

In this example ‘the child’ is the shared argument of ‘chase’ and ‘leave’. The example shows that it is possible for *yi* to appear at the end of the SVC, even though there is no overt NP for *yi* to assign Case to. Hence, Collins assumes that there should be an empty category (ec) mediating the relationship between V2 and the object of V1, as in (18) or the tree diagram in (19).

- (18) Me nya devi-ε_i [VP dzo [ec_i (yi)]]
 I chase child-DEF [VP leave [ec_i (POST)]]

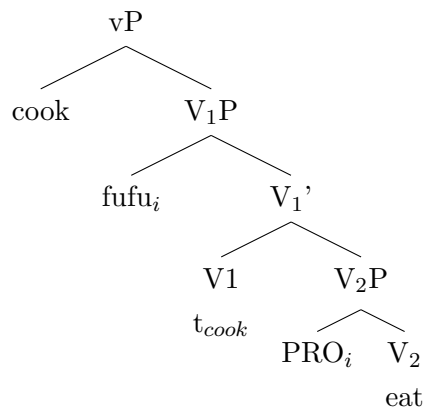
(19)



Similarly, a sentence without a postposition *yi*, such as (20), is represented by the underlying structure in (21), where the two verbs *da* and *du* project their own VPs respectively. The shared object *fufu* is merged at the specifier of the higher VP and binds a PRO in the lower VP.

(20) Wo da fufu du. (Collins 1997: 46)
 3PL cook fufu eat
 'They cooked fufu and ate it.'

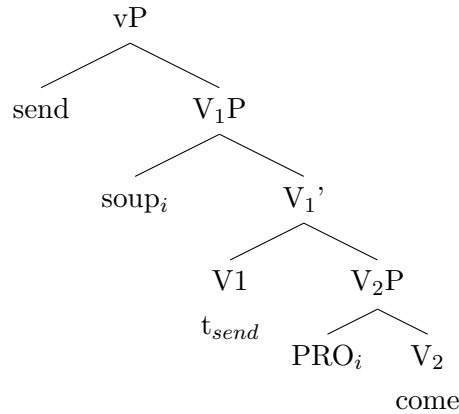
(21)



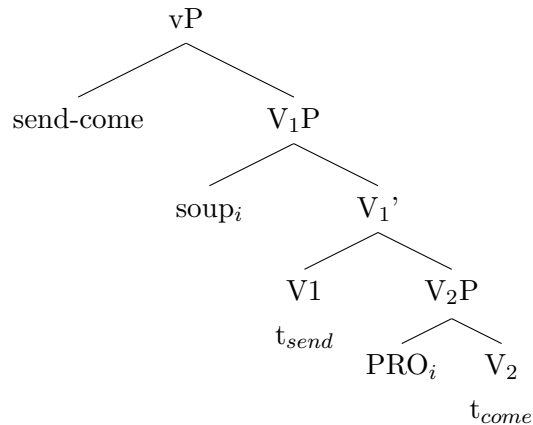
Paul adopts Collins' approach to explain the word order alternations in Mandarin DSVCs. She suggests that the VOV order is the base structure where

only the highest V raises to v. The VVO order is derived by raising the lower V to adjoin to the higher V and then raising the head complex to v. The derivations are shown in (22) and (23) respectively.

(22) representation for the VOV order



(23) representation for the VVO order



Essentially, Paul's analysis is not much different from Zou's approach. They both assume the VOV order as the base, and the VVO order as derived by raising the lower verb head. The trigger and the consequence of the head movement is not addressed in Paul's analysis. In other words, Zou and Paul simply derive the surface word order, a typical transformational approach. They fail to recognize the syntactic and semantic differences between the variants.

3.1.3 Chen's Solution

Chen (2014, 2015) proposes an approach to integrate the telicity difference among the variants and the position of *le*.

The basic idea is that each word order variant has a unique merge structure. Take the first group of variants for example, namely the two word orders $V_{\text{dis}} V_{\text{deic}} O$ and $V_{\text{dis}} O V_{\text{deic}}$.

We have seen in Chapter 2 that the $V_{\text{dis}} V_{\text{deic}} O$ order has the following properties: inherently telic; aspect marker *le* occurs after the second verb; taking negation *mei* rather than *bu*; allowing potential morphemes to mediate between the two verbs. On the other hand, Mandarin resultative structures, namely RSVCs, also present a VVO order with *le* following the second verb.

- (24) Ta **da si** le yi zhi lang.
 he hit die ASP one CL wolf
 'He hit and killed a wolf.'

And RSVCs share the other properties that the $V_{\text{dis}} V_{\text{deic}} O$ order demonstrates.

As a resultative structure, RSVCs are doubtlessly telic. This can be confirmed by an assertion test:

- (25) Ta ganggang da si yi zhi lang, #keshi na lang hai zai dong.
 he just hit die one CL wolf, but that wolf still PROG move
 'He just killed a wolf, #but the wolf is still moving.'

RSVCs reject negation *bu* but accept *mei*:

- (26) Wo *bu/mei da si lang.
 I NEG hit die wolf
 'I did not kill the wolf.'

RSVCs allow potential morphemes *de* / *bu*:

- (27) Wo liqi da, da de si laohu.
 I strength big, hit able die tiger
 'I'm strong. I can kill a tiger.'

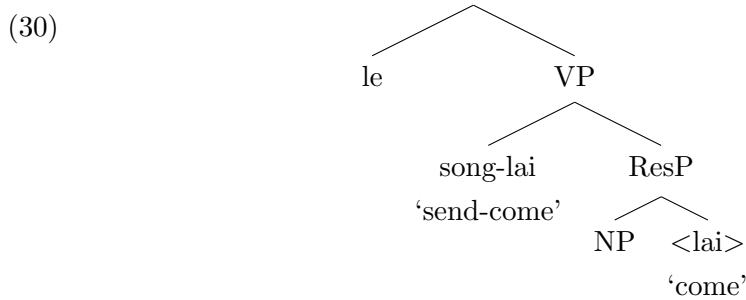
Therefore, it is reasonable to propose that the order $V_{\text{dis}} V_{\text{deic}} O$ and RSVCs share the same merge structure. We temporarily adopt Sybesma's (1999) small clause approach to analyse Chinese RSVCs, more of which will be discussed in Section 3.3.2.1. Sybesma (1999) proposes that the object NP and the resultative predicate form a small clause dominated by the matrix verb, as is shown in (28):



We can relabel the node SC as ResP, signifying resultative phrase. The head of ResP is the resultative predicate which will raise to incorporate with V, forming the surface complex verb. The modified version is shown in (29).

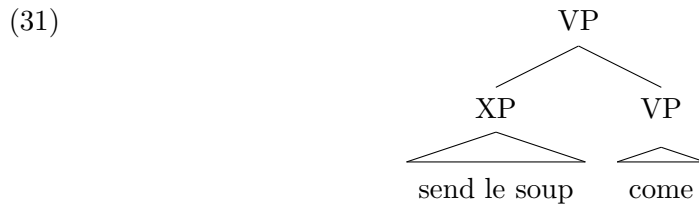


In the case of the $V_{\text{dis}} V_{\text{deic}} O$ order in the first group of word order alternations, the V_{deic} *lai* is merged under Res, and the V_{dis} *song* is merged under V. After *lai* raises to *song*, the surface order is derived, as in (30).



The position of the aspect marker *le* is also predicted. Since the *le* is merged higher in the tree, it will attach to the verb cluster rather than sitting in between them. The interpretation of the representation in (30) would be 'he sent the soup and the result is the soup arrived here', which matches the inherent telic value of this variant.

Now we address the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order. This order has an atelic reading and the aspect *le* is observed to follow the V_{dis} . To capture these characteristics, a tentative solution is to suggest an adjunct structure, in which V_{deic} is the main predicate while the constituent consisting of V_{dis} and the object is an adjunct adjoined to VP. I mark the adjunct as XP for the moment. So the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order can be represented as in (31).



The position of the aspect marker *le* can be explained by merging *le* in the adjunct XP. Moreover, this structure does not involve a result phrase. *lai* serves as the main predicate, which heads VP rather than ResP. The *lai* heading a VP should bear a different feature specification from the *lai* heading a ResP, which is possibly the reason why the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ variant is atelic.

However, treating [$V_{\text{dis}} \text{ O}$] as an adjunct to V_{deic} cannot reflect the fact that the direct object is a shared argument between V_{dis} and V_{deic} . Moreover, this solution makes the DSVCs with the VOV order indistinguishable from another type of serial verb construction in Mandarin, an example of which is shown in (32):

- (32) Ta **na** dao **qie** rou.
 he take knife cut meat
 ‘He cuts meat with a knife.’

[*na dao*] is obviously an adjunct expressing manner to the main verb phrase [*qie rou*].¹ This would mean that the serial verbs in (32) would share the same underlying structure with the DSVCs with the VOV order. Nevertheless, empirical evidence challenges this unified analysis.

¹(32) may have a second interpretation: “He took a knife in order to cut the meat”. We will not discuss this interpretation because it is basically a consecutive or purpose relation between the two phrases, which does not entail the same adjunct underlying structure as we are discussing now.

The most obvious difference between the two types of SVCs is that the DSVCs involve object sharing while the SVC shown in (32) does not. A second difference is pointed out by Law (1996). Law noticed that in SVCs such as (32), adverbs can be inserted before the first verb or between the two verbs:

- (33) a. Ta kuaikuaide na dao qie rou.
 he quickly take knife cut meat
 ‘He quickly cuts meat with a knife.’ (The adverb *kuaikuaide* takes scope over the two VPs.) or ‘He cuts the meat with the knife which he quickly took.’ (The adverb *kuaikuaide* takes scope over the first VP.)
- b. Ta na dao kuaikuaide qie rou.
 he take knife quickly cut meat
 ‘He quickly cut the meat, with the knife.’ (The adverb *kuaikuaide* takes scope over the second VP.)

However, in DSVCs with a VOV order, e.g. *Ta song tang lai* ‘he send soup come’, the adverbs can only be inserted before the first verb:

- (34) a. Ta kuaikuaide song tang lai le.
 he quickly send come soup SFP
- b. *Ta song tang kuaikaide lai le.
 he send soup quickly come SFP
 ‘He quickly brought the soup.’

Note that the adverb *kuaikuaide* can modify the verb *lai* when *lai* is the only verb in the sentence, as in (35). Hence, the star in (34-b) can only be attributed to some structural reason rather than selectional restriction of the verb *lai*.

- (35) Ta kuaikuaide lai le.
 he quickly come ASP/SFP
 ‘He came quickly.’

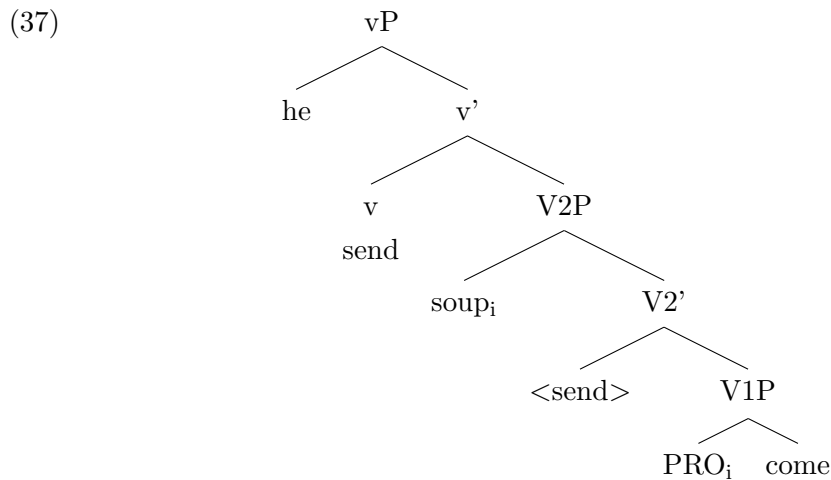
Apart from the syntactic differences, the semantic interpretations of the two types of SVCs also differ. In (32), the second VP carries the main meaning of the sentence, while the first VP only denotes additional information. Hence deleting the first VP does not change the main fact that this event is about cutting meat. On the contrary, in the case of DSVC *ta song tang lai*, deleting the first VP *song tang* (see (36)) will result in a complete change in meaning:

the original sentence denotes a soup-bringing event while (36) denotes an event of the subject's coming.

- (36) Ta lai le.
 he come ASP/SFP
 "He came."

Therefore, the two types of SVCs should not share the same analysis. Empirically, it is more reasonable to assign an adjunct structure to the SVCs such as *na dao qie rou* 'take knife cut meat', which is also suggested by Law. As for the DSVCs with the VOV order, Law applies the three-branch method similar to Baker's approach on SVCs (1989), namely (16), briefly introduced in Section 3.1.1. However, I will not adopt this approach because it goes against the binary hypothesis in the current Minimalist Program.

Instead we can adopt the approach proposed by Collins (1997) and Paul (2004), which builds up a two VP structure, introduced at the end of Section 3.1.1. Applying this idea to the word order $V_{\text{dis}} O V_{\text{deic}}$, the V_{deic} is merged under the head of the lower VP while V_{dis} is merged under the head of the higher one, as in (37).



Summarising the two-merge-structure approach I proposed in Chen (2014, 2015), we associate the $V_{\text{dis}} V_{\text{deic}} O$ variant with a resultative construction and the $V_{\text{dis}} O V_{\text{deic}}$ order with a stacked VP structure. Such an approach gives more flexibility in accounting for the data than the transformational approaches. We do not need to seek for evidence that directional verbs other

than *lai* have two lexical entries in the lexicon, which determines the raising or staying in situ of the directional verb. We simply need to state that the existence of word order variants is a result of inserting the directional verb under different heads, namely V or Res. Inserting them under Res in a resultative construction would cause a telic reading whilst inserting them under the lower V in a stacked VP construction would lead to the atelic reading. The head movement in each construction would be subject to the restrictions on each construction: we can assume that in the resultative construction, Res has to raise to V while in the stacked VP construction, the lower V does not raise.

The two-merge-structure analysis has shortcomings too. If we associate each word order variant to a unique construction, we will end up saying the five word order alternations identified in the literature correspond to five constructions. To account for the other serialising patterns that do not present word order alternations, we may need to postulate more constructions. However, these constructions seem to be isolated. We cannot show the relation between each construction although intuitively they should indeed be related somehow. Moreover, as a theory to account for the human language faculty, a theory with explanatory adequacy should also show how these constructions are licensed by the Universal Grammar.

In Section 3.3 I will propose a more mature theory, sharing the neo-constructionist spirit, which preserves the flexibility of constructionist approaches but also illustrates the relation between the word order variants. But before that, I show in Section 3.2 a neo-constructionist model proposed by Ramchand, upon which our theory is inspired.

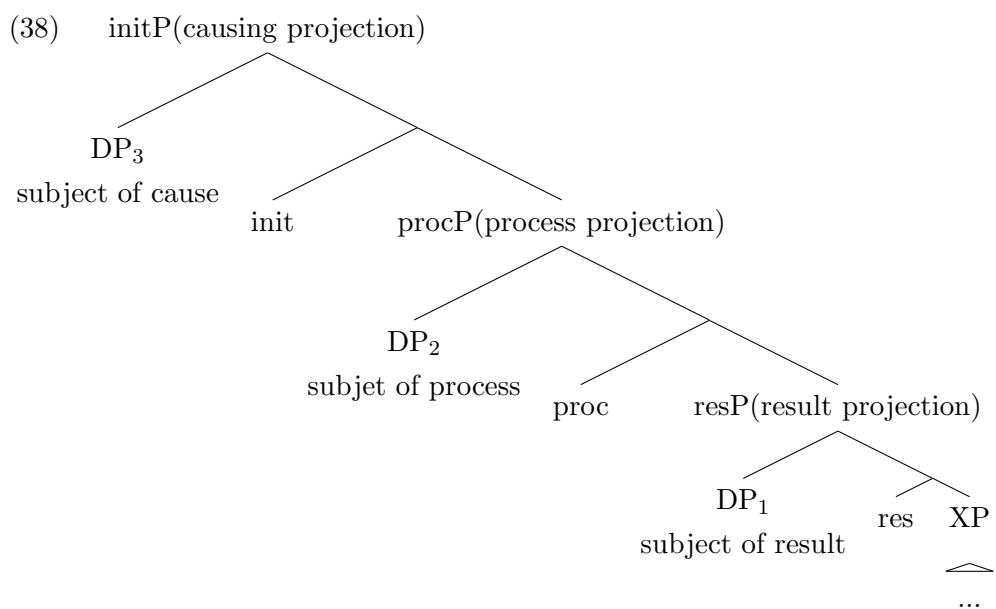
3.2 Ramchand's First Phase Syntax

Ramchand (2010) proposes a intriguing constructionist model, First Phase Syntax, to decompose English verbs, from which my proposal in this thesis draws insight. In this section I introduce the basic ideas of Ramchand's first phase syntax, as the base of our theory.

Ramchand analyses English verbs and maps their argument structure to event structure with a moderate version of the constructionist view. In her system, the lexical items contribute conceptual content to structural aspects of meaning, and are tagged with category labels as a way of constraining that insertion.

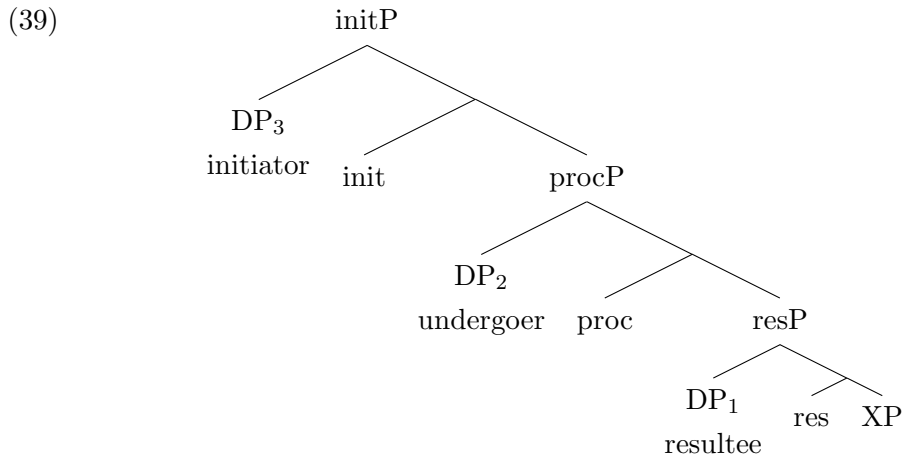
Thus, unlike the radical constructionist position, she does not assume that lexical items are completely free of syntactic information and are always inserted at the ‘bottom’ or ‘root’ of the tree. (Ramchand 2010: 14)

Her general idea is that a traditional categorised verb is represented by several projections in syntax, which are correlated with the semantics of event structures. Basically, there are at most three subevental components into which an English verb can be decomposed: a causing subevent (*initP*), a process-denoting subevent (*procP*) and a subevent corresponding to result state (*resP*). Each of these subevents is represented as its own projection, ordered in the hierarchical embedding relation: *initP* > *procP* > *resP*. The tree representation is shown in (38).



(Ramchand 2010: 39)

She also establishes the primitive semantic role types, which are the participant of the sub-events. The role types include INITIATOR, UNDERGOER, RESULTEE, RHEME and PATH. INITIATOR is “an entity whose properties/behaviour are responsible for the eventuality coming into existence”; UNDERGOER is an “argument that is interpreted as undergoing the change asserted by a dynamic verb”; RESULTEE is the “direct argument related to a result state”. INITIATOR, UNDERGOER and RESULTEE are merged as the specifier of *initP*, *procP* and *resP* respectively. The tree representation with all these three roles is shown in (39):



As she points out, this system is a splitting up of what we normally think of as V, in the same spirit as Rizzi's (1997) splitting up of the C node to show its fine structure, or Pollock's (1989) splitting up of Infl into T and Agr. All the three projections are essentially verbal, and no individual piece actually corresponds to the traditional label V: the notion of verb is always a composite which involves some or all of these elements (Ramchand 2010: 39-40).

This kind of approach shares the intuition of the neo-Davidsonian semantic approaches to event (Parsons 1990, Davidson 1967). Basically neo-Davidsonian approaches postulate a event variable in the logical representation of sentences. Participant roles involve separate relations between that event and each participant. For example, the sentence (40)'s neo-Davidsonian representation is illustrated in (41), where the content of the action verb *stab* is decomposed into parts which do not correspond to the whole word.

(40) Brutus stabbed Caesar in the back with a knife.

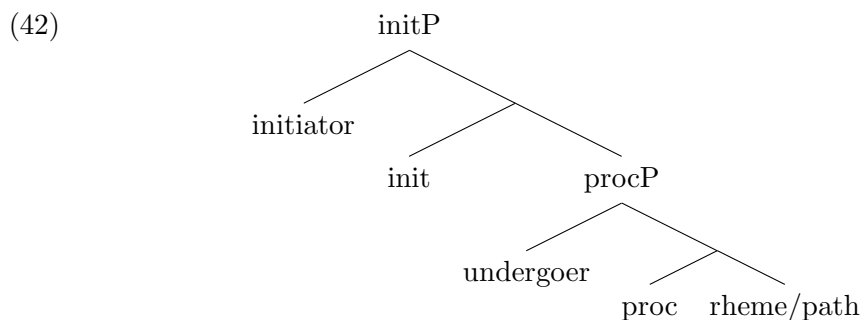
(41) $(\exists e)$ [Stabbing(e) & Subj(e,B) & Obj(e,C) & In(e,b) & With (e,k)]

(41) states that there was an event and the event was a stabbing and Brutus was the subject of the event and Caesar was the object of the event and the event was in the back and the event was with a knife.

In Ramchand's model, *procP* is the heart of the dynamic predicate, since it represents change through time, and it is present in every dynamic verb. In other words, a *procP* is present regardless of whether we are dealing with a process that is extended (i.e. consisting of an indefinite number of transitions)

or the limiting case of representing only single minimal transition such as that found with ‘achievement’ verbs. The *initP* exists when the verb expresses a causal or initiational state that leads to the process. The *resP* only exists when there is a result state explicitly expressed by the lexical predicate. Ramchand specially points out that *resP* does not correlate with semantic/aspectual boundedness. Specifically, the telicity that arises because of the entailments based on the DP structure and the verbal relation do not mean that *resP* exists, i.e. *resP* only exists if the event structure itself is specified as expressing a result state. Conversely, the expression of result can be further modified by auxiliaries, PPs etc. outside the first-phase syntax to create predications that are atelic, but this will not warrant the removal of *resP* in the syntactic representation. (Ramchand 2010: 39-40)

Apart from INITIATOR, UNDERGOER AND RESULTEE, Ramchand also proposes another two roles, RHEMES and PATHS. RHEMES and PATHS “do not describe elements that are referentially individuated and predicated over within an event topology, but those that actually construct the specific predicational property (static or dynamic) that the ‘subject’ is asserted to have” (Ramchand 2010: 46). So they will never occur in the specifier position of an eventive head; they will always occur in the complement position to an eventive head. (42) shows the position of RHEMES and PATHS.



In specific, RHEMES are “objects of stative verbs” and they “further specify or describe the state of affairs.” For example, in ‘Katherine fears nightmares.’, ‘nightmares’ is a RHEME. RHEMES can be PPs and APs as well as DPs. They are not subjects of any subevent, but part of the description of the predicate. PATHS, on the other hand, are objects of the class of verbs where the verbal change is directly mapped on to the material extent of the object. For example, the objects of creation/consumption verbs, such as *the apple* in

(43), or DPs that serve as the internal arguments of verbs of motion, such as *the West Highland Way* in (44), are considered as PATHs.

(43) John ate **the apple**.

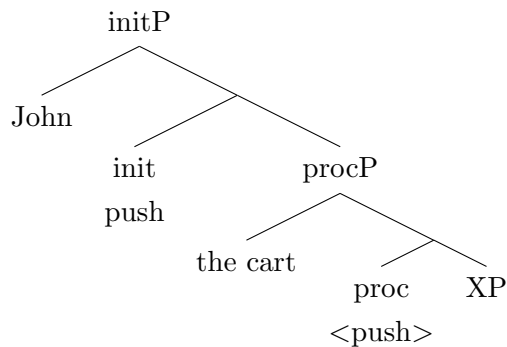
(44) We walked **the West Highland Way**.

Ramchand's PATHs are like a dynamic version of RHEMES, or can be viewed as a subcase of RHEMES. Similar to RHEMES, PATHs are also not subject of any subevent. They also occupy an internal position which helps to describe the subevent that is then predicated of the undergoer. Unlike RHEMES, PATHs actually provided part-whole structure that could give rise to quantization properties on the part of the event.

Ramchand applies this system to analysing different types of verbs in English. Under her view, English verbs can be classified into initiation–process verbs, initiation–process–result verbs and verbs that do not project *initP* at all. I show below a couple of examples of her analysis on different types of verbs.

Initiation–process verb with an undergoer DP object:

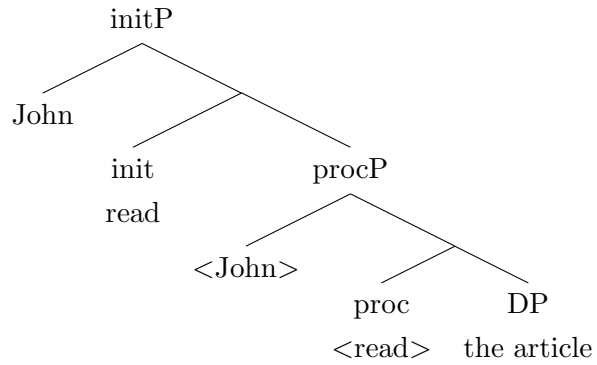
(45) John pushed the cart.



(Ramchand 2010: 65)

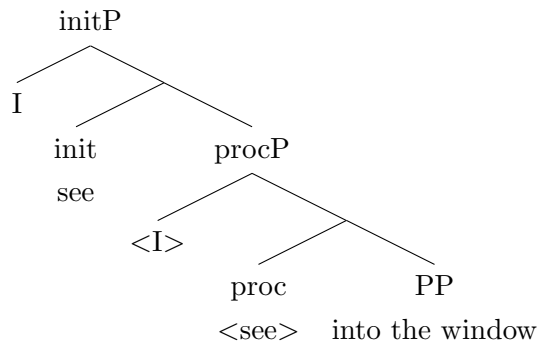
Initiation–process verb with a path DP/PP object:

- (46) John read the article.



(Ramchand 2010: 66)

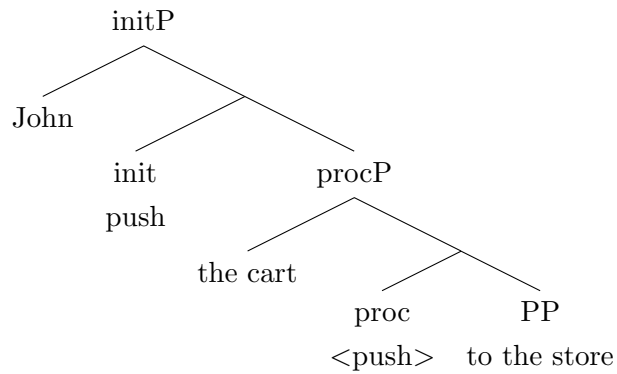
- (47) I saw into the window.



(Ramchand 2010: 67)

Initiation–process verb with an undergoer object and a path object:

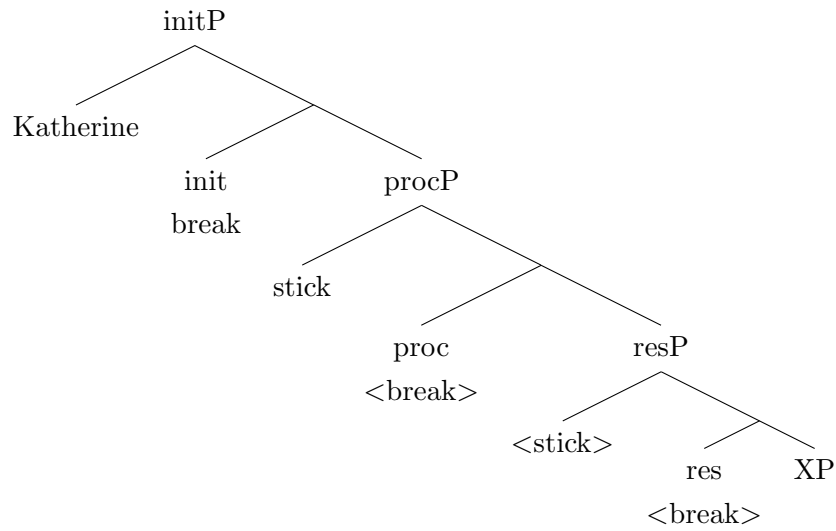
- (48) John pushed the cart to the store.



(Ramchand 2010: 68)

Initiation–process–result verb with an object serving as undergoer and resultee:

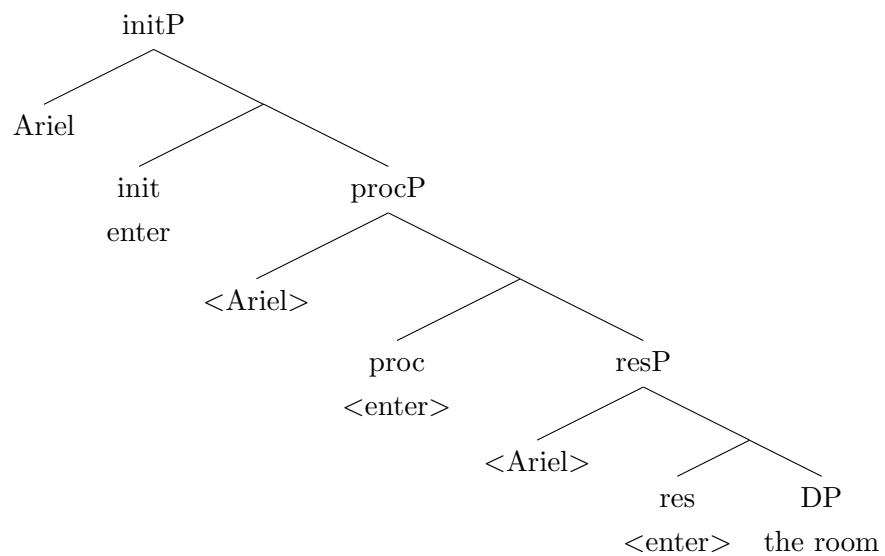
- (49) Katherine broke the stick.



(Ramchand 2010: 75)

Initiation–process–result verbs with a path object:

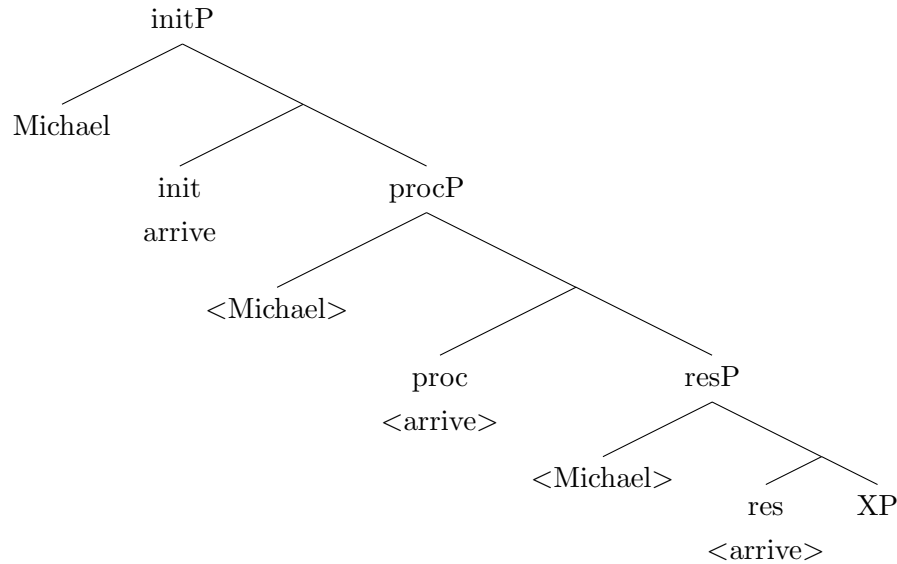
- (50) Ariel entered the room.



(Ramchand 2010: 76)

Initiation–process–result verbs without an object:

(51) Michael arrived.



(Ramchand 2010: 79)

From Ramchand’s examples, we can see that a lexical item can multiply associate to different syntactic heads. This seems to require some equivalent of head movement although head movement does not really claim that the verb is a single item that can project more than one category label. Hence, instead of pursuing a technical head movement approach, Ramchand adopts a Rmerge view in the sense of Starke (2001). As she argued, “if the Merge of two elements is conceived of as set formation, then nothing prevents a particular item from being a member of more than one set. Rmerge simply takes that idea seriously by creating a new association line without going through the redundant step of making a copy” (Ramchand 2010: 59). As for the linearization of the elements that are in more than one position, she assumes that the spell out of an item corresponds to its highest position in the syntactic representation.²

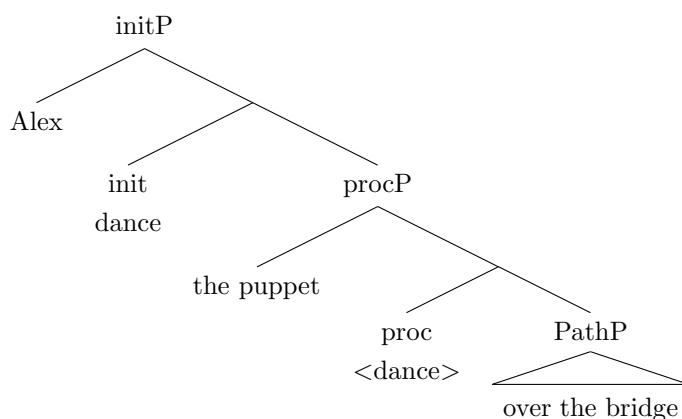
Furthermore, spatial PPs, resultatives and verb-particle constructions are also investigated via the system she proposes.

²Ramchand also points out that for this level of clause, it suffices to postulate such a spell out rule, but for higher levels of the clause, this may need to be complicated.

She entertains the idea that the P head should be decomposed into Path³ and Place, with Path embedding Place. She suggests that PathPs and PlacePs are complements of *proc* and *res* respectively, which are independently licensed by the particular verb.

(52) shows that *dance* only projects *procP* and *initP*, so the PP following *dance* is analysed as a PathP.

(52) Alex danced the puppet over the bridge.



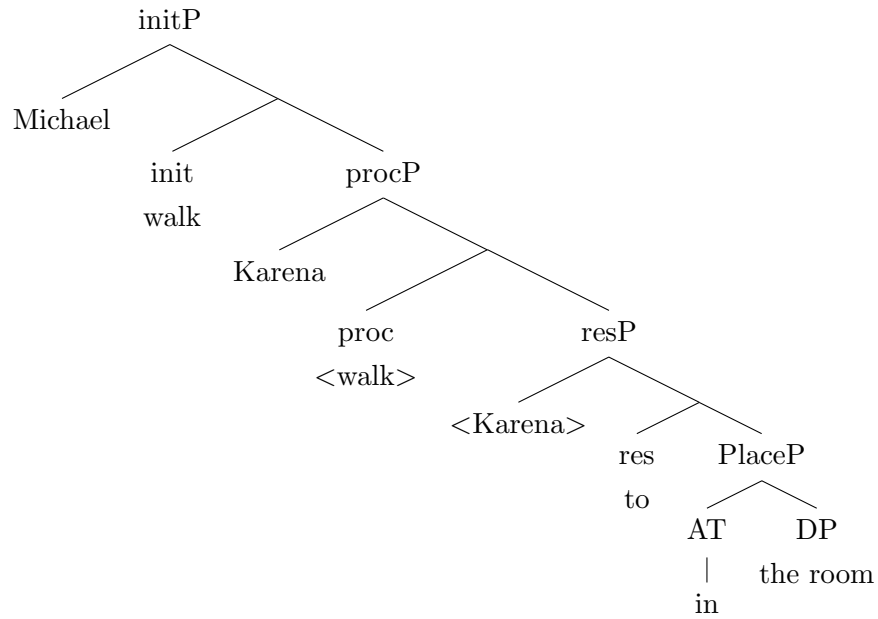
(Ramchand 2010: 116)

(53), however, shows that a *resP* is added to a *init-proc* verb in the form of a *to* preposition. Note that Ramchand does not treat *to* as the head of PathP, differing from most decompositional analysis of PPs in the literature. Instead, she decomposes *to* into two heads, *res* and Place. In the cases of complex preposition, such as *into* in (53), *in* fills the Place head and *to* fills the *res* head. As is shown in the configuration, PlaceP is in the complement position of *res*.⁴

³This 'Path' should be differentiated from the PATH role introduced earlier, which is one of the primitive semantic roles that Ramchand proposes.

⁴More about Ramchand's analysis on PPs is addressed in Section 4.2.1.3.

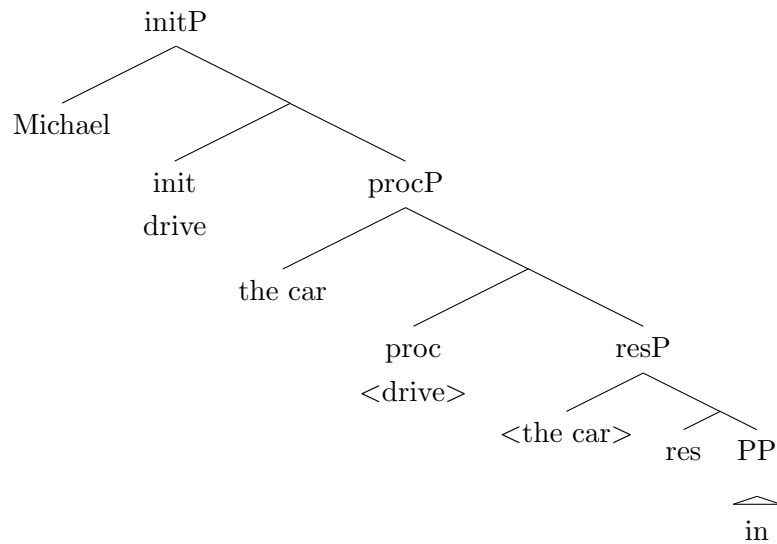
- (53) Michael walked Karena into the room.



(Ramchand 2010: 119)

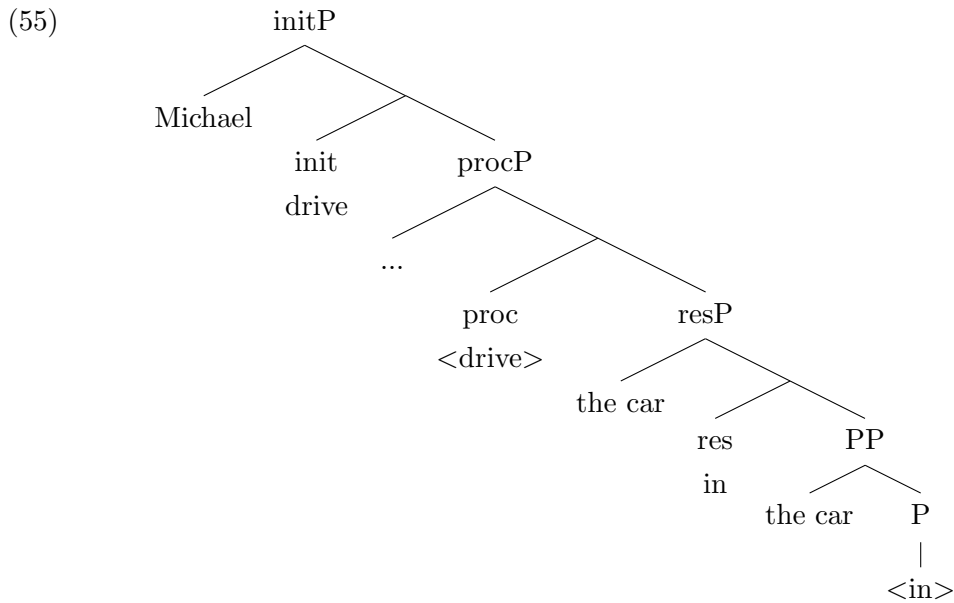
Resultative predicate or particles in the verb-particle constructions are analysed in the complement position of *res*, as is shown in (54).

- (54) Michael drove the car in.



(Ramchand 2010: 127)

She also tackles the particle-shift phenomenon shown in the verb-particle constructions. She assumes that particles are simply P elements which do not have explicit complements, and that particles themselves can identify the res head in the structure. Hence, the particle moves obligatorily to res, as is shown in (55). The word-order variation results from whether the DP object is spelled out in its lowest or its highest predicational position. (Ramchand 2010: 131-132)



All in all, Ramchand's model works nicely with the English data. However, languages are apparently different. We cannot expect this model to fit in the Mandarin verbs as well as it does with the English ones. Next I will propose a new model, which is initially enlightened by Ramchand's first phrase syntax, and which can also solve our empirical problems identified in Chapter 2.

3.3 A Neo-constructionist Approach to the Mandarin DSVCs

In this section, I propose the main theory for the thesis, which shares Ramchand's idea of event decomposition, and follows the general spirit of neo-constructionist approaches, namely, reducing the properties attributed to lexical items and deriving the meaning from the meaning of the roots combined with the meaning encoded in the elaborated syntactic structure. In Sec-

tion 3.3.1 I introduce the main assumptions of the theory, including a hierarchical structure containing several functional projections, and a set of rules regarding lexical item insertion and head movement. I then discuss the functional projections in Section 3.3.2, introducing the theoretical background and motivation of these postulations.

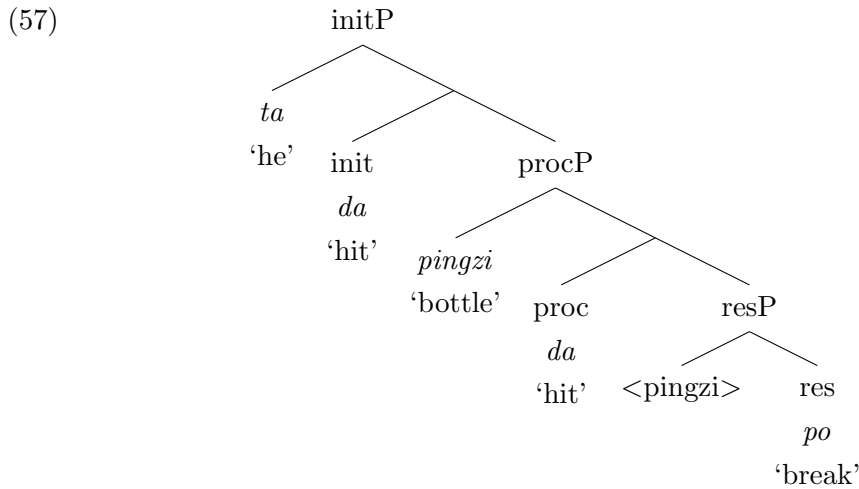
3.3.1 The Proposal

3.3.1.1 Preliminary Structure

In Section 3.2, I reviewed Ramchand's system which decomposes the traditionally categorised verbs into a maximum of three projections, corresponding to three sub-events. Among all the projections, the procP is the core, which should always be projected while the initP and resP are optional. If we directly apply this system to Mandarin Chinese, an activity verb such as *chi* 'eat' should be analysed as a structure in which only initP and procP are projected. But how about telic verbs, such as accomplishments? It is generally accepted that Mandarin has no monomorphemic accomplishments. And many accomplishment verbs or achievement verbs in English are realised in the form of resultative verb compounds or resultative serial verbs. For example, the counterpart of the English achievement verb 'break' is equivalent to the serial verbs *da po* 'hit broken', in which the first verb can also be replaced by other action verbs that describe the cause event, such as *shuai* or *za* 'smash', or a dummy verb with little concrete meaning such as *nong* or *gao*⁵. To fit such examples into Ramchand's system, I propose that in the case of directional serial verbs, the action verb *da/shuai/za/nong/gao* heads the initP and procP while the resultative *po* projects resP. If we follow Ramchand's hierarchy of projections, the tree diagram for (56), which contains the RSVC *da po* 'hit broken' (break), can be represented in (57).

- (56) Ta da po le pingzi.
 3sg hit break ASP bottle
 'He broke the bottle.'

⁵The meaning of the dummy verb is similar to 'do'.



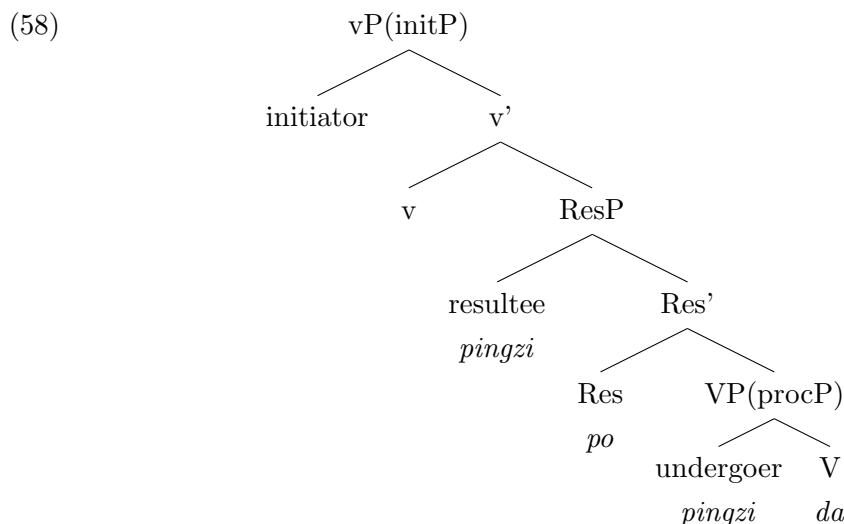
In other words, the event denoted by the resultative serial verbs *da po* is decomposed into three sub-events. The members in the verb sequence are distributed to the sub-entential heads. Specifically, 'hit' is the predicate of the initiation and process sub-events, hence it heads *initP* and *procP* while 'break' is the predicate of the result sub-event, hence it heads *resP*. The DP 'he' is inserted as the spec of *initP*, so it is interpreted as the agent/causer of the event; 'bottle', in the spec of *procP*, is interpreted as the undergoer of the action 'hit'; Likewise, 'bottle' is also in the spec of *resP*, so it is also interpreted as the resultee that holds the result state 'broken'.

Similarly, the main data of this thesis, namely, the directional serial verbs, can also be analysed in a similar fashion: the verb components in a DSVC are distributed under different projections, representing different sub-events.

However, we have seen that our DSVCs data demonstrates complicated word order alternations and a series of syntactic and semantic characteristics. (57) is not sufficient to account for these puzzles. Even for the analysis of RSVCs such as *da po*, an additional assumption of head movement needs to be added to (57) to derive the correct surface word order. In order to better capture the Mandarin DSVC data, I propose below a modified theory based on Ramchand's first phase syntax.

Preliminarily, I keep the assumption of event decomposition. Namely, in syntax there are three projections for the three sub-events. I label them as *vP*, *VP* and *ResP*, corresponding to *initP*, *ProcP* and *resP* in Ramchand's system respectively. I also propose that *ResP* is higher than *VP* (*procP*) in Mandarin, which differs from English where *ResP* is in the complement position of *procP*.

The tree representation of the sub-evental projections in Mandarin is shown in (58).

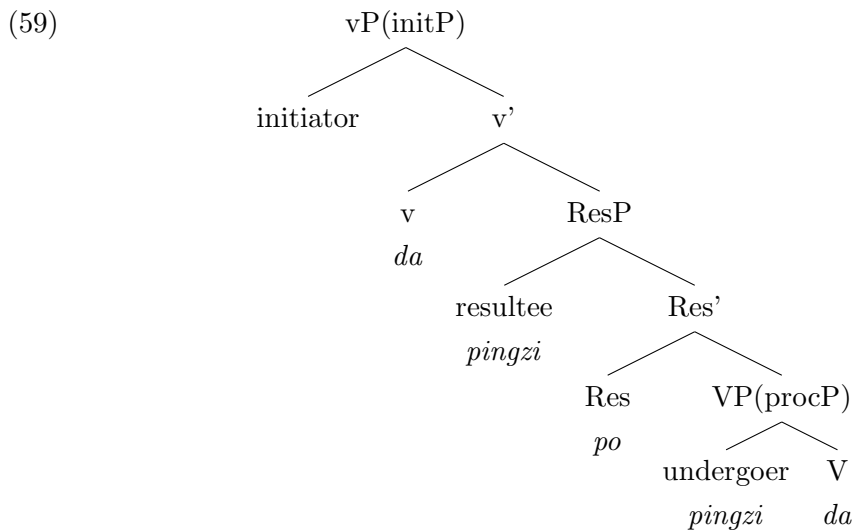


Obviously, we can not adopt Ramchand's solution for the linearization of the heads, which assumes that the spell out of an item, which is in more than one position, corresponds to its highest position. In the case of Mandarin serial verbs, for example, (58), the Res and V heads are not occupied by the same item, so we need to spell out both of them. The most handy approach to solve this problem is to assume a head movement that involves head incorporation. Basically, V moves to Res. And then the adjoined head cluster moves further up to the higher heads.

One modification in the architecture is that my result sub-event projection ResP is above the process sub-event projection. In comparison, it is the other way round in Ramchand's system. I address the benefit and consequence of this postulation in Section 3.3.1.4 when we discuss the features driving head movement in our system.

Another theoretical modification is in the projection for the initiation sub-event, i.e. vP in my system. The vP here, on the one hand shares the spirit of the initP in Ramchands sense, namely, it denotes the initiation sub-event. On the other hand, the vP also resembles the vP in the VP shell hypothesis in that the lower V head eventually moves to v, although in my system the movement involves incorporation of the heads between VP and vP. This is why I use the label VP and vP instead of directly adopting Ramchand's procP and initP.

Ramchand allows the verb to remerge under *init*. However, I do not suggest this happens in my system. Namely, the DSVCs do not insert a verb under *v*. Because if that is the case, we would expect the first verb in an RSVC to be inserted under *v*. For example, in *da po*, it is *da* other than *po* that denotes the initiation sub-event, so *da* should be under *init* (*v*), which leads to a tree diagram in (59).

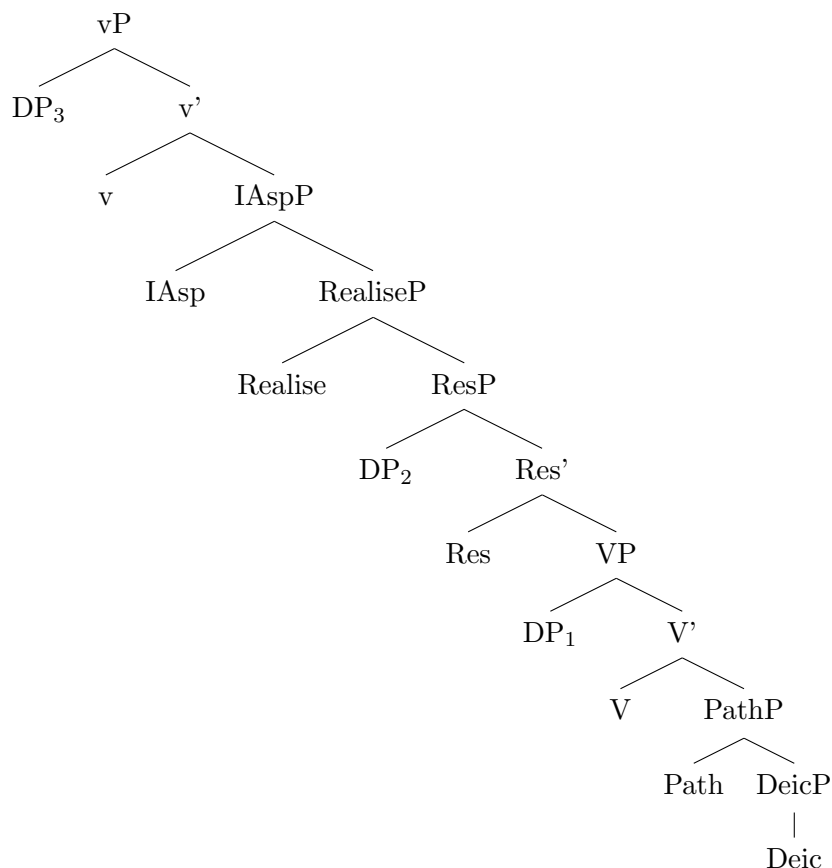


With (59) no matter if we adopt Ramchand's spell-out rules or the head movement approach, we will derive *da-po-da*, which is not the surface word order *da po*. Therefore, in my system, the DSVC does not insert an element under *v*(*init*). Instead, I propose that it is through the head movement and incorporation (*V* to *Res* and *V-Res* to *v*) that the initiation sub-event is integrated with the process and result sub-events.

Apart from the three sub-evental projections, I also propose a *PathP*, standing for Path Phrase, and a *DeicP*, for Deictic Phrase. They are meant to accommodate the directional verbs in DSVCs as well. I assume for now that *PathP* is selected by *V* and *DeicP* is selected by *Path*. Their function is to describe a directed moving track. Besides, between *vP* and *ResP*, I propose a *RealiseP* which is headed by the aspect marker *le*, the argument for which is addressed in Section 3.3.2.2, and an *IAspP* where telicity is calculated. The general idea about the telicity calculation is that *IAsp* bears a [*Tel:*] feature which can be valued by *Res*, *Path* and *Realise*. We will expand this idea in Section 3.3.2.4.

All these projections form a hierarchy as such: IAspP-RealiseP-ResP-VP-PathP-DeicP, which gives us a preliminary structure in (60).

(60) Proposal (preliminary)

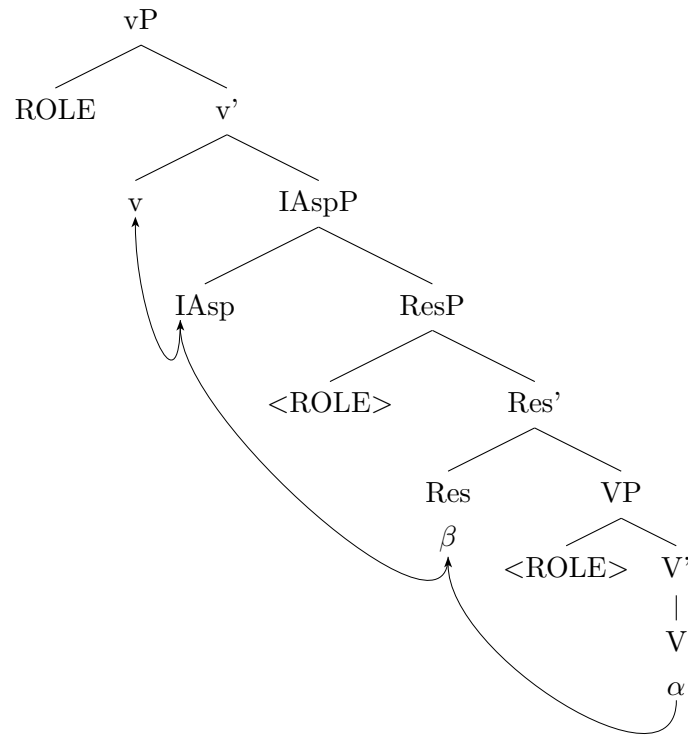


The specifiers of the three sub-evental projections (VP, ResP and vP) are the event participant roles in Ramchand's sense. Specifically, the DP in the Spec of vP is the initiator; the DP in the Spec of VP is the undergoer; the DP in the Spec of ResP is the resultee. Similar to Ramchand's analysis for English verbs, in Mandarin, one single DP can also serve as more than one roles, just as (58) shows, *pingzi* serves as undergoer and resultee. This explains the argument sharing reading yielded by the verb sequence *da po*. Of course, an alternative solution to capture the argument sharing reading is to postulate a PRO, as is suggested by Paul (2004), reviewed in Section 3.1.2. However, since Ramchand's proposal of event participant roles is sufficient to account for this reading, postulating a PRO is not particularly necessary in this system. Note that, there is no event participant role in the spec of PathP and DeicP. These

projections are similar in essence to the RHEMES/PATHs in Ramchand's theory, which are meant to describe the sub-event which is then predicated of an event participant role. For example, in (60), PathP describes a directed moving track of the process sub-event, which is predicated of the undergoer DP_1 .

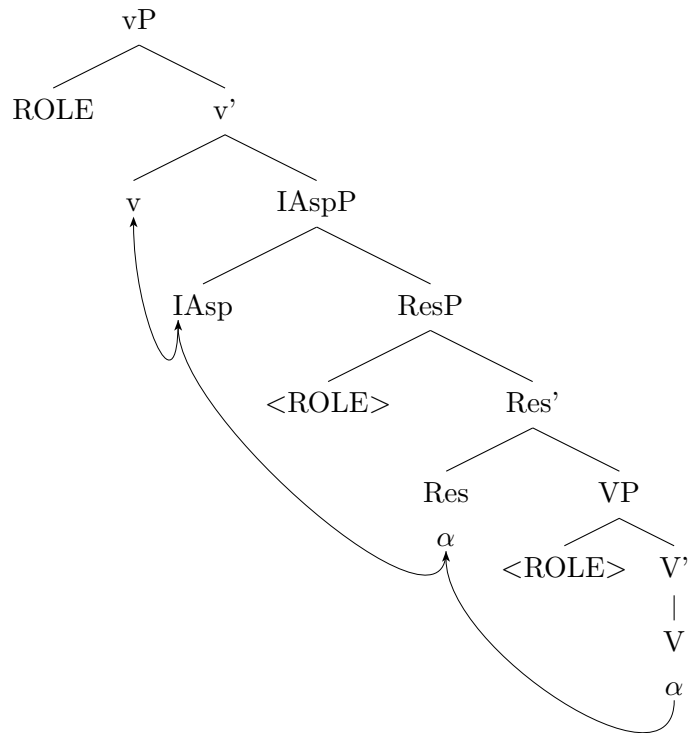
As for the linearization of the items that span over the heads in the structure, I partially adopt Ramchand's view that when the same item spans over several projections, only the one at the highest position is pronounced. However, I adopt this solution only for the event participant roles. For example, if the specifiers of VP, ResP and vP are the same item, only the specifier of vP is pronounced. In this thesis I use '< >' to denote the unpronounced event role DPs. However, as I just mentioned, we still postulate head movement in our theory. The basic idea is that V moves up to the heads above it, including Res, Realise, IAsp and v, incorporating these functional heads on its way, but Path does not move to V. More about the head movement is addressed in Section 3.3.2.5. To differentiate movement from unpronounced event role DPs, I use arrows to mark head movement. For instance, suppose we have a verb sequence $\alpha\text{-}\beta$. α is inserted under V and β is under Res, and the event roles of the three projections are the same, noted as ROLE. Then the tree representation of the verb sequence $\alpha\text{-}\beta$ would look like (61), in which only the highest ROLE is pronounced, and the head complex is spelt out as $\alpha\text{-}\beta$ after head movement.

(61)



Note that, when the sentence does not involve serial verbs, namely when there is only a single verb predicate (e.g. achievement verb, such as *jin* ‘enter’), this single verb can be decomposed into Res and V in the similar fashion of decomposing an English verb. The tree representation for this case is illustrated in (62). The head complex is spelt out as α after the head movement.

(62)

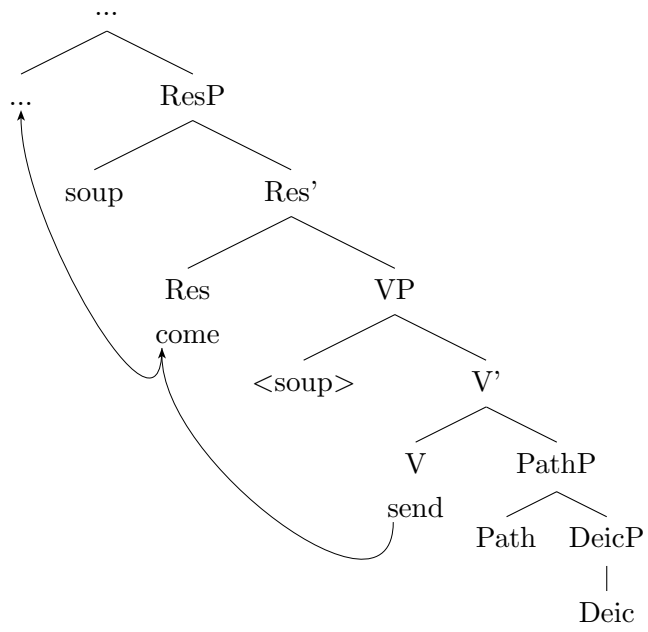


3.3.1.2 Modification in PathP and DeicP

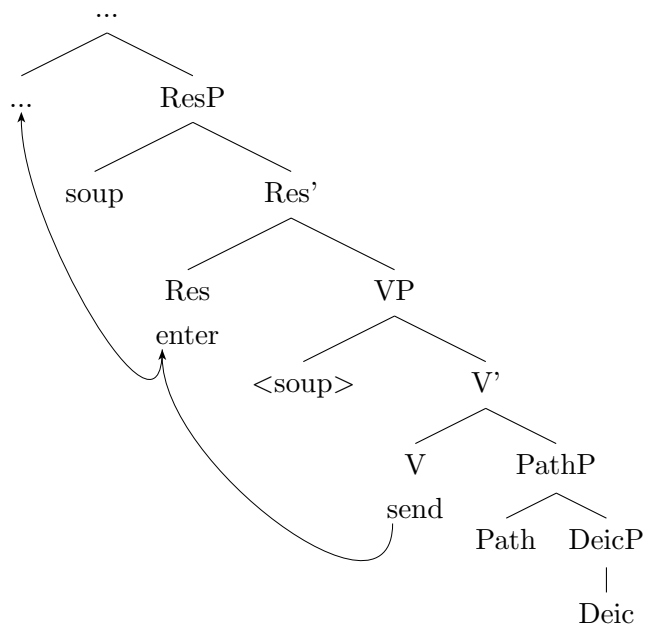
With the preliminary proposal demonstrated in (60), it seems we already can derive the word order alternations by inserting the directional verb(s) under different functional heads. The mechanism behind the lexical item insertion is addressed in Section 3.3.1.3. The basic idea is that V_{genS} can be under Res or Path while V_{deicS} can be under Res or Deic. Specifically, in the VVO type of variants, $V_{\text{genS}}/V_{\text{deicS}}$ are under Res while in the VOV type of variants, V_{genS} and V_{deicS} are under Path and Deic respectively. For example, (63) (64) illustrate the derivation of the VVO orders ‘send-come-soup’ and ‘send-enter-soup’. (65) (66) illustrate how the VOV orders ‘send-soup-come’ and ‘send soup enter come’ are derived based on our preliminary proposal.⁶

⁶The VVO order involving $V_{\text{gen}}-V_{\text{deic}}$ cluster such as *song jin lai tang* ‘send enter come soup’ remains a puzzle so far. We look at it in Section 4.1, where the solution to deal with $V_{\text{gen}} V_{\text{deic}}$ clusters is discussed. The analysis for the VOV order involving such a cluster, represented in (66) here, will be modified as well.

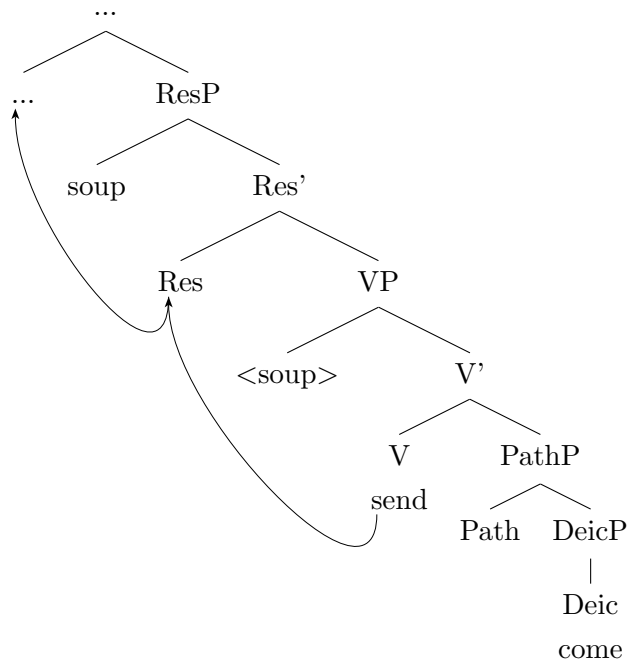
(63)



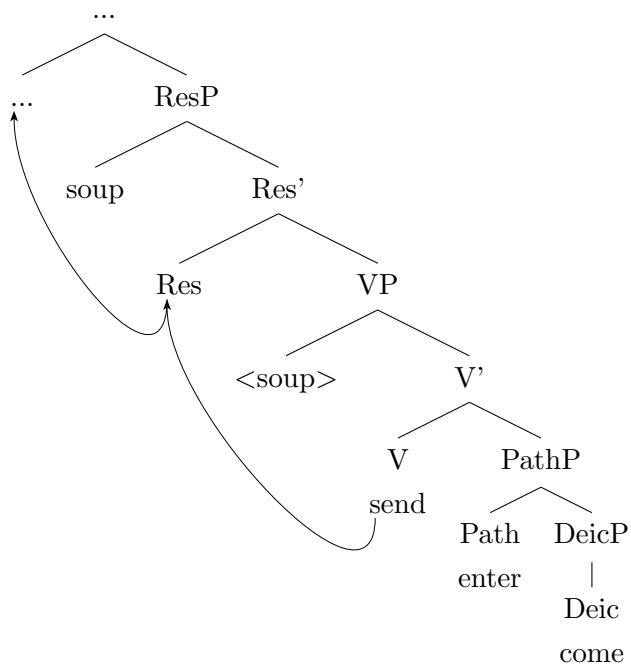
(64)



(65)



(66)

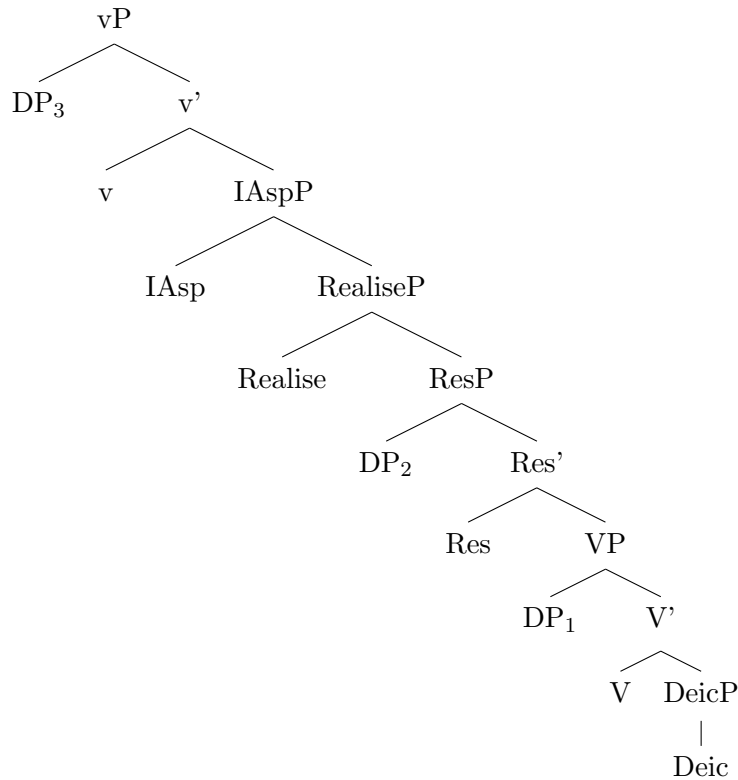


Nevertheless, there is a hole in the preliminary proposal: the co-occurrence of ResP and PathP. If ResP and PathP can co-occur, we should expect to find some examples with both Res and Path filled. However, this is not the case. As is shown in (67), (67-a) and (67-b) show that a displacement verb can be followed by a resultative predicate or a general directional verb respectively, but it cannot take both of them as shown in (67-c).

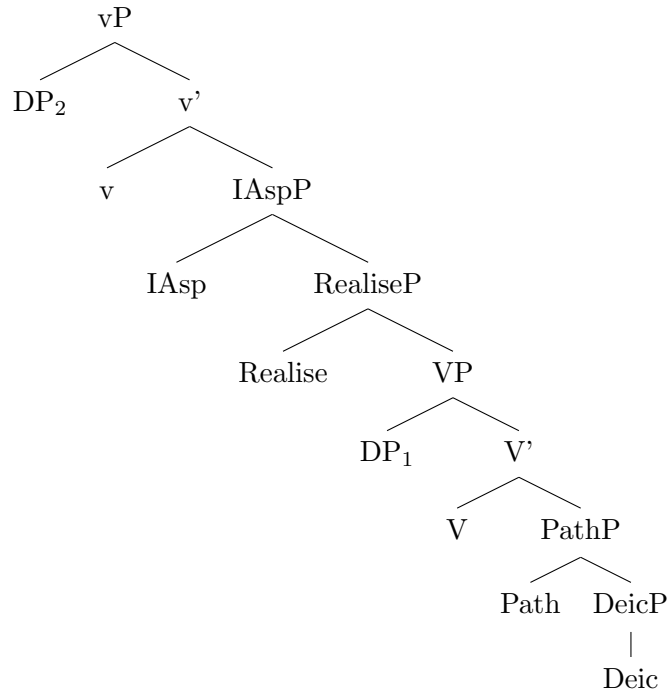
- (67) a. Xiaoming **ji** **diu** le yi feng xin.
 Xiaoming post lost ASP one CL letter
 ‘Xiaoming post a letter but it got lost.’
- b. Xiaoming **ji** le yi feng xin **chu qu**.
 Xiaoming post ASP one CL letter exit go
 ‘Xiaoming post here a letter.’
- c. *Xiaoming **ji** **diu** le yi feng xin **chu qu**.
 Xiaoming post lost ASP one CL letter exit go

If syntax can indeed generate ResP and PathP at the same time, we should expect to see such kind of examples. Lacking of such data suggests that ResP does not co-occur with PathP. In other words, when ResP is projected, PathP is not projected and vice versa. This means the preliminary proposal (60) should be divided into two constructions, one with ResP only (as in (68)), referred to as Res structure, and the other with PathP only, referred to as Path structure (as in (69)).

- (68) Proposal (revised): Res structure



(69) Proposal (revised): Path structure



Another hole lies in the position and status of DeicP, which is treated as the complement of PathP in the preliminary proposal. Sentences such as (70) seems to suggest that resultative predicates also crash with DeicP, just as (67) suggesting that PathP crashes with ResP.

(70) *Xiaoming **ji diu** le yi feng xin **qu**.
 Xiaoming post lost ASP one CL letter go
 'Xiaoming posted a letter, but it got lost.'

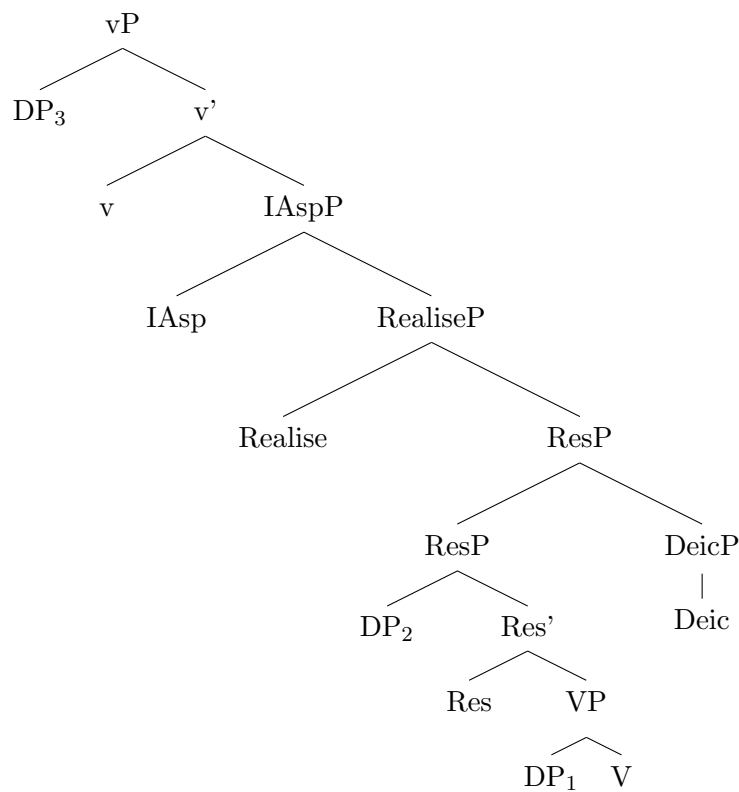
It is therefore tempting to assume that ResP cannot co-occur with DeicP too. However, we would have a problem with the case of the split order in (71), which shows the situation where ResP and DeicP can co-occur.

(71) Xiaoming **ji chu** le yi feng xin **qu**.
 Xiaoming post exit ASP one CL letter go
 'Xiaoming posted a letter.'

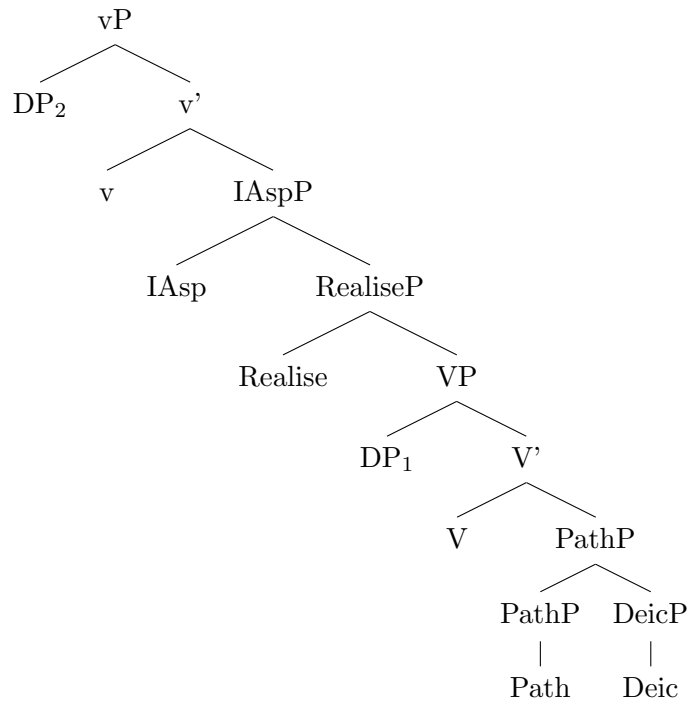
If we do not allow ResP and DeicP to co-occur, (71) would be hard to account for: we can insert the V_{dis} *ji* under V, and the V_{gen} *chu* under Res, but the V_{deic} *qu* will have nowhere to be inserted.

In short, we do want the ResP and DeicP to be able to project at the same time, but we also want to cover the fact that DeicP cannot co-occur with the resultative predicates that are not served by V_{genS} , as in (70). To achieve that, I again modify the model in that DeicP is not merged in a complement position, but rather as an adjunct of the ResP or PathP headed by a general directional verb. In other words, the initial proposal is further revised into two possibilities shown in (72) and (73).

(72) Proposal (final): Res structure

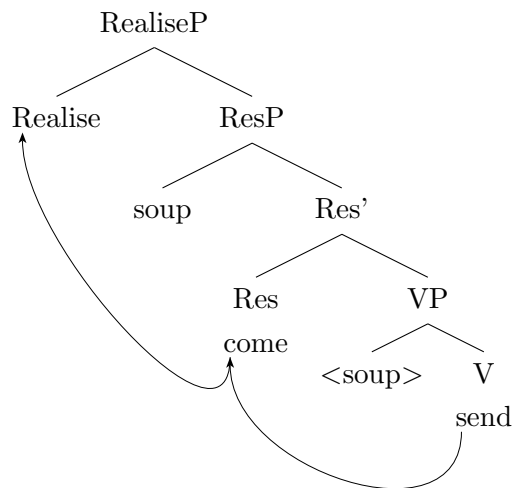


(73) Proposal (final): Path structure

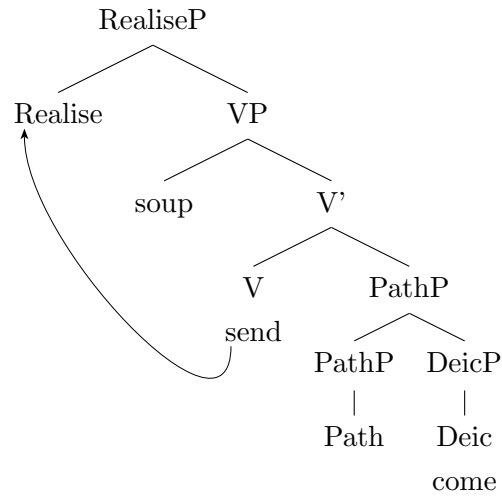


In this way, first, we can still capture the word orders. The VVO order is captured in (74) and the VOV order is captured in (75).

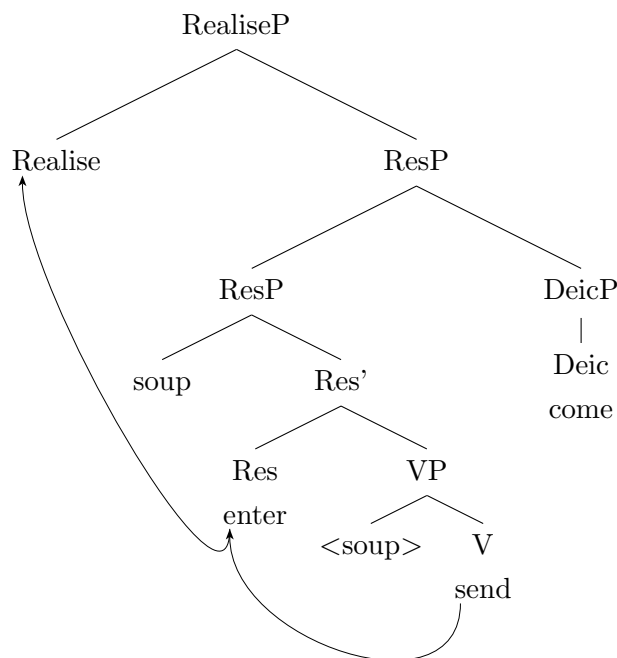
(74)



(75)



Second, we guarantee the split order $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ is licensed by assigning it the structure in (76).

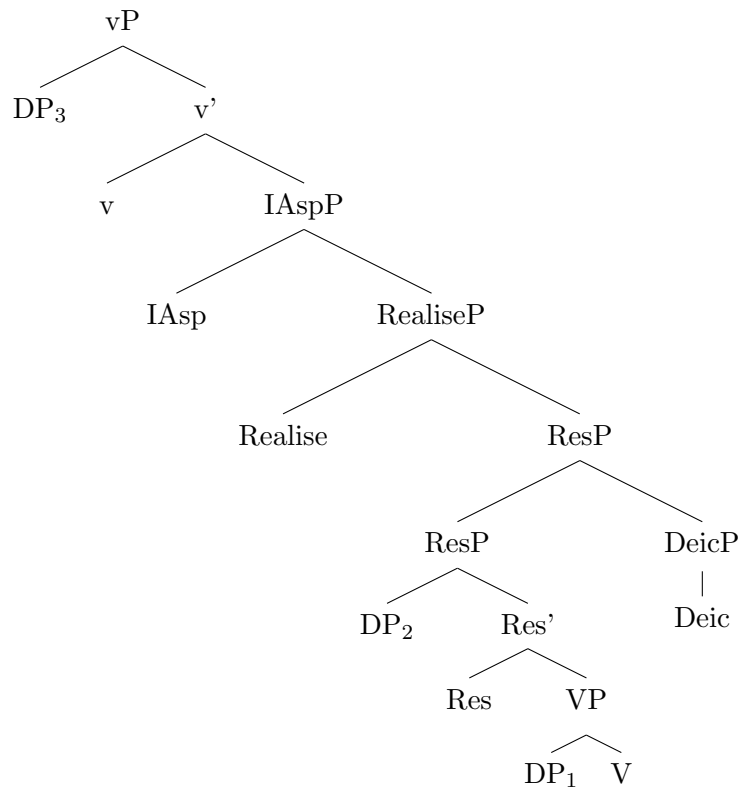
(76) Derivation of *song jin tang lai* ‘send enter soup come’

Assuming DeicP as an adjunct is not simply stipulative. The V_{deic} *lai/qu* ‘come/go’ in (71) or (76) indeed shows the property of being an adjunct: it can be removed without changing the core meaning. What is lost after removing *lai/qu* is simply some deictic information.

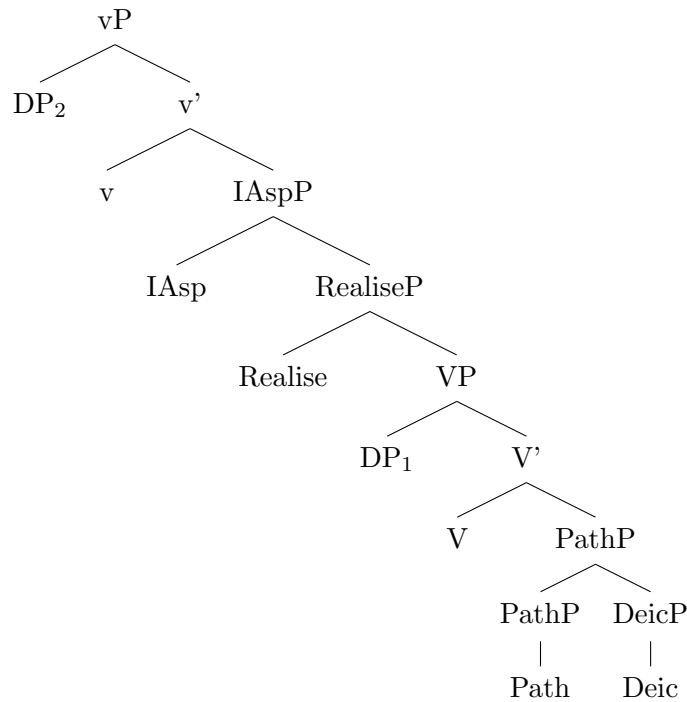
Third, we can explain the fact that V_{deic} s do not co-occur with non-directional resultative predicates (i.e. (70)) by assuming a semantic compatibility between the Res head and its adjunct. Specifically, the DeicP adjunct attaching to ResP can only make sense in the conceptual system when the Res is filled by a lexical item specified with a semantic feature describing a track. A non-directional verb does not have this feature, hence it will crash with a DeicP adjunct in semantics. In other words, when a non-directional verb fills Res, DeicP adjunct attaching to ResP results in infelicity, which is the reason why (70) is not accepted.

So far, I have proposed two articulated structures that syntax generates underlying the Mandarin DSVCs, shown in (72) and (73), repeated below:

(77) Proposal (final): Res structure



(78) Proposal (final): Path structure



Unlike in Ramchand's system where the traditional verbs are decomposed into the sub-evental projections, in my system, the structures (72) and (73) are generated prior to the lexical item insertion. The choice of the structure is decided by the conceptual system. If the conceptual system wants to express a result, the Res structure, namely (72) is build up; if the conceptual system wants to express a directed motion/moving track, the Path structure, namely (73) is generated. Among all the projections in both structures, VP, as the core of the event, is always projected, just as the procP always projects in Ramchand's system. IAspP also always projects as it is proposed to be the place to calculate telicity, which will be addressed in Section 3.3.2.4. RealiseP is to accommodate the aspect marker *le*, the argument for which is shown in Section 3.3.2.2. Since *le* can be omitted, RealiseP is an optional projection in the hierarchy. Obviously, the adjunct DeicP is optional as well due to its adjunct status. Whether the optional projections are needed is also decide by the conceptual system.

Recall that the Mandarin DSVCs have two major types: VVO and VOV. I propose that the VVO type of DSVCs are instantiations of the Res structure because the VVO types of DSVCs behaves the same as the resultative serial verbs in terms of word order, telicity, the position of *le* and the compatibility with

the potential morphemes and the negation (see discussion in Section 3.1.3). Whereas the VOV type of DSVCs actually instantiates an underlying Path structure, which is why they behave differently in these perspectives from the VVO type.

3.3.1.3 Lexical Item Insertion Mechanism

Once a particular structure is generated, relevant lexical items are selected from the lexicon, forming a **numeration** (Adger 2003: 142). The next step of the derivation in my system is called lexical item insertion.

The postulation that lexical items are inserted after the generation of the structure sounds similar to the Vocabulary Insertion (Late Insertion) in distributed morphology (see review in Section 1.2.2.4). However, the Vocabulary Insertion in distributed morphology is a mechanism that adds phonological features to a node. Whereas in my system, the lexical item insertion does not refer to the operation of adding phonological features to a node. In this model, it means the insertion into the Res/Path structure of an lexical item via a feature driven mechanism.

The proposal is that the insertion of the lexical item into the syntax structure is guided by the features specified on the syntactic nodes as well as the features specified on the lexical items. Specifically, the syntactic nodes are specified with categorial features, which is relevant to the lexical item insertion. On the other hand, the lexical items also have features. But the features are not the selectional features as is proposed in projectionist approaches. Instead, I propose two types of features on the lexical items: categorial features and semantic features.

Recall that neo-constructionist approaches generally hold the opinion that a lexical item only registers its core meaning (root) in the lexical entry. The radical versions of neo-constructionist approaches, such as Borer, even remove the categorial features from the lexical items in the lexicon. In this thesis though, I pursue a moderate approach just as Ramchand's system, which keeps the basic categorial features in the lexicon. This means, for example, the item *song* 'send' indeed bears a V feature in the lexicon, and the various directional verbs we have seen in this thesis all bear a V feature. If the categorial feature on an lexical item matches the categorial feature on a node, this item is able to be inserted under the node.

Apart from the categorial features, I also propose that the root meaning (encyclopedic information) of an lexical item are encoded in a series of semantic features. For example, a verb *run* can have a bundle of encyclopedic information described in (79).

- (79) *continuous directed motion undergone by animate entity*
motion involves rapid movement of legs, no continuous contact with
ground
 ...
Associations: exercise, boredom, heart attacks etc.

(Ramchand 2010: 9)

These pieces of information are encoded in many semantic features such as [+rapid], [+motion], [+leg] etc. Similarly, the root meaning of a directional verb *jin* ‘enter’ or *lai* ‘come’ can also be realised as many semantic features. Some of these semantic features can be identified by the features on the syntactic nodes, enabling the lexical item to be inserted under that particular node.

In short, the lexical item insertion mechanism involves two rules, summarised in (80).

- (80) Lexical Item Insertion Mechanism

Rule 1: If a lexical item M shares the same categorial feature as a syntactic node X, then the lexical item M is able to be inserted under the node X.

Rule 2: A lexical item M has a series of semantic features encoding its root meaning. If one of these features can be identified by a feature on a syntactic node X, then the lexical item M is able to be inserted under the node X.

This mechanism to some extent draws insight from the concept of UNDER-SPECIFICATION in distributed morphology, which asserts that the terminal nodes in syntax are fully specified with syntactic and semantic features while the lexical items applying to these positions need not be fully specified. In order for a lexical item to be inserted in a terminal node, the identifying feature of this lexical item needs to be a subset of the feature specified at the terminal node. In my model, I maintain the idea that the insertion of an item is driven

by the features specified on both syntax structure and the lexical item. However, I do not adopt the superset/subset relation between the features on the nodes and the ones on the lexical items. Instead, I propose that licensing of a lexical item under a certain syntactic head hinges on whether the lexical item and the syntactic node share the same categorial feature or identify a feature in each other.

I show the insertion of the V_{gen} *jin* ‘enter’ as an example. First, syntax generates a Res structure as in (81) or a Path structure as in (82).⁷



The terminal node V in the tree is specified with a categorial feature [V] while the node Res and Path are specified with feature [Res] and [Path] respectively. Then *jin* ‘enter’, is selected from the lexicon, awaiting for insertion. *jin* bears a categorial feature [V] as well as lots of semantic features encoding encyclopedic information, among which two features are related to the insertion, noted as [track] and [goal], considering that V_{gen} s generally express some form of trajectory information and entail a destination. Then the categorial feature [V] would license *jin* to be inserted under the terminal node V because the item and the node share the same categorial feature. The semantic feature [goal] is identified by the [Res] feature on Res while [track] is identified by the [Path] feature on Path respectively, permitting *jin* to be inserted under the functional head Res or Path. Thus it is possible for *jin* to be inserted under three syntactic nodes.

⁷These are rough structures omitting the event participant roles and the function heads above them.

Then how can syntax arrange the insertion if two items are licensed by one head? For example, in the serial verbs *song jin* both of the items bear the categorial feature V, which enables them to be inserted under the node V. Then how can syntax decide which one to choose to be inserted under V? To answer this question, I propose that syntax can seek the optimal solution that distributes the items to satisfy the need of as many heads as possible. For example, suppose that syntax built up a Res structure (82). Then a V_{dis} *song* ‘send’ and a V_{gen} *jin* ‘enter’ are drawn from the lexicon. Although they both bear the categorial feature V hence licensed by the syntactic node V, syntax will only insert the V_{dis} *song* under the node V and leave the V_{gen} *jin* for the node Res because the V_{gen} *jin* bears the semantic feature [goal] which is identified by the feature on the node Res. If syntax inserts *jin* under V first, there will be no lexical item to satisfy the node Res, so when *song* and *jin* are selected at the same time, *jin* will not be inserted under V, but under Res instead.

Now I use two groups of examples to show how the verbal morphemes in a DSVC are inserted in the syntactic nodes.

The first group, (83), illustrates DSVCs involving a V_{dis} *song* and a V_{gen} *jin*. Specifically, (83-a) is of the VVO type while (83-b) is of the VOV type.

- (83) a. Ta **song jin** le tang.
 3sg send enter ASP soup
 ‘S/He brought in the soup.’
 b. Ta **song** le tang **jin** fangjian.
 3sg send ASP soup enter room
 ‘S/He brought the soup into the room.’

First, for (83-a), a VVO type of DSVC, syntax builds up the Res structure (150). For (83-b), a VOV type of DSVC, syntax builds the Path structure (151).

Second, the relevant lexical items are selected from the lexicon, forming the numeration. For (83-a), the numeration contains: *ta, song, le, tang, jin*. For (83-b), the numeration contains: *ta, song, le, tang, jin, fangjian*.

Third, syntax determines the insertion of each lexical item in the numeration, according to the feature specification on the syntactic heads and the lexical items, namely the mechanism (80).

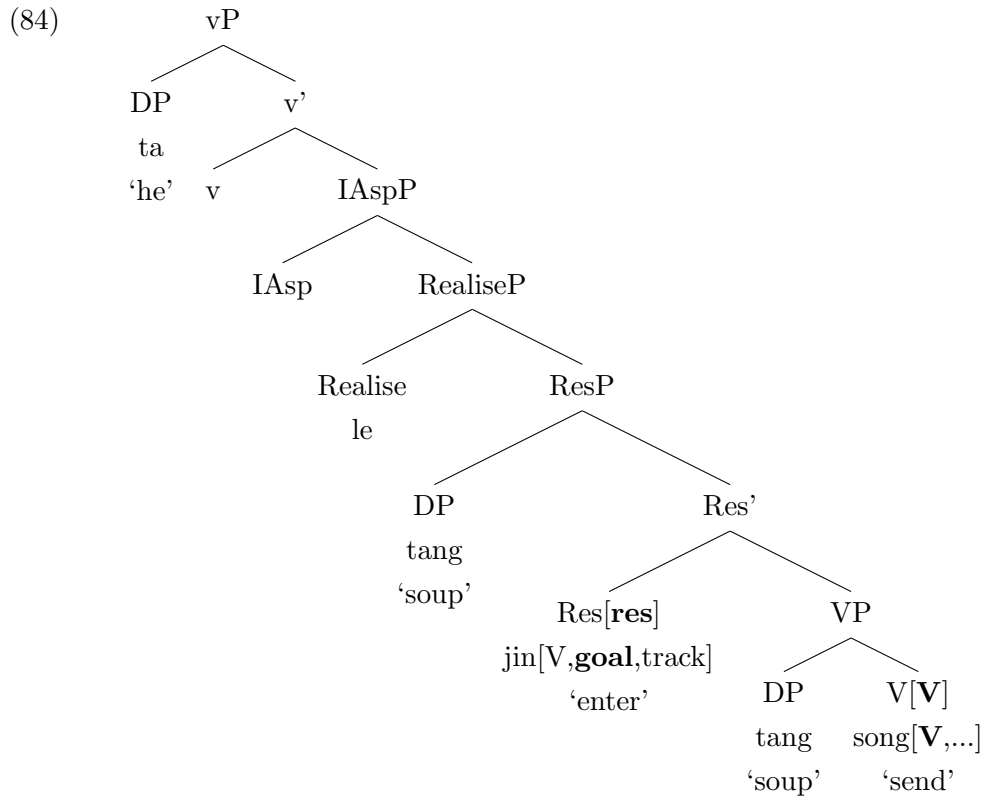
What is crucial in the example (83), is the features on the syntactic heads V, Res, Path and the ones on the lexical items the V_{dis} , *song* ‘send’ and the V_{gen} , *jin* ‘enter’.

In the case of (83-a), syntax has generated a Res structure. The syntactic heads V, Res bear features [V] and [Res] respectively. The lexical items *song* and *jin* also bear the categorial feature [V]. The [V] feature on *song* and *jin* enables both of them to be inserted under the V head, according to Rule 1 in (80). Besides, *jin* also bears semantic features noted as [track] and [goal] which come from its root meaning. The goal feature can be identified by the [Res] feature on Res, which means *jin* can be inserted under Res as well. In other words, *song* has one potential insertion position (under V) while *jin* has two potential positions (under V or Res). Since syntax adopts a optimal way to distribute the lexical items to satisfy all the heads, it will insert *song* under V and *jin* under Res.

The insertion position of the event participant roles can be deduced from their interpretation. From the translation, we can see that the object ‘soup’ is the undergoer of the movement. It is also the entity that ended up in some location. In other words, ‘soup’ is interpreted as the participant of the process sub-event and the participant of the result sub-event, which suggests that ‘soup’ is inserted as the spec of VP and the spec of ResP. The subject ‘he’ is the causer of the event, namely interpreted as the participant of the initiation sub-event, which suggests that it is in the spec of vP.

The tree representation after the lexical item insertion is shown in (84). The matched/identified features, which determine the insertion of the items, are in bold in the feature bundle⁸.

⁸:...’ denotes the semantic features of ‘send’ from its root meaning, which are irrelevant in its insertion.

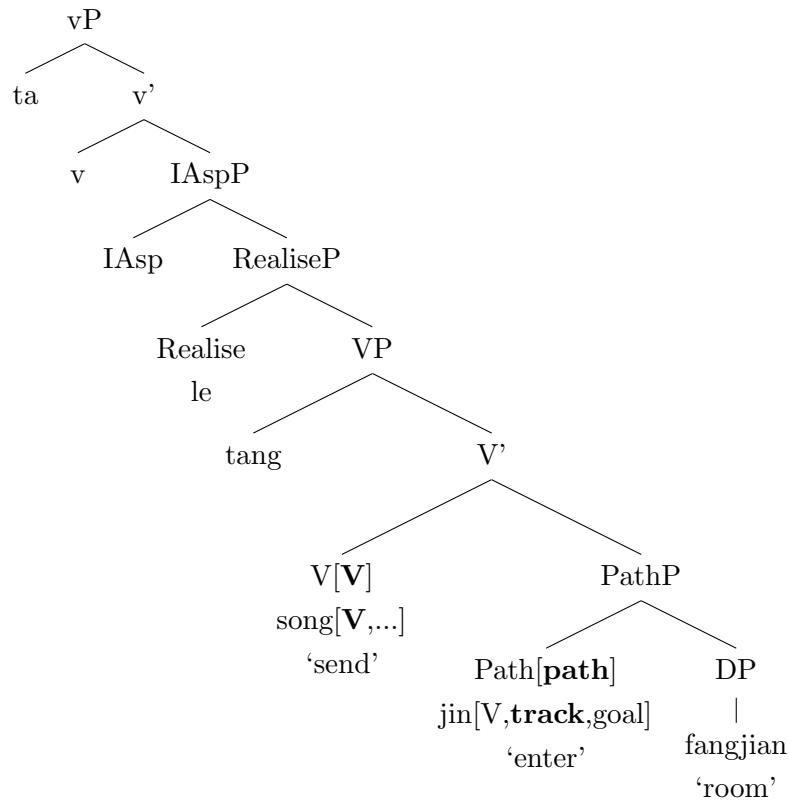


(84) is the underlying structure before head movement for (83-a).

On the other hand, in the case of (83-b), syntax has generated a Path structure. The syntactic heads V, Path bear features [V] and [Path] respectively. In this case, the semantic feature [track] on the lexical item *jin* can be identified by the syntactic feature *path* on the head Path, which enables *jin* to be inserted under Path. Therefore, syntax insert *jin* under Path and *song* under V. The locative object is inserted as the complement of Path.⁹ (85) shows the structure and relevant features before movement for (83-b).

⁹We haven't properly discussed locative object in this chapter. Here is just a preview on its position. The detailed discussion is in Chapter 4.

(85)



The second group of example is (86).

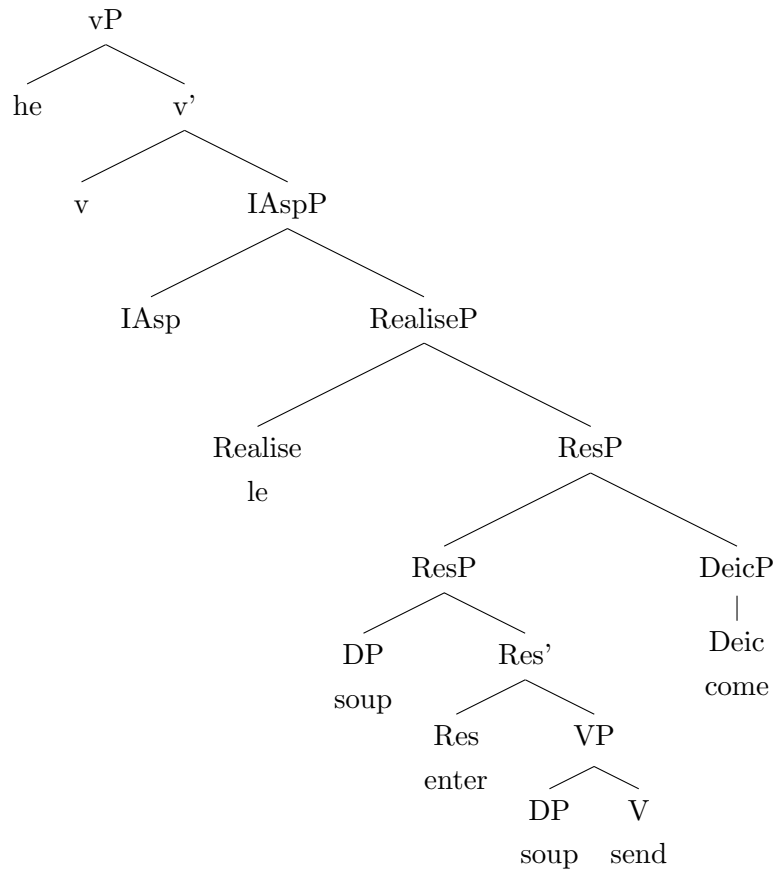
- (86) a. Ta **song jin** le tang **lai**.
 3sg send enter ASP soup come
 'S/He brought in the soup.'
- b. Ta **song** le tang **jin** fangjian **lai**.
 3sg send ASP soup enter room come
 'S/he brought the soup into the room.'

Actually, it simply just adds a V_{deic} *lai* to the first group. So now we have a V_{dis} *song*, a V_{gen} *jin* and a V_{deic} *lai*. Note that in this group of example the V_{deic} is separated from the V_{gen} by a direct object or a locative object.

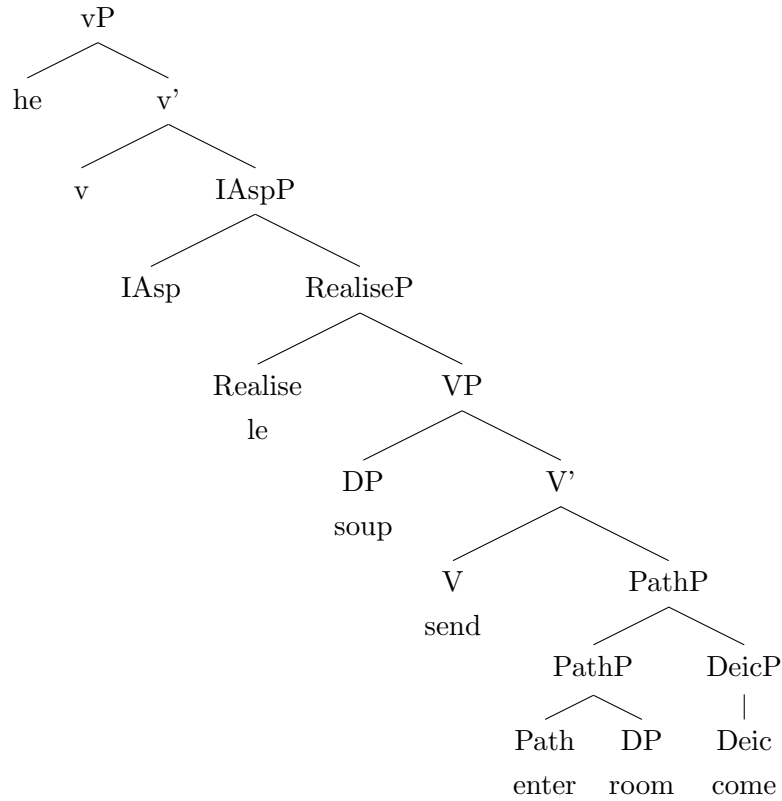
These sentences are instantiations of the Res structure and the Path structure with DeicP adjuncts because the V_{deic} *lai* here can be omitted without changing the core meaning. Once the V_{deic} *lai* is omitted, (86) becomes (83), in which only the deictic information is missing compared with (86). In other words, if the V_{deic} s do not directly follow the other verbs in the DSVC, they are adjuncts in my system.

(86-a) is a VVO type of DSVC, so it has a Res structure in which a DeicP adjunct is adjoined to ResP while (86-b), a VOV type, has a Path structure in which a DeicP adjunct is adjoined to PathP. Then according to the lexical item insertion mechanism, since V_{deic} have [Deictic] semantic feature which can be identified by the Deic head, V_{deic} s are inserted under the Deic head. (87) and (88) represent the lexical item insertion of (86-a) and (86-b) respectively.

(87) DeicP adjoined to ResP



(88) DeicP adjoined to PathP



Note that Deic is not the only place for the insertion of deictic verbs. Since the root meaning of $V_{\text{deic}s}$ (moving towards the speaker) also entails a destination, it is reasonable to assume that they have a semantic feature [goal] as the $V_{\text{gen}s}$ do. This means that $V_{\text{deic}s}$ can be inserted under Res as well. The instantiation of this situation is when $V_{\text{deic}s}$ directly follows the co-event verb, for example:

(89) Ta song lai le tang.
 3sg send come ASP soup
 ‘S/He brought the soup.’

This is a VVO type of DSVc, so it has a Res structure. And in the Res structure, *song* is under V while *lai* is under Res.

Based on the lexical item insertion mechanism, we can generalise the possible insertion positions for each type of verb in the Mandarin DSVc as in Table 3.1.

Table 3.1: Insertion positions for the verbs in Mandarin DSVCs

Type of lexical item	Insertion position
$V_{\text{dis}}/V_{\text{m}}$	V
V_{gen}	Res/Path
V_{deic}	Res/Deic

The functional heads under which these lexical items are inserted determine their interpretation: when the directional verbs are under Res, they are interpreted as a result; when they are under Path, they are interpreted as a moving track, denoting the directed motion of the undergoer. When they are under Deic, they express deictic information.

We will go through each serialising type of DSVCs in Chapter 4 to show that the generalization in Table 3.1 is empirically supported.

3.3.1.4 Head Movement

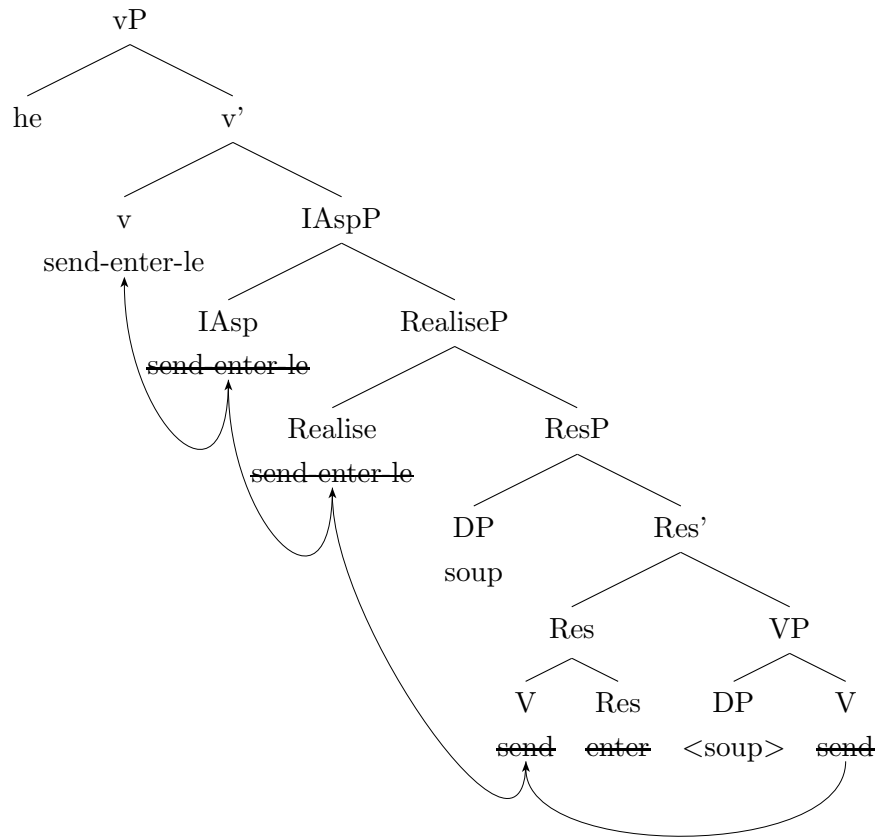
I have briefly introduced the head movement rules in Section 3.3.1.1, which I restate in (90):

- (90) Head Movement Rules:
 In a Res structure, V moves to the higher heads including Res, Realise, IAsP and v cyclically picking up the heads on its way.
 In a Path structure, Path do not move to V and V alone moves to higher heads Realise, IAsP and v cyclically picking up the heads on its way.

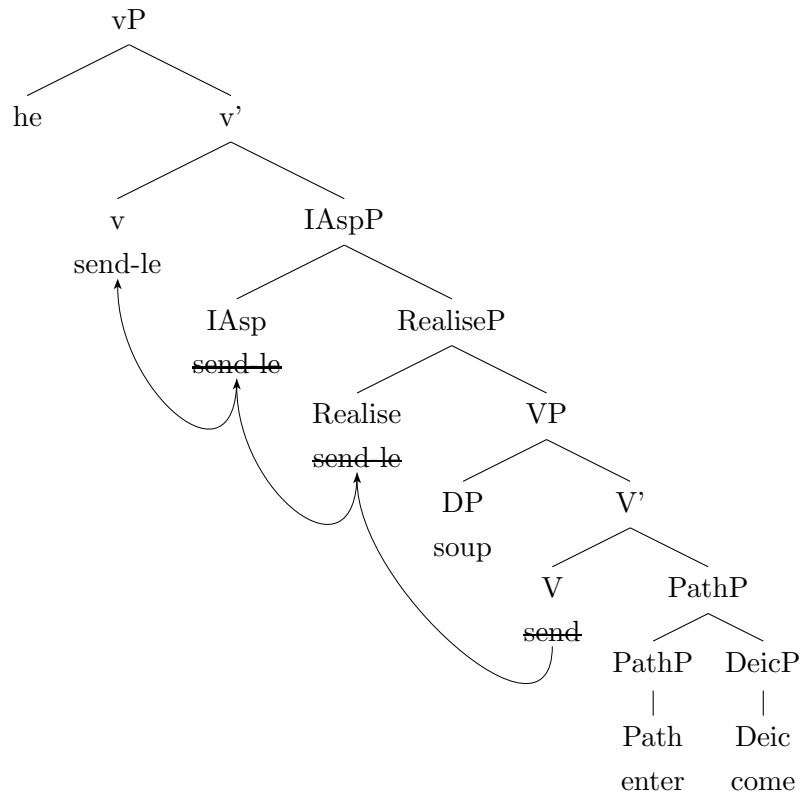
This postulation explains the surface word order in Mandarin DSVCs. (91) and (92) show how head movement works in the Res structure and Path structure respectively. (91) derives the word order ‘he send enter *le* soup’ and (92) derives ‘send *le* soup enter come’¹⁰. Note that arrows show the movement while <> denotes the unpronounced event participant.

¹⁰The analysis of the cluster *jìn lái* will be revised in Section 4.1.

(91) Head movement in the Res structure



(92) Head movement in the Path structure



This way of head movement can be theoretically achieved if we assume a feature driven approach. As a traditional convention of Minimalist Program, each movement is triggered by some feature. For example, in Adger (2003), what triggers V to v movement is an uninterpretable strong feature $[uV^*]$ on v (Adger 2003: 146); what triggers the auxiliary to T movement is a strong value which is given to the uninterpretable unvalued feature $[uInfl:]$ by T: when $[uInfl]$ on an auxiliary is checked by the tense feature of T, the auxiliary needs to get into a local relationship with T, which then triggers movement of Perf to adjoin to T (Adger 2003: 145). Of course, as a non-constructionist approach, Adger attributes these features on the lexical items. In our system, similar features should be assigned to the nodes of the structure.

Sharing the spirit of the feature checking system, I propose that the Res, Realise and IAsp heads all have a feature $[uV^*]$ which triggers V to move up. When V moves up, it incorporates the heads along the way it moves. Note that here I do not assume Realise has $[uRes^*]$ and IAsp has $[*uRealise]$ to trigger the movement because ResP and RealiseP are optional in the hierarchy. When ResP is missing, the uninterpretable feature $[uRes^*]$ on Realise will not

be satisfied; similarly, when RealiseP is missing, the uninterpretable feature [**uRealise*] on IAsp will not be satisfied. In comparison, assuming a [*uV**] feature on all the functional heads do not pose such problem.

On the other hand, in a Path structure, Path does not move to V because V does not have a [*uPath**] feature to trigger it. Instead, V moves to the functional heads Realise (if projected), IAsp, v in the incorporation fashion because the [*uV**] feature on these heads, which we have just proposed.

It may be questioned why it is not possible for the head V to bear a [*uPath**] feature, as in (93).



I argue that it is because PathP is also optional, which means that in the cases where V takes no PathP, this [*uPath**] feature will not be satisfied. Although alternatively it can be assumed that the [*uPath**] does not always present, it is more economical to postulate that it is just not possible for this uninterpretable feature to exist because of the structural reason. In comparison, assuming that Res bears a [*uV**] feature, as in (94), does not cause similar problems. When the ResP is not projected, the [*uV**] feature on Res also does not exist, hence the derivation will not crash because of the unsatisfied uninterpretable feature.



I have left a question in 3.3.1.1 about why I propose that in Mandarin ResP is above the projection for the process sub-event, i.e. VP, differing from Ramchand's account in which resP is below procP. Now we can see the benefit of this assumption.

First assume that ResP is under VP, ResP actually occupies the same position as PathP, as is shown in (95) and (96).

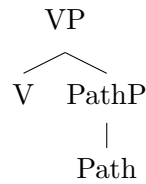


To accommodate the empirical data, we need to make sure that Res compulsorily raises to V whilst Path stays in situ. In order for Res to move to V, one possible solution is to assume that V bears an [uRes*] feature. This causes the same problem as (93). When there is no resultative predicate presented, this feature cannot be satisfied. Alternatively, since I have suggested in Section 3.3.1.1 (see Section 3.3.2.4 for detailed discussion) that IAsp bears a [Tel:] feature which can be valued by Res, Path and Realise, one may suggest, following Adger's strong/weak feature approach, that when Res values IAsp, the value is strong, so Res has to move up, whereas when Path values IAsp, the value is weak, so Path stays in situ. Nevertheless, we still can not neatly explain why Res has to move to V first and then move to IAsP, considering that the triggering feature is on IAsp rather than on V.

On the contrary, if we adopt the approach that Res is above VP and Path is below VP (as in (97) and (98)), we do not need to bother with these technical issues. We only need to assume a [uV*] feature on Res. This feature straightforwardly triggers V to Res movement. And Path automatically stays in situ because there is no feature in the system triggering its movement.



(98)



The consequence of projecting ResP above VP is that we need to loosen the restriction on the position of the RHEMATIC elements in Ramchand's sense. In Ramchand's system, RHEMATIC elements are never in the specifier position of sub-event heads. They are in the complement position of the procP or resP, providing further description for these sub-events. In other words, being in the complement position makes it impossible to interpret the RHEMATIC elements as event participants. However, in our modified theory, RHEMATIC elements cannot be in the complement of ResP any more because the complement position is now occupied by VP.

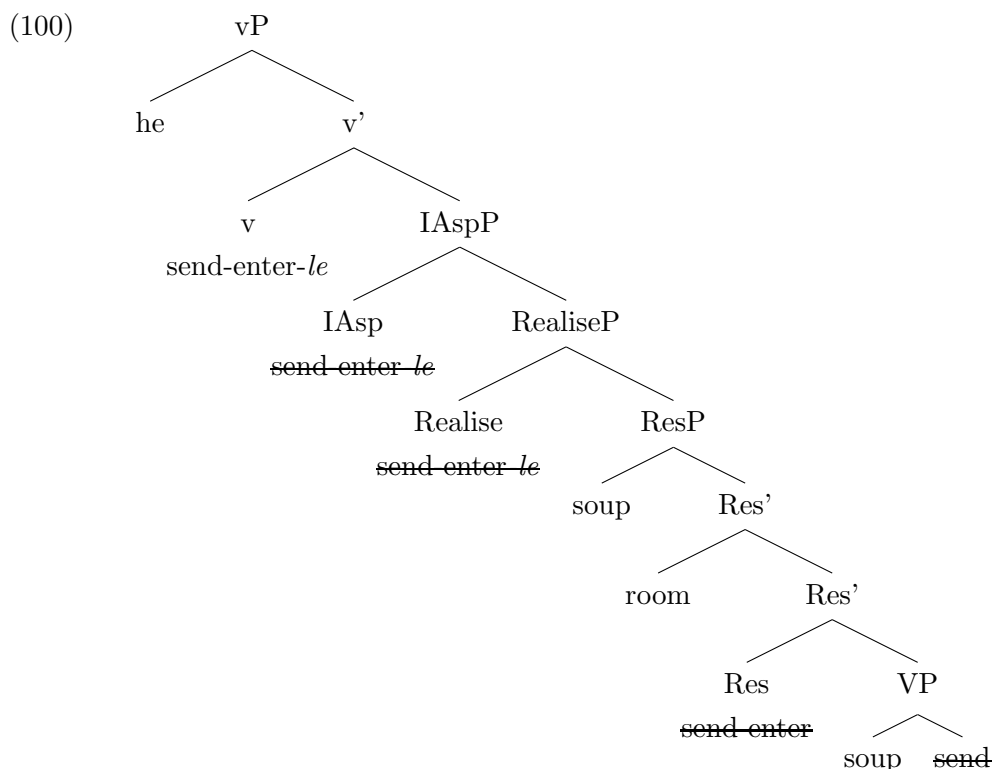
To deal with this technical problem, I propose that if there is RHEMATIC element for the result sub-event, this element appears as the second specifier of ResP. In other words, ResP can have two specifiers, the higher specifier is the result event participant, i.e. resultee, which acts like an external argument of this sub-event projection, while the lower one is the RHEMATIC element that further describes the state of the resultee. The lower specifier of ResP acts like the internal argument of this projection. This assumption maintains the general thematic hierarchy that external argument is merged higher than the internal argument. We can assume that when interpreting the syntax structure, semantic can not only interpret specifiers of the sub-evental projections as the event participants and the complements as the descriptions of the event. It can also distinguish different specifiers. If a sub-evental projection has two specifiers, the higher specifier is automatically interpreted as the event participant while the lower specifier is recognised as the description of the event.

Following this postulation, in a VVO type of DSVC containing a locative object, for example, (99),

- (99) Ta song jin fangjin yi wan tang.
 3sg send enter room one CL soup
 'S/He brought into the room a bowl of soup.'

the subject *ta* is the initiator, so it is inserted in the Spec of vP. The direct object *tang* undergoes the movement and it is also the entity that ended up

in the room, so it is inserted in the Spec of VP and ResP. The locative object *fangjian* provides further description to the result sub-event: the result state of the soup is in the room. Therefore the GROUND ‘room’ is realised as the lower specifier of the ResP. (100) illustrates the tree representation for (99).¹¹



3.3.2 Functional Projections

In Section 3.3.1, we have build up the articulated structure with three sub-evental projections vP, VP, ResP, as well as four other projections PathP, DedicP, RealiseP and IAspP. We have also introduced a set of rules in this model including the lexical item insertion mechanism and head movement rules. I have pointed out that these proposals share spirit with the first phase syntax proposed by Ramchand, the hierarchy of projection and feature driven head movement in Adger (2003), and some ideas in distributed morphology. Apart from those, my proposal of the functional projections sandwiching VP also

¹¹ There is a remaining puzzle here. After the head movement, we derives the word order ‘send enter *le* soup room’, but in the actual word order, ‘room’ precedes ‘soup’. For now we can only assume that when having two specifiers, for some reason, it is not the highest participant role, namely resultee ‘soup’, but the undergoer ‘soup’ in the Spec of VP that is spelled out. I leave the reason for this exceptional spell-out rule for further research.

receive inspiration from a bunch of proposals dealing with various phenomena in the literature. In this section, I discuss the functional projections in my hierarchical structure. I will present the key literature that shed light on my proposal of each projection and show how my approach is related to them. Specifically, 3.3.2.1 introduces the analysis of Chinese resultatives in the literature, which correlates to the ResP in my theory. Section 3.3.2.2 reviews the semantic and syntactic discussion of verb-*le* and explain the motivation of RealiseP. Section 3.3.2.3 addresses the studies in spatial PPs, which generally adopt a cartographic approach, sympathetic to my approach in nature. Section 3.3.2.4 addresses the representation of situation aspect in the syntax, which inspires my proposal of IAspP and telicity calculation. Lastly, Section 3.3.2.5 presents a few approaches to deal with word order alternations in verb-particle constructions, among which Nicol's approach, which utilises functional projections and movement to account for the word order alternations as well as the interpretation differences, shares the same spirit with my theory.

3.3.2.1 ResP

ResP is the projection to accommodate the resultative predicates. Resultative structure itself is a widely investigated topic in the literature. The mandarin resultative structures, as briefly introduced in Chapter 2, also receive various analysis. It is beyond the scope of this thesis to review all of them, so I will simply review two representative but entirely different approaches. One is a lexical approach which assumes that RSVCs are compounds formed in the lexicon and then enter syntax as a whole lexical item. This idea is represented by Yafei Li (1990) and subsequent works. The other one is a syntactic approach which assumes that the two verbal morphemes head two projections in the syntax and during the derivation, one moves and adjoins to the other, forming the surface 'compound'. This position is held by Sybesma (1999). The proposal of ResP in our theory shows sympathy to the latter approach.

Li's lexical approach

Y Li (1990) follows the descriptive literature's view that the V-V clusters are compounds. I have argued in Chapter 2 that these V-V clusters should not be considered as compounds, so his approach is actually not favoured in this thesis. But since Li's proposal was once very influential, we still present a short review here.

The main research question that Li focuses on concerns the theta criterion. He noticed that the RVCs seem to have more theta roles available than the overt NP arguments, which is against the theta criterion that each theta role is assigned to one argument. An example is shown in (101).

- (101) Baoyu da si le lang.
 Baoyu hit die ASP wolf
 ‘Baoyu hit and killed the wolf.’

In (101), the verb morpheme *da* clearly assigns two theta roles and the result morpheme *si* assigns one, while only two NP arguments are present in the sentence. Actually *da* and *si* share one argument, namely *lang* ‘wolf’.

Li attributes the argument structure of the whole “compound” to the argument structure of the component verbal morphemes, pointing out that the ‘V-V’ compounds in Chinese only allow certain theta grid patterns. The restrictions of theta assignment follow from three important assumptions, which are theta identification, a hierarchically structured theta grid and head feature percolation. Specifically, theta identification is a mechanism which links two theta roles together, and then assigns the identified role to a single argument. Following Grimshaw (1987), Li assumes that the assignment of a verb’s theta roles is strictly hierarchical. The most prominent theta role is assigned last, appearing in the left-most position of the theta grid while the least prominent theta role is assigned first, appearing in the right-most position of the theta grid. For example, the internal structure of ‘give’ is as follows:

- (102) give <Agent, <Goal, <Theme>>>

where the most prominent role Agent is assigned last and the least prominent role Theme is assigned first. Finally, by ‘head feature percolation’, Li assumes that V1 is the head of RVCs and that “the theta-role prominence of the head must be strictly maintained in the theta-grid of the compound.”

These three assumptions can account for the majority of the thematic relations in RVCs. For example, they predict the reading (a) and (b) of the following sentence and rule out the (d) reading.

- (103) Zhangsan zhui lei le Lisi.
 Zhangsan chase tired ASP Lisi

- (a) Zhangsan chased Lisi and Lisi got tired.
- (b) Zhangsan chased Lisi and Zhangsan got tired.
- (c) Lisi chased Zhangsan and Lisi got tired.
- (d) *Lisi chased Zhangsan and Zhangsan got tired.

In reading (a), the internal argument of V1 *zhui* ‘chase’ is identified with the single argument of V2 *lei* ‘tired’, giving an object-oriented reading. In reading (b), the external argument of V1 is identified with the single argument of V2, giving a subject-oriented reading. (d) is ruled out because in this interpretation, Lisi is the most prominent theta role of ‘chase’, and the prominence of the head should be percolated to the compound’s theta grid. Therefore, Lisi should be the most prominent theta role of the compound ‘chase-tired’ as well, thus appearing at the left position of the theta grid, serving as the subject of the sentence, which is not the case in (103). In other words, (d) is impossible because it goes against the assumptions of structured theta grid and head feature percolation. However, Li’s proposal wrongly rules out reading (c) as well, which is actually a valid reading.

To fix this problem, Li (1995) further proposes that there are two causative roles (c-roles): Cause and Affectee. They also form a “causative hierarchy”, in which Cause is more prominent than Affectee. Li suggests that the two c-roles are assigned based on the following conditions:

- (104) Conditions on the assignment of Cause and Affectee
- a. The argument in the subject position receives the c-role Cause from a resultative compound only if it does not receive a theta role from Vres.
 - b. The argument in the object position receives the c-role Affectee from a resultative compound if it receives a theta role at least from Vres.

(Li 1995: 267)

Finally, Li assumes that when the causative hierarchy applies, the thematic hierarchy can be overridden.

With this additional proposal, the reading (c) above is correctly predicted. Because in this case, the argument in the subject position, *Zhangsan*, does not receive a theta role from Vres *lei*, thus receiving the Cause role. On the

other hand, the argument in the object position, *Lisi*, receives a theta role both from V1 and Vres, satisfying the condition on the assignment of Affectee. Then causative hierarchy applies, overriding the thematic hierarchy. According to the causative hierarchy, the Cause is more prominent than the Affectee. This theta-role prominence is maintained in the theta-grid of the compound, complying with head feature percolation.

Although Li's proposal can explain some ambiguity problems in RVCs, it fails to cover some other data and receives a lot of criticism as well.

First, I show some of the data pointed out by others, which Li's proposal failed to account for.

Li's proposal actually underlyingly assumed that all the theta roles are exhaustively assigned and identified. Nonetheless, in some Chinese RVCs, some theta roles are just not realized at all. Li's proposal cannot account for these data, as is pointed out by Huang and Lin (1992: 95). For example,

- (105) Zhangsan kan dun le dao.
 Zhangsan cut blunt ASP knife
 'Zhangsan cut something with the knife and the knife got blunt.'

Li's proposal also cannot explain the cases where there are three overt arguments, as is pointed out by C Li (2013). For example:

- (106) Zhangsan jiao hui le Lisi na-shou ge.
 Zhangsan teach know ASP Lisi that-CL song
 'Zhangsan taught Lisi that song, and as a result Lisi learned it.'

Secondly, Li's theoretical assumption is also widely criticised from many perspectives. For example, the conditions on the assignment of Cause and Affectee is both problematic in theory and practice. Theoretically, this condition is very stipulative (Her 2007). Practically, in the case of subject-oriented reading, as in (103)-b, the condition predicts that the subject cannot receive the Cause role and the object cannot receive the Affectee role. Therefore, there should be no causative relation built here. However, intuitively, it is Zhangsan's chasing that got Zhangsan tired, hence, Zhangsan arguably receives the Cause role (Li 2013). This mismatch between the theory and intuition also poses a problem to the assumption.

Moreover, Li's solution is also criticized for the redundancy that for an unambiguous sentence like (107), "the human parser may pursue all the other three possible ways of theta-identification before it gets the correct interpretation" (Li 2013).

- (107) Zhangsan xi ganjing le yifu.
 Zhangsan wash clean ASP clothes
 'Zhangsan washed his clothes clean.'

In essence, Li's approach is confined within the assumption that the V-V cluster is a readily formed compound in the lexicon. The theta identification, theta grid and the head feature percolation are all meant to happen in the lexicon, following Li's idea.

Syntactic approach In contrast, Sybesma (1999) uses a syntactic approach which treats the two verbal elements as two syntactical items. The proposal of ResP in this thesis is based on this approach.

Sybesma points out that there are two types of resultatives in Mandarin: one is what he called 'cluster resultative', shown in (108-a), which is also what we refer to as resultative serial verbs; the other is called '*de*-resultatives' in which a morpheme *de* occurs after the action verb, before the object and the resultative predicate, as in (108-b).¹²

- (108) a. Ta ku shi le shoujuan.
 he cry wet ASP handkerchief
 b. Ta ku de shoujuan shi le.
 he cry DE handkerchief wet asp
 'He cried and as a result the handkerchief got wet.'

The two alternatives do not differ substantially in meaning and are both acceptable to some speakers, which means there is some kind of optionality here. However, others tend to favour the cluster variant and in some cases even reject the *de* variant. The latter group of speakers suggest that (108-b) can be saved by adding an intensifier like *dou* 'even, all' to the embedded head, as in (109).

¹²Note that this *de* is simply a homonym with the potential morpheme *de* 'can' mentioned in Chapter 2. They are not semantically related.

- (109) Ta ku de shoujuan dou shi le.
 he cry DE handkerchief even wet ASP
 ‘He cried and as a result even the handkerchief got wet.’

In order to account for the empirical data above, Sybesma lists two possible solutions. One solution is to assume that underlyingly both cluster resultatives and *de*-resultatives encompass a functional projection ExtP sandwiched between V and the result denoting phrase. The head of ExtP must be phonologically supported by either raising the resultative predicate to incorporate to Ext or by inserting a *de*. The difference between cluster resultatives and *de*-resultatives (namely between (108-a) and (108-b)) lies in that the result denoting phrase in the cluster resultatives is a small clause (as in (110-a)) while the one in the *de*-resultatives is an IP (as in (110-b)).

- (110) a. Zhansan [VP ku [ExtP Ext [SC shoujuan shi-le]]]
 b. Zhansan [VP ku [ExtP Ext [IP shoujuan shi-le]]]
 (Sybesma 1999: 30)

In (110-a), there is no full-fledged sentence, but only an SC without any functional material like TP. The resultative predicate can move up and provide the head of ExtP with the necessary phonological matrix. While in (110-b), the IP blocked the resultative predicate to move out. So the only option to satisfy the phonological need of Ext is to insert the *de*.

The other solution offered and actually favoured by Sybesma is a two-construction analysis. Under this solution, the underlying structures for the cluster resultatives and *de*-resultatives are different. The cluster resultatives are exactly like the resultative constructions in many other languages such as English and Dutch: the result denoting small clause directly complements the matrix verb. In other words, no ExtP is involved, as in (111-a). Sybesma refers to this structure as genuine resultatives. The *de*-resultatives, however, are actually degree structure and involve an ExtP in between the matrix verb and the small clause, as in (111-b).

- (111) a. NP [VP V [SC NP XP]]
 b. NP [VP V [ExtP Ext [SC NP XP]]

Sybesma prefers the latter solution for two reasons. Conceptually, degree and result are two different concepts, hence it is more reasonable to postulate two different structures. Theoretically, asserting that Mandarin resultatives do not involve ExtP is beneficial in unifying the analysis of resultatives in Mandarin with the resultatives in other languages.

Back to our data, Mandarin DSVCs do not allow a *de* variant. For example:

- (112) a. Ta song lai shu le.
he send come book SFP
b. *Ta song de shu lai le.
he send de book come SFP
‘He brought the book.’
- (113) a. Ta ban guo lai wushi ben shu le.
he move cross come fifty CL book SFP
b. *Ta ban de wushi ben shu guo lai le.
he move de fifty CL book cross come SFP
‘He moved fifty books here.’

And actually, by closer examination, we find that not all the cluster resultatives permit a *de*-resultative variant either. For example:

- (114) a. Ta da si lang le.
he hit die wolf SFP
b. ?Ta da de lang si le.
he hit de wolf die SFP
‘He hit the wolf and the wolf died.’
- (115) a. Ta ti dao pingzi le.
he kick fall bottle SFP
b. ?Ta ti de pingzi dao le .
he kick de bottle fall SFP
‘He kicked the bottle and the bottle fell.’
- (116) a. Ta xie wan le zuoye.
he write finish asp homework
b. *Ta xie de zuoye wan le.
he write DE homework finish asp
‘He finished the homework.’

As in (114) and (115), the cluster RVS *da si* and *ti dao* marginally accept the *de* variant. In (116), the cluster RVC *xie wan* cannot be transformed to a *de* variant. These RVCs and our DSVCs have something in common. They all involve argument sharing. Besides, their *de* variant, if accepted, yields an ambiguous meaning, in which one is the argument sharing meaning, the other is a non-argument sharing meaning. The best example is in (115), (115-a) is clearly interpreted as ‘he kicked the bottle and the bottle fell’, while (115-b), apart from the same interpretation, can also be interpreted as ‘he kicked a table and a bottle on the table fell’.

On the contrary, the RVCs allowing a *de*-construction variant do not involve argument sharing. The example *ku shi* as in (108-a) obviously does not involve argument sharing. (117) is another example, which does not involve argument sharing and allows *de*-construction alternation.

- (117) a. Ta kan dun le dao.
 he cut blunt ASP knife
 b. Ta kan de dao dun le.
 he cut DE knife blunt ASP
 ‘‘He cut something and the knife got blunt because of this. ’’

The *de* variant in (117) can only express a non-argument-sharing meaning. It is not possible to interpret (117-b) as ‘he cut the knife and made it blunt’.

This observation, again, supports Sybesma’s position that cluster RVC and *de* RVC should have different underlying structures. And obviously, the DSVCs bear similarities with cluster RVCs rather than *de* RVCs. Therefore, the ResP proposed in this thesis is sympathetic to Sybesma’s analysis for the cluster resultatives: both methods project an independent XP headed by the resultative predicate. The main difference lies in the hierarchy of VP and ResP. Sybesma suggests ResP is lower than VP whilst in our system, ResP is above VP. The benefit of merging ResP above VP is discussed in Section 3.3.1.4 and Section 3.3.2.2.

3.3.2.2 RealiseP and *le*

Now I discuss the motivation of RealiseP and the reason to merge the so called perfective aspect marker *le* under Realise.

Traditionally, *le* is referred to as a perfective aspect marker. So it seems natural to suggest that *le* projects a PerfP as the English auxiliary ‘have’ does. However, looking back to the literature on *le*, treating *le* as a Perf head is actually questionable if we consider its function.

A large number of researchers have discussed the meaning of *le* (Chao 1968, Li & Thompson 1981, Smith 1997, Sybesma 1997, Sybesma 1999).

Some data suggests that *le* indicates completion:

- (118) Ta si le.
 he die ASP
 “He died.”

- (119) Ta mai le yi ben shu.
 he buy ASP one CL book.
 “He bought a book.”

The *le* here indicates that the action of ‘die’ and ‘buy a book’ has finished.

However, there are many cases where *le* clearly does not signal completion:

- (120) Ta xie le yi feng xin, keshi mei xie wan.
 he write ASP one CL letter, but not write finish
 “He was writing a letter, but he did not finish it.”

Clearly, this *le* does not signify the action of ‘writing letter’ is completed, or else it would contradict with the added assertion. Smith suggests that *le* signals ‘termination’ (mid-way interruption) rather than ‘completion’. Similarly, Liu (1988) also points out that *le* does not express completion, but he uses “realization” to refer to the semantics of *le*, which can be illustrated in the following pairs:

- (121) a. Ta chi le cai, jue de you dian xian.
 he eat ASP dish, feel DE have a-little salty
 “He ate the dish (may or may not finish) and felt that it was a bit salty.”
 b. Ta chi wan cai, jue de you dian xian.
 he eat finish dish, feel DE have a-little salty
 “He ate up the dish and felt that it was a bit salty.”

The contrast lies in that (121-a) may indicate that he felt the salty flavour after one or two bites of the dish while (121-b) entails that only after he finished the whole dish did he feel the salty flavour. Again this shows that *le* does not signal completion. It is the resultative predicate, in this case *wan*, that contributes to the completion meaning. Liu further points out that the semantics of the negation of *le* also suggests that *le* does not mean completion. The negation of a *le* sentence is adding a negative adverb *mei / meiyou* “not / not have” and deleting *le*, for example:

- (122) a. Ta mai le shu.
 he buy ASP book
 “He bought a book.”
 b. Ta mei mai shu.
 he not buy book.
 “He did not buy a book.”

Liu argues that if *le* really means completion, then its negative counterpart should mean “an action has not been completed”. However, (122-b) does not mean that he stopped in the middle of the process of buying books. It simply means that the whole event has not happened. Hence, Liu’s argument is that *le*, instead of denoting completion, expresses the realization of some event. In other words, the event has happened or has appeared on the scene.

Sybesma agrees with Smith and Liu that *le* expresses termination/realization. He further points out that the fact that *le* sometimes signals completion while sometimes not is due to the nature of the object NP. Specifically, when the NP is specific or discrete, *le* marks completion; if the object is mass, *le* marks termination/realization. I adapt his example in (123).

- (123) a. Ta chi le yi zhi ji, jue de you dian xian.
 he eat ASP one CL chicken, feel DE have a-little salty.
 “He ate a whole chicken and felt it was a bit salty.”
 b. Ta chi le ji, jue de you dian xian.
 he eat ASP chicken, feel DE have a-little salty
 “He ate some chicken and felt it was a bit salty” or “He ate a
 whole chicken and felt it was a bit salty.”

As can be seen from the translation, when the object is specific (as in (123-a)), only the completion reading is available. When the object is a bare NP (as in

(123-b)), the sentence is ambiguous. Because the Chinese bare NP is ambiguous between the specific reading and mass reading, when it denotes the mass reading, *le* is interpreted as termination; when the object denotes the specific reading, it yields the same meaning as (123-a).

Syntactically, Sybesma proposed that *le* is merged lower than V° . And there are two possible positions for *le* to merge. One position is shown in (124):



According to him, both XP and YP are small clauses. The verb is complemented by a small clause XP, the head of which is *le*. The head X is complemented by another small clause YP, which is formed by the object and a resultative predicate. So (125) will have the underlying structure in (126):

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

- (126) ku [XP *le* [SC shoujuan shi]]

The semantic relation between XP and YP is that: *le* expresses the state denoted by YP has realized. The *le* in this position is called REALIZATION *le*. To derive the surface order, Sybesma further posits that *le* is a suffix in the lexicon, hence needs to come last. In other words, the head Y raises and incorporates into X. Then the whole cluster Y-*le* moves on to incorporate into V.

The other possibility for *le* is that *le* can also head the projection that is headed by resultative predicates, namely YP in (124). In other words, *le* in this case is considered as a resultative predicate, just as the *shi* in the serial verbs *ku shi* ‘cry wet’. This *le* is referred to as ENDPOINT *le*. The interpretation of endpoint *le* relies on the nature of the direct object, namely the specifier of YP. Specifically, if the NP is specific and bounded, *le* is interpreted as completing, if

it is not, *le* is taken as a ‘freeze marker’ (Sybesma 1999: 88), by which Sybesma meant the action started and terminated in the middle of the process, like being frozen. We can revisit the example (123) to illustrate this point. Endpoint *le* predicates of the direct object, indicating that the matrix verb’s action is to be applied to the object, until the object is complete. In (123-a), *le* signals that the act of eating extends to the whole chicken: it goes on until the chicken is finished. While in (123-b), since the object is ambiguous between bounded and unbounded, it yields two possible readings.

The realization *le* and the endpoint *le* can be distinguished by embedding the sentence in a context with a modal *yao / xiang* ‘want to, would like to’. Since the semantics of these modals indicates unrealised events, which is contradictory with a realization reading, the realization *le* would clash with such a modal while the endpoint *le* is compatible with them. For example, the *les* in (127) are endpoint *le* and the ones in (128) are realization *le*.

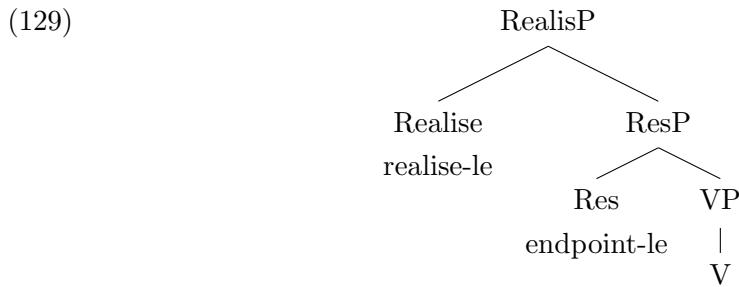
- (127) a. Wang Wu xiang mai le ta-de nei ji-tou zhu.
 Wang Wu want sell LE he-DE that several-CL pig
 ‘Wang Wu wants to sell those few pigs of his.’
- b. Zhang San yao sha le Li Si.
 Zhang San want kill LE Li Si
 ‘Zhang San wants to kill Li Si.’
- (128) a. *Ta yao xie le yi-feng xin.
 he want write LE one-CL letter
 intended: ‘he wants to write a letter.’
- b. *Ta xiang kan le zhe-ben shu.
 he want read LE this-CL book
 ‘He wants to read this book.’

(Sybesma 1999: 74)

In short, endpoint *le* predicates of an NP, indicating that the matrix verb’s action is to be applied to the object, until the object is complete. Realise *le* predicates of a small clause, expressing that the state denoted by the small clause has realised.

From the short review of the semantics and syntax of *le* above, we can see that *le* is very different from the English perfective auxiliary ‘have’ in terms of

meaning and function. *le* seems to be more closely related to situation aspect rather than viewpoint aspect: the endpoint *le* is equal to a resultative predicate which symbols the endpoint of the event; the realization *le* telicizes a resultative phrase which itself telicizes a matrix verb. Therefore, it is not unproblematic to assign *le* with the same slot as the English ‘have’ in syntax. Sybesma provided a very nice syntactic proposal for *le*. I agree with Sybesma’s idea that there are two syntactic positions for the lexical item *le* and I adopt his terms of REALIZATION *le* and ENDPPOINT *le*. However, I make some changes to the actual syntactic positions that both *les* merge. In our theory, both realization *le* and endpoint *le* are above VP rather than below VP. Specifically, ResP is the position to accommodate the endpoint *le* while RealiseP is the position for the insertion of the realization *le*, namely (129).



This proposal guarantees that the endpoint *le* acts like a resultative predicate and the realization *le* functions on the resultative phrase. It also derives the right word order straightforwardly. Since RealiseP is above ResP, which itself is above VP, the head movement will lead to the surface order V-Res-*le* directly. In this way we do not need to additionally assume as Sybesma did that *le* is lexically specified as a suffix. As I introduced in Section 2.1.2, there are only a small number of morphemes which are classified by the descriptive linguists as affixes. Some of them only contribute to create polysyllabic word out of monosyllabic words because there are too many homophonous monosyllabic words in the language. Some of them behaves like derivational affixes, which can change word class. *le* obvious does not belong to either of these kind. It may be suggested to assume that *le* is a inflectional morpheme. However, considering that Chinese lacks grammatical agreement, morphological paradigms and morphophonemic alternation, which is usually associated with the term affix (Packard 2000: 76), it is unclear whether *le* is exactly the same kind of element as the inflectional affixes in the normal sense. In other words, arguing for the suffix status of *le* is not trivial. Nevertheless, in my theory, we avoid

this position. *le* is viewed as a root word and it is inserted under Realise. It is due to the head movement that *le* ends up following the main verb (in a single verb sentence or a VOV type of DSVC) or V-Res cluster (in a VVO type of DSVC) in the sentence.

Note that the verb-following *les* in the DSVC word order variants that we mentioned in Chapter 2 are actually all realise *le*, not endpoint *le*, because they cannot co-occur with the modal *yao* /*xiang* regardless of the variants they present in:

- (130) a. *Ta yao song lai le shu.
 he want send come LE book
 b. *Ta yao song le shu lai.
 he want send LE book come
 c. *Ta yao song jin lai le shu.
 he want send enter come LE book
 d. *Ta yao song le shu jin lai.
 he want send LE book enter come
 e. *Ta yao song jin le shu lai.
 he want send enter LE book come

Therefore, in the rest of the thesis, we will focus on the realization *le* only. These *les*, as I have shown in (129), are inserted under the head of RealiseP.

3.3.2.3 PathP and DeicP

The postulation of PathP and DeicP is generally inspired by the studies on spatial PPs, in which PathP in particular is an often cited projection. In this section, I review some core literature and show that our PathP and DeicP share similar spirit with the existing theories that propose the projections with the same (or similar) names.

Research by Jackendoff (1973, 1983, 1996) on the conceptual structure of spatial relations has been a particularly influential precursor for recent approaches to spatial PPs. Spatial adpositions are divided between those which denote the ontological categories of Path (TO, FROM, VIA) and Place (IN, ON, UP). Jackendoff proposes that Path generally dominates Place. For example, (131-a) shows that Place dominates the noun, and (131-b)-(131-c) show that Path dominates Place.

- (131) a. in the room: [PLACE IN ([THING room])]
 b. into the room: [PATH TO ([PLACE IN ([THING room])])]
 c. through the cheese: [PATH VIA ([PLACE IN ([THING cheese])])]

In (131-b), a PLACE function IN takes a THING as its argument, to return a PLACE. The PLACE in turn is the argument of the PATH function TO that returns a PATH.

Recent studies on spatial PPs generally agree with Jackendoff in that spatial PPs can be divided into PlaceP and PathP. Basically, PlacePs are associated with locational meaning while PathPs are associated with directed motion. When Path and Place co-occur, Path is morphosyntactically outside Place. These studies generally adopt a cartographic approach and reach fairly convergent conclusions: phrases composed of spatial prepositions, adverbs, particles, and DPs do not instantiate different structures but merely spell out different portions of one and the same articulated configuration. (Cinque & Rizzi 2010: 3)

Among others, Koopman (2000) contributes the first elaborate cartographic analysis of the fine structure of PPs based on an in-depth study of Dutch. In addition to postulating a PlaceP hosting stative prepositions inside a PathP hosting directional prepositions, her proposal offers evidence for a number of functional projections between the two and above PathP to make room for the movement of *er* pronouns, degree phrases, and other modifiers. Based on Koopman's work, Den Dikken (2010) refines in various ways the structure and derivation of the lexical and extended functional projections of stative and directional Ps and draws a parallel with the lexical and functional structure of clauses and noun phrases. He particularly lays out the base structure and syntactic derivation of locative (stative) and directional pre-, post-, and circumpositional phrases and discusses the restrictions on movement within and out of the (extended) projections of P_{Loc} and P_{Dir} . (Cinque & Rizzi 2010: 12)

Svenonius (2010) brings evidence from English for an extended projection of PPs that looks very much like Koopman's and Den Dikken's structural hierarchy for the Dutch PP in the richness of the structure postulated.

He considers four classes of P elements in English, which are shown below:

- (1) Projective P: behind, in front of, inside, outside, above, below and beyond.
- (2) Bounded P: among, between, next to, beside, upon, near, against.
- (3) Extended P: around, through, across, along, over, under, past.
- (4) Particle P: up, down, on, off, in, out away

Like others, he posits that there is at least roughly a category *Path* over a category *Place* in a functional sequence. The category **Path** is postulated for prepositions like *to* and *from*; and a category **Dir** is proposed for the particles.

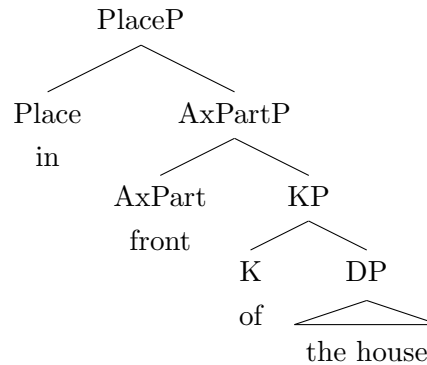
Moreover, *PlaceP* can be further decomposed into a series of functional categories, forming a hierarchy as such: p-Deg-Deix-Loc-AxPart-K. **K** is for functional prepositions and case markers, manifested by a genitive marker in many languages (as with English *of* in *out of the box*). **AxPart** is for shape characteristics of the ground, manifested by elements such as *front* in the complex expression *in front of*. **Loc** is for mapping grounds to vector spaces. **Deg** is for constructing regions on the basis of vector spaces. **p** is for expressing the configurational relation between the figure and the space. In particular, **Deix** is postulated for introducing deictic information about proximity to a contextual centre. This is empirically motivated by other languages such as Korean. In Korean, a demonstrative can be added to a PP structure, thereby adding a proximal or distal interpretation, as exemplified in (132).

- (132) Ku sangca-nun oscang ce mit-ey twu-ess-ta.
 the box-TOP chest DIST bottom-LOC place-PAST-DC
 ‘I put the box over there under the chest.’

(Son 2006)

Svenonius also suggests that not all the adpositions project all these projections. For example, *Deg* and *Loc* are present at least in all projective adpositions, and *AxPart* and *K* are present at least in all adpositions that presuppose something about the axial structure of the ground reference object. As an example, (133) shows the articulated *PlaceP* analysis of the English PP *in front of the house*:

(133)



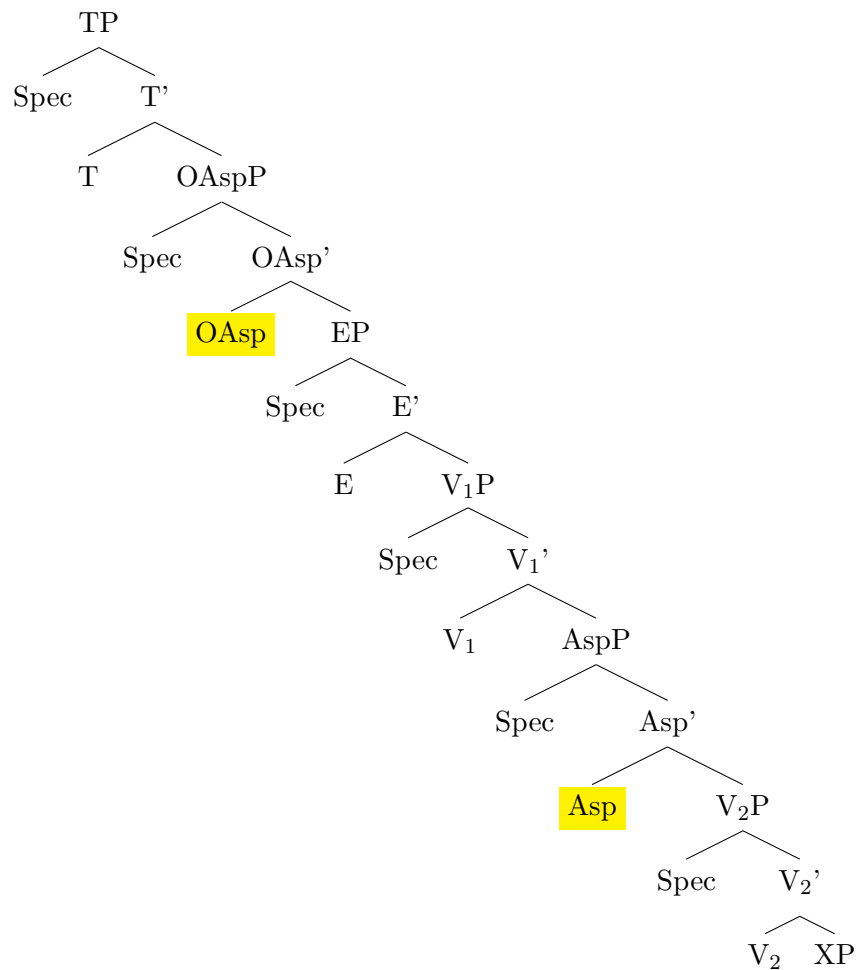
The PathP in our theory is similar in nature to the PathPs proposed in the Spatial Ps literature. Although we do not mention PlaceP in the theory, we do acknowledge the consensus that PathP dominated PlaceP. It is just for the sake of simplicity that we do not show PlaceP in our articulated structure. Besides, our DeicP is similar to Svenonius' DeixP in terms of function, i.e. introducing deictic information about proximity to a contextual centre, although their merging positions in syntax are different. Svenonius's DeixP is one of the projections in the hierarchy while my DeicP is an adjunct which can be adjoined to ResP or PathP. Last but not least, the articulated structure we propose in this thesis is essentially sympathetic to the cartographic approach adopted in these studies. They all seek to pursue a very refined decompositional approach, differing in that one is in the VP domain while the other is in the PP domain.

3.3.2.4 IAspP

As I introduced in the beginning of Section 3.3, IAspP is postulated for calculating the telicity value. This idea originally comes from Travis (2010).

It is well known that the aspect system of human languages consists of two types of aspect, which are viewpoint aspect (grammatical aspect) and situation aspect (aktionsart) (Smith 1997). Travis (2010) proposes that both viewpoint aspect and situation aspect are realized in syntax. She proposes a structure as in (134).

(134) Travis' proposal



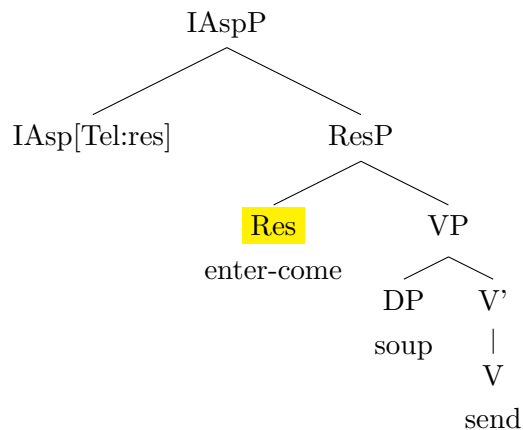
(Travis 2010: 5)

There are two VP shells, in the sense of Larson, which Travis labels as V_1 and V_2 . V_1 introduces the external argument and V_2 introduces theme and the endpoint of the event, XP. Above the VP shells is a functional category EP (EventP), which represents the boundary between L-syntax and S-syntax in Hale and Keyser's sense. The viewpoint aspect is realised as the functional category OAsp, taking scope over the whole event. In between the VP shells, there is another functional category Asp. According to Travis, both Asp and V_1 are correlated with the situation aspect. In specific, V_1 is encoded with the feature [+/- process] while Asp is encoded with the feature [+/- definite] (or [+/- telic]). Different combinations of these features result in the situation types such as activities, accomplishments, achievements and states.

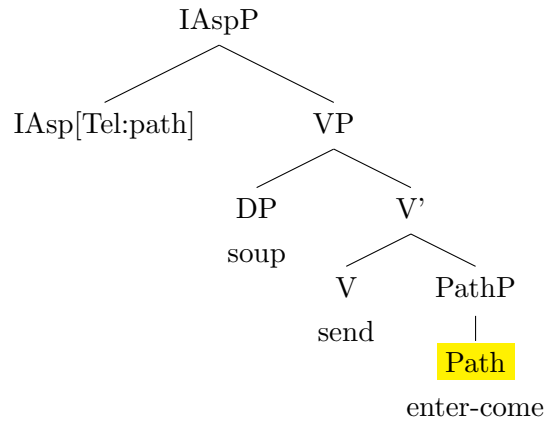
Travis further posits that the value of ASP is particularly complex as it itself requires a computation of the elements within its domain. This domain is within the projection of ASP and includes the specifier of AspP, the head of its complement, i.e. V_2 , and the complement of the head of its complement i.e. XP (Travis 2010: 10). However, she claims that the material in the logical object position, [Spec, V_2 P], is not visible for the computation of telicity. In order for a Theme to be able to measure out a predicate, it must have moved to [Spec,ASP] (or, perhaps, have entered into an AGREE relationship with ASP) (Travis 2010: 118).

I adopt Travis' idea that situation aspect is realised as some functional heads in syntax and that telicity is a complex value calculated with a few elements. The IAsp proposed in this thesis is similar to the Asp in Travis' system. Its position is also between the VP shells (in our system, between VP and vP). And it is also correlated with telicity. And I posit that IAsp bears an unvalued feature [Tel:], which can be valued by the elements in its domain including Res, Path and Realise. When Res values it, [Tel:Res] is interpreted as telic in semantics; when Path values it, [Tel:path] yields atelic reading; when Realise values it, [Tel:realise] yields telic reading. This accounts for the observation that the VVO type of variants are telic while the VOV type of variants are atelic. (135) and (136) highlight the functional heads that contribute to the value of telicity.

(135)

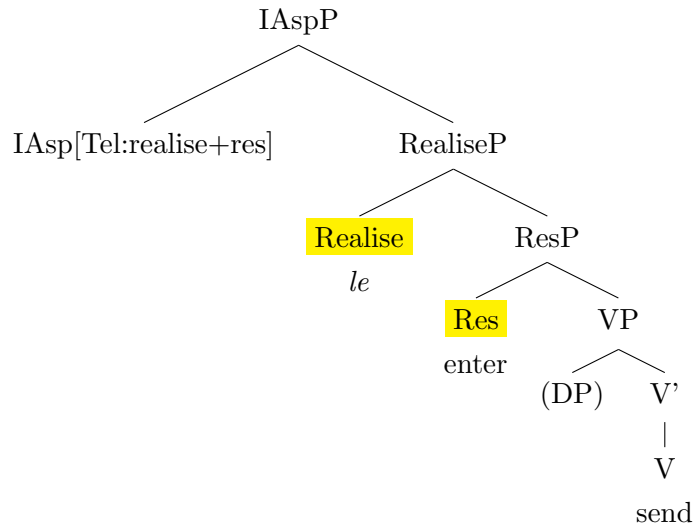


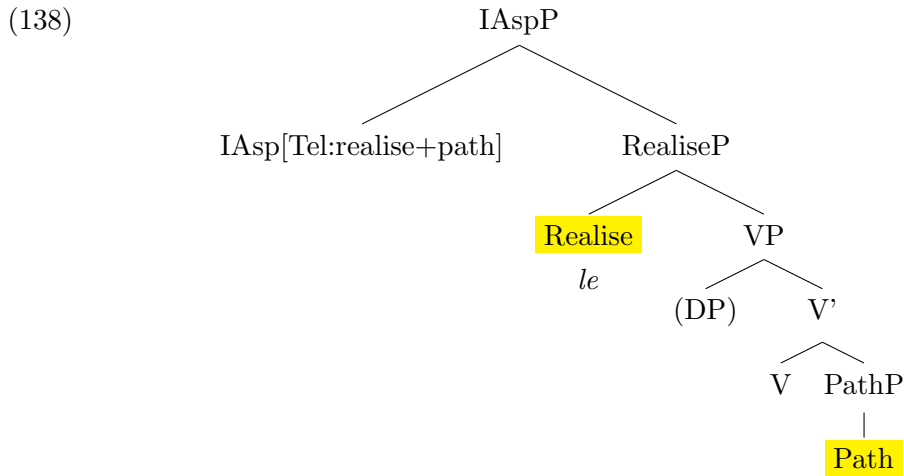
(136)



Another element that can contribute to the value of IAsp is Realise^o which is for the insertion of *le*. We have seen in Chapter 2 that when *le* is added to the atelic variants, they become telic. To account for this, I postulate that Realise offers a [Realise] value to the [Tel:] feature on IAsp. Together with the values received from Res or Path, the [Tel:] can receive a value bundle [Tel: Res+Realise] or [Tel: Path+Realise], both of which lead to telic interpretation. (137) and (138) show the valuation of [Tel:] when *le* is inserted.

(137)





3.3.2.5 Comparison with Verb-Particle Constructions

One of the key observations in this thesis about the word order alternations in Mandarin is the subtle interpretation difference between the variants. This difference is captured by the proposed theory. Similar accounts are found in the area of verb-particle constructions.

Verb particle constructions (also known as ‘phrasal verbs’) are collocations of a verb and another element, for example ‘call up’. These constructions are productive and well discussed in the Germanic languages. One key problem discussed by many is the word order alternation available in this kind of constructions. For example,

- (139) a. John looked the information up.
 b. John looked up the information.

Many of the old solutions just focused on transforming one order to another, without addressing the difference between the variants. For example,

Kayne (1985) opts for an analysis that (139-b) is derived from (139-a) through the extraposition of the subject NP of the particle-headed SC, as in (140):

- (140) They looked [_{SC} <the information> [_{PP} up]] the information.

Baker (1988), in contrast, proposes another option that (139-b) is derived from (139-a) by moving the particle into the verb (head incorporation), as in (141):

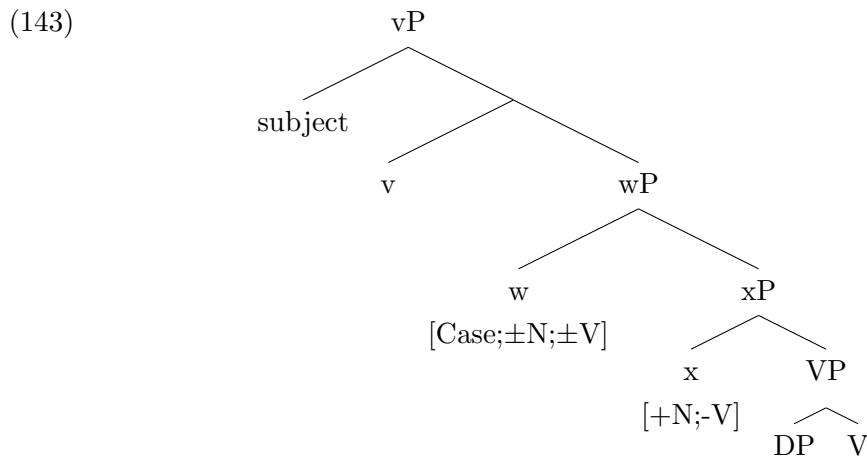
(141) They [_v looked up] [_{sc} the information [_{pp} <up>]]

Den Dikken (1995) criticizes Kayne's and Baker's analysis and suggests that (139-a) is derived from (139-b). Because the particle is ergative, the word order in (139-a) is then obtained via NP-movement of the particle's complement into the subject position of the particle-headed SC, as in (142):

(142) They looked [_{sc} [_{NP} the information] [_{pp} up <the information>]]

All of these approaches start off on the premise that the particle in these constructions is the predicate of a SC in the complement of the verb.

Nicol (2002), however, proposes a very different solution, called the Extended VP-Shell Hypothesis (EVPS) which is shown in (143).



The EVPS endorses the hypothesis of a causative/agentive light verb *v*, and adds two more light heads, which appears as a modified version of Larson's (1990) initial proposal. Departing from Larson, the EVPS dispenses with thematic hierarchies. According to Nicol, "The two heads *w* and *x* are canonical projections of verbal Aktionsart, and thereby stand in a relationship of mutual s-selection with the verb. The light node *w* is preferably linked with subparts of the verb's conceptual structure denoting directional/ possessional content, while *x* expresses resultative/stative aspect." (Nicol 2002: 166)

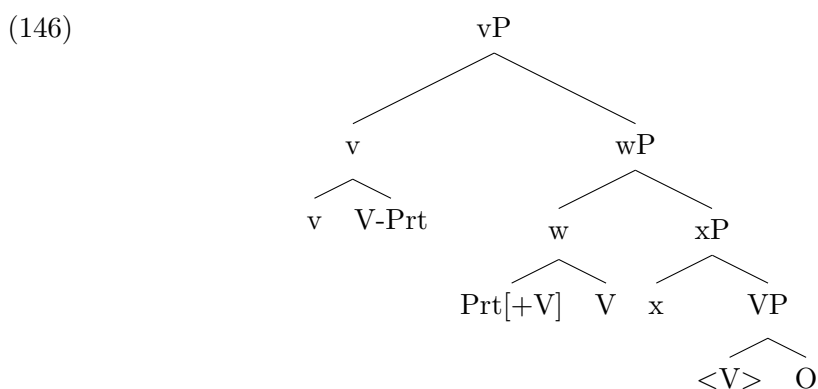
The light verb *w* is the key to the derivation of the two word orders. The EVPS assumes that the particle is asserted under *w*, and that particle insertion comes along with a formal checking feature that is either nominal or verbal. In other words, particles are considered to be alternatively nominal or verbal according to Nicol, who comes to this assumption based on the empirical fact that particles can occasionally be nominalized or made into verbs. For example:

(144) They did not know the ins and outs of the Minimalist Program.

(145) We upped the ante.

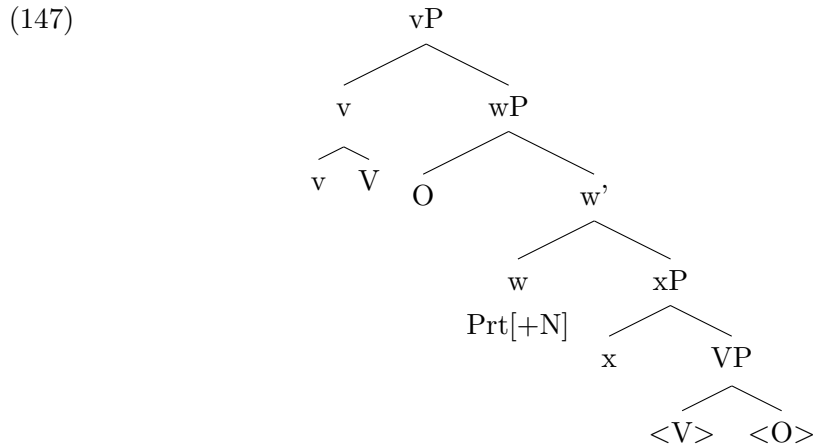
(Nicol 2002: 168)

When the particle is marked with the verbal feature $[-N, +V]$, *V* raises to *w*, the formal feature under *w* is erased, then the [*V* particle] complex raises to *v*, deriving the ‘*V* *Prt* *O*’ order, as is shown in (146)¹³:



¹³Nicol later points out that unlike English where *V* cyclically raises to *w* then to *v*, in Swedish *V* directly moves to *v*. I will show the tree diagram for Swedish in (149-a).

When the particle is assigned with the nominal feature [+N,-V], it can trigger the movement of the closest noun phrase in the VP, deriving the ‘V O Prt’ order, as is illustrated in (147):



As we can see, the particle is inserted with the nominal checking feature. The first available nominal, the direct object, raises to the Specifier of *w*, erasing the checking feature, then *V* raises to *v* in one step.

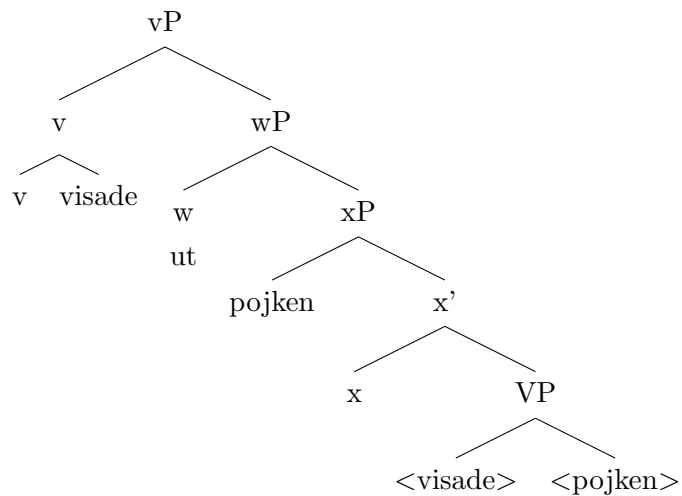
Another interesting point to us that Nicol makes is that in Swedish, the ‘V Prt O’ order is directional and resultative while the ‘V O Prt’ order is only directional. As is shown with his examples:

- (148) a. Maria visade ut pojeken.
 Maria showed out.directional/resultative boy.the
 ‘Maria showed the boy out.’ (made him/told him to leave)
- b. Maria visade pojken ut.
 Maria showed boy.the out.directional
 ‘Maria showed the boy out.’(in a friendly way)
- (Nicol 2002: 179-180)

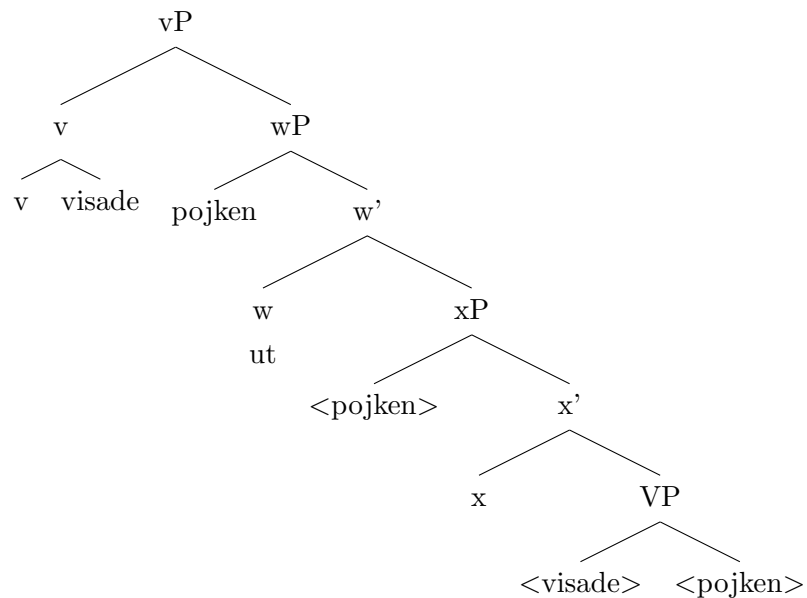
As Nicol points out, (148-a) means that Maria made the boy leave the house, that is, “the particle denotes the end state which is a result of the activity denoted by the verb”. On the other hand, (148-b) “implies only that Maria showed the boy how to find the exit, but the boy did not necessarily leave right away and the fact that he exited the house is not asserted”. This description is highly similar to the telicity difference in the Mandarin data.

Nicol accounts for this semantic divergence by positing another functional head, *x*, located between *w* and VP, which is already shown in (143). According to Nicol, *x* expresses resultative Aktionsart and it can check EPP feature. *x* is assumed to have EPP feature, hence the object needs to raise to the Spec of *xP*. The presence of the object in the Specifier of *x* in (149-a) ensures resultative Aktionsart, while the raising operation to the Specifier of *w* in (149-b) forces a directional reading.

(149) a.



b.



Nicol's proposal on verb particle constructions, namely EVPS, is interesting in that it does not simply derive one order from the other. He also notices the two different readings (directional and resultative) correlated with each variant,

which is overlooked by other studies on Verb Particle Constructions. This observation is similar to my telic/atelic account for the word order variants. And the analysis which postulates functional heads and movement to derive the meanings is also similar in essence to the approach in this thesis.

3.4 Summary

In this Chapter, we first reviewed three previous approaches to account for the word order alternation observed with Mandarin DSVCs. We came to the conclusion that they are oversimplified and cannot capture the syntactic and semantic divergence between each variant.

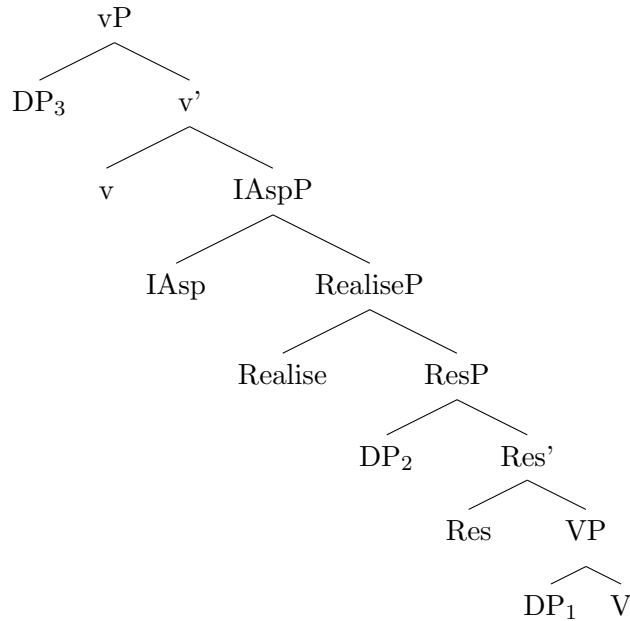
Then we reviewed Ramchand's theory of first phrase syntax which decomposes the traditional verb category into a maximum of three projections, including *initP*, *procP* and *resP*. The traditionally viewed arguments of the verbs are also dispensed over the specifier positions of these projections as the participants of the relevant event.

Based on the Ramchand's idea of verb decomposition as well as the studies concerning resultative structures, aspect marker *le*, spatial PP, syntactic representation of situation aspect and particle verbs, I proposed an articulated structure in which VP is sandwiched between a series of functional projections, together with a set of mechanisms regarding the lexical item insertion, head movement and telicity calculating. I close this chapter by summarising the main proposals I have provided so far in the following sections.

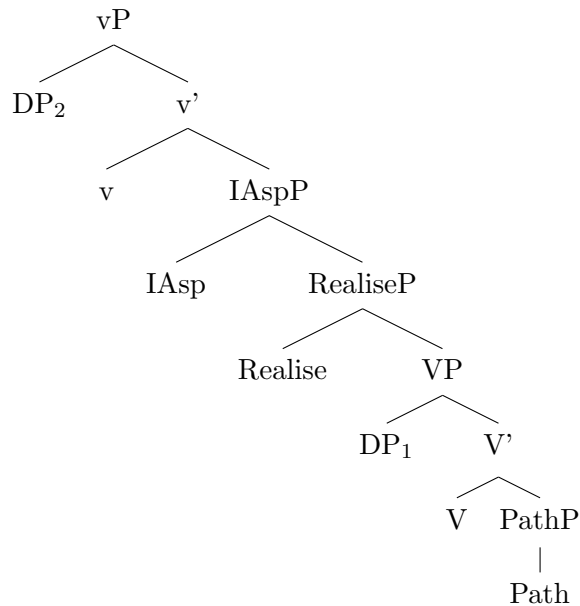
3.4.1 Two Structures

The word order alternations observed with Mandarin DSVCs are instantiation of two types of structures generated by the syntax module. The VVO type of DSVCs are instantiation of the Res structure (as in (150)) while the ones of the VOV type have the Path structure (as in (151)).

(150) Res structure



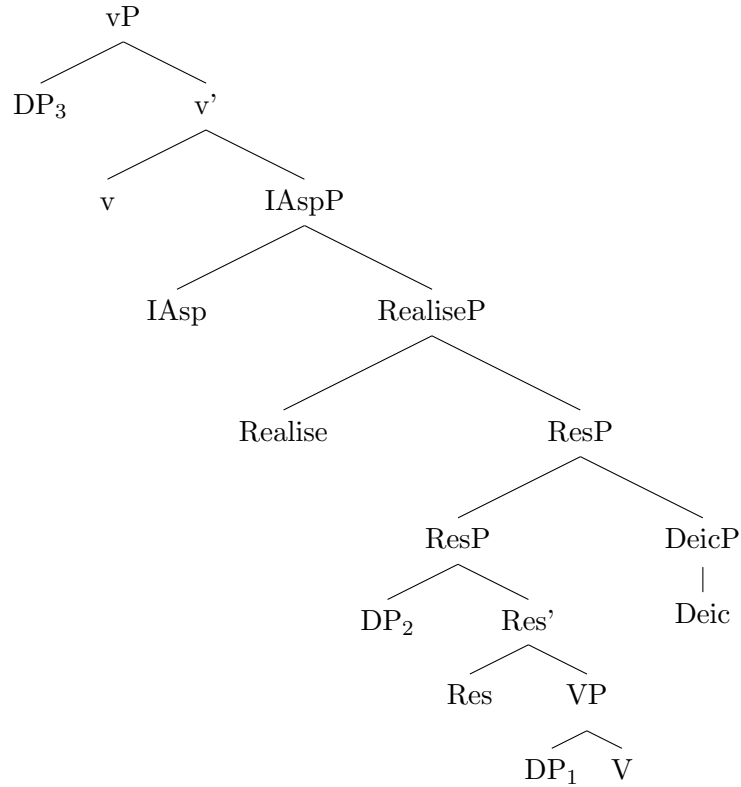
(151) Path structure



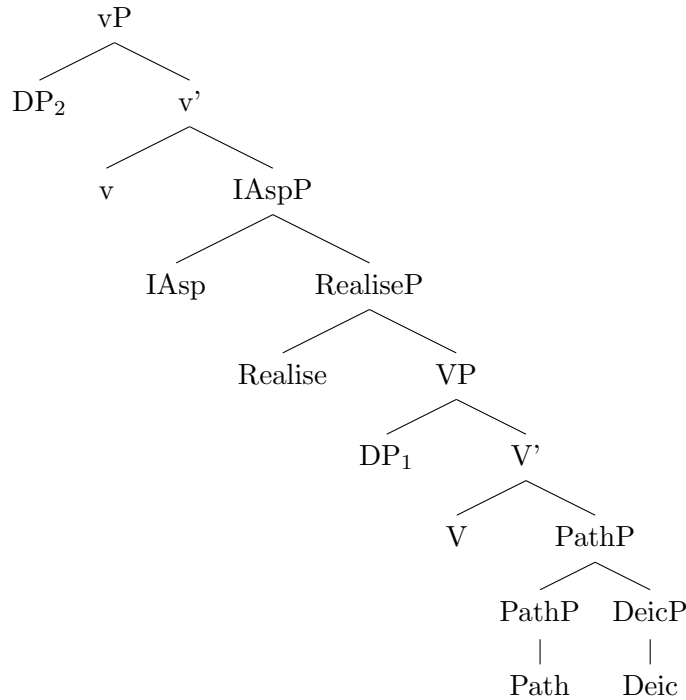
Specifically, VP is paralleled with Ramchand's *procP*, which signifies the core of the event. Likewise, vP is paralleled with *initP* and ResP with *resP* in Ramchand's sense. Apart from the sub-evental projections, I propose two more functional heads in the hierarchy, i.e. *RealiseP* and *IAspP*. *RealiseP* is an optional projection and it is the position to insert the so called perfective aspect marker *le*. *IAspP* is the place to calculate telicity and it is always projected.

Optionally a DeicP can be attached to the ResP or PathP as an adjunct. Semantically, DeicP adds a piece of deictic information to the semantics construed by ResP and PathP. The Res/Path structures with a DeicP adjunct are represented in (152) and (153).

(152) DeicP adjoined to ResP



(153) DeicP adjoined to PathP



The structures are generated prior to the lexical item insertion. The choice of the structure is decided by the conceptual system. If the conceptual system wants to express a result, the Res structure, namely (150) is build up; if the conceptual system wants to express a moving track, the Path structure, namely (151) is generated. The conceptual system also determines whether the deictic information is needed. If the deictic information is meant to be expressed, (152) or (153) are generated.

The basic idea is that in Chinese the three sub-events are not always realised by one single verb, which is the case in English in Ramchand's system. Specifically, if the sentence contains a single verb, as in (154), the single verb will be decomposed into these sub-evental projections, just as English. We will look at the decomposition of (154) in detail in Section 4.1.1.

(154) Ta jin le fangjian.
 3sg enter ASP room
 'S/He entered the room.'

However, when the sentence contains serial verbs, the sub-events are realised by the composing members in the serial verbs.

3.4.2 Lexical Item Insertion Mechanism

Once the construction is built up, the lexical items are inserted into the nodes. In this theory, the insertion of the lexical items is regulated by features on the syntactic nodes as well as the features on the lexical items. The mechanism includes two rules:

(155) Lexical Item Insertion Mechanism

Rule 1: If a lexical item M shares the same categorial feature as a syntactic node X , then the lexical item M is able to be inserted under the node X .

Rule 2: A lexical item M has a series of semantic features encoding its root meaning. If one of these features can be identified by a feature on a syntactic node X , then the lexical item M is able to be inserted under the node X .

Based on these rules, the displacement/motion verb is inserted under V because of the same categorial feature. The $V_{\text{gen}s}$ can be under Res or Path because they bear semantic features $[\text{goal}]$ and $[\text{track}]$, which are identified by the feature on the nodes Res and Path respectively. The $V_{\text{deic}s}$ can be under Res or Deic because they bear the semantic feature $[\text{goal}]$ and $[\text{deictic}]$ which can be identified by the feature on Res and Deic respectively.

Table 3.2 summarises the insertion options for the verbs in the Mandarin DSVCs.

Table 3.2: Insertion rules of the verbs in Mandarin DSVCs

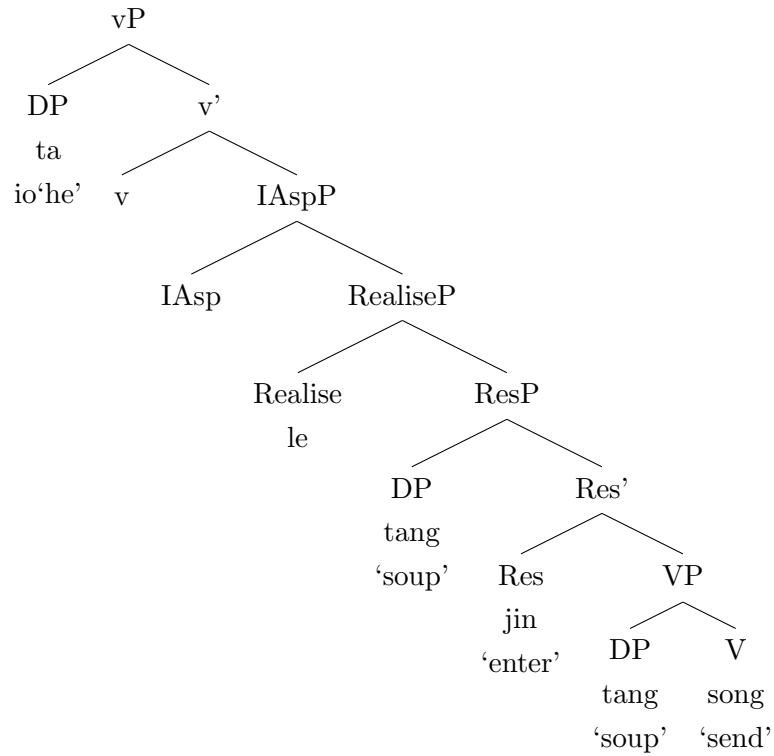
Type of lexical item	Insertion position
$V_{\text{dis}}/V_{\text{m}}$	V
V_{gen}	Res/Path
V_{deic}	Res/Deic

Note that $V_{\text{gen}s}$ and $V_{\text{deic}s}$ have 2 insertion options. This does not mean that in a particular structure, $V_{\text{gen}s}$ and $V_{\text{deic}s}$ can be inserted in either position.

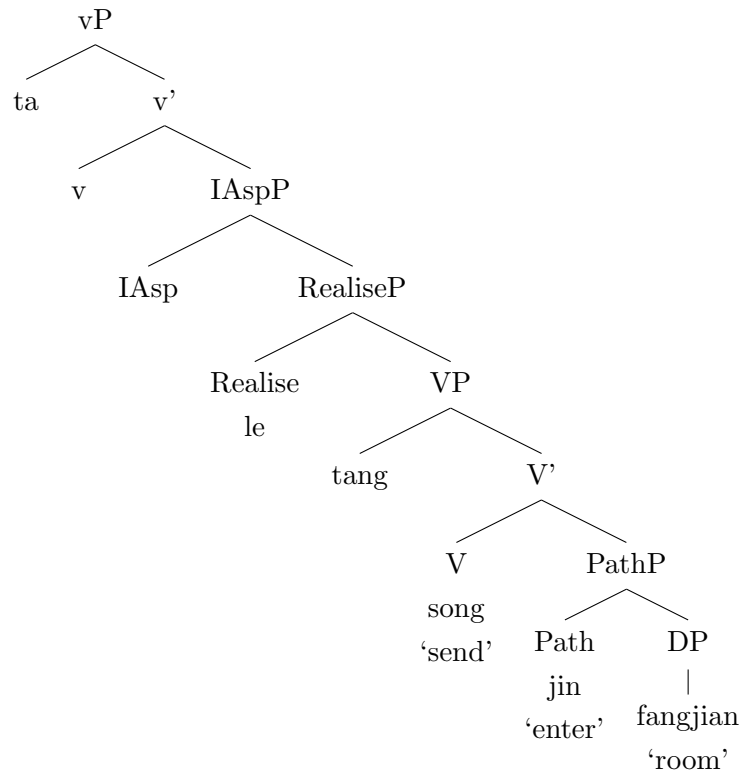
First, since ResP and PathP can not co-occur, V_{gen} s do not face the problem of deciding which node to insert itself. In a Res structure, they are under Res while in a Path structure, they are under Path. In other words, the V_{gen} in a VVO type of DSVC is under Res because by assumption a VVO type of DSVC has a Res structure underlyingly. Whereas the V_{gen} in a VOV type of DSVC is under Path. (156)-(159) illustrate the two cases of V_{gen} insertion.

(156) Ta song jin le tang
he send enter ASP soup

(157) V_{gen} under Res



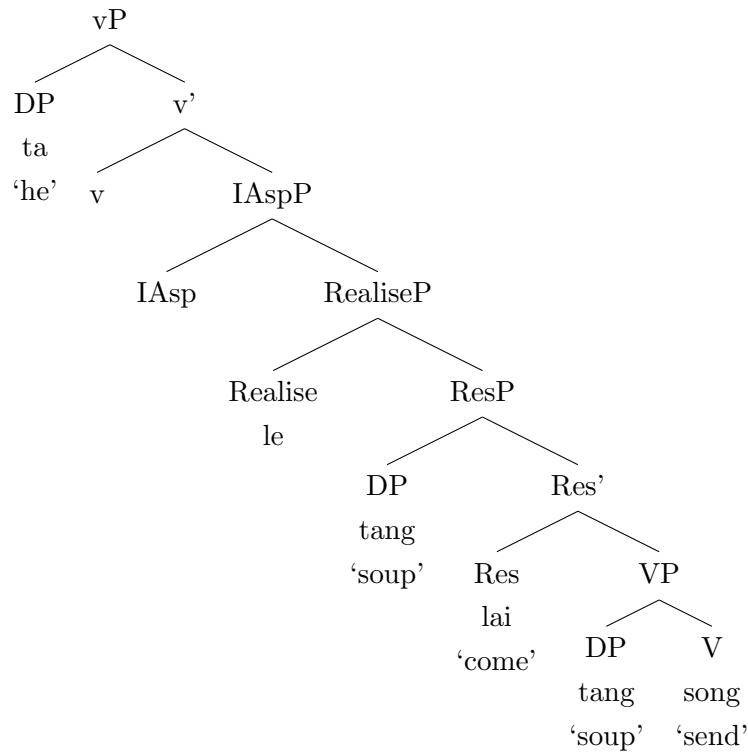
(158) Ta song le tang jin fangjian.
he send *le* soup enter room'

(159) V_{gen} under Path

Second, V_{deic} s also have two options, Res and Deic. The surface position of V_{deic} suggests the insertion option. Specifically, we have observed three kinds of position of V_{deic} s within a DSVC: (1) directly following $V_{\text{dis}}/V_{\text{m}}$ (e.g. *song lai* ‘send come’, *zou lai* ‘walk come’); (2) directly following V_{gen} (e.g. *jin lai* ‘enter come’); (3) separated from the other verbs by an object or a locative object (e.g. *song tang lai* ‘send soup come’, *song jin tang lai* ‘send enter soup come’)

The V_{deic} directly following the co-event verb is under Res because this is a VVO type which entails a Res structure. As is shown in (160)-(161), *lai* is the only element in the DSVC which is able to be inserted under Res, so *lai* is inserted under Res.

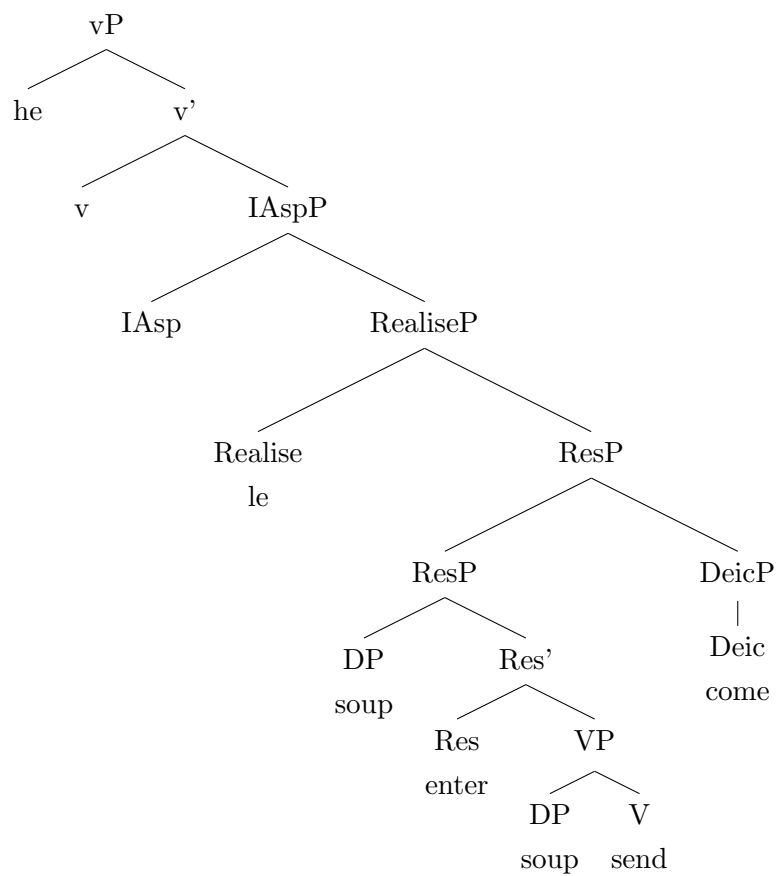
(160) Ta song lai le tang.
he send come le soup

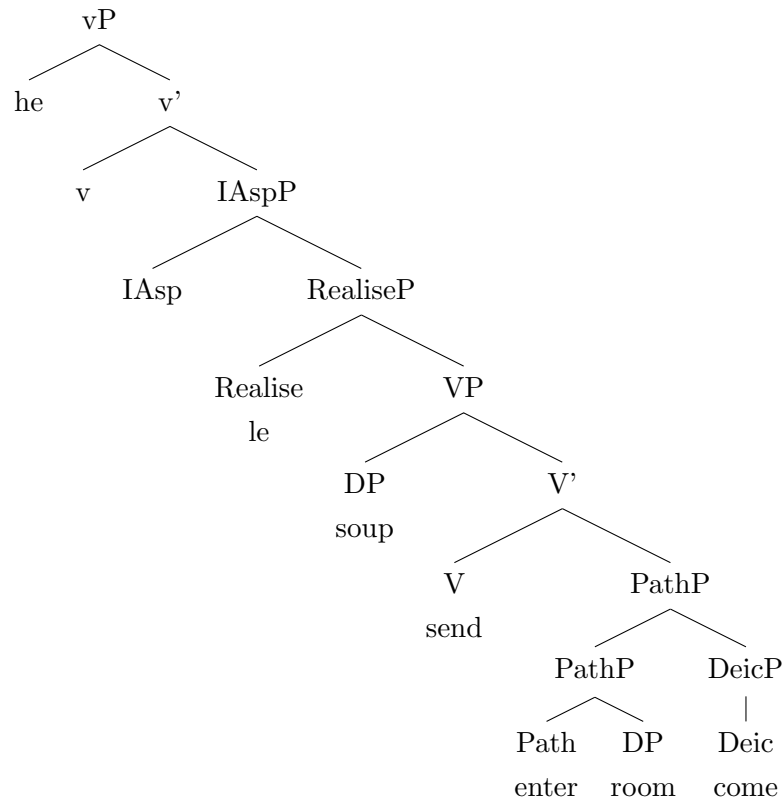
(161) V_{deic} under Res

The V_{deic} separated from a V_{gen} by an object or locative DP is under Deic. This is because in these cases the V_{deic} s are omissible without changing the core meaning. Besides, in these cases the V_{gen} have the potential to be inserted under Res/Path, hence syntax optimally insert V_{gen} under Res/Path, and V_{deic} under Deic, to guarantee all the heads get a lexical item.

(162)-(163) illustrate the case where V_{deic} *lai* is under the DeicP adjoined to ResP and (164)-(165) the case where V_{deic} *lai* is under the DeicP adjoined to PathP.

(162) Ta song jin le tang lai.
he send enter *le* soup come

(163) V_{deic} under DeicP adjoined to ResP(164) Ta song le tang jin fangjian.
he send *le* soup enter room

(165) V_{deic} under DeicP adjoined to PathP

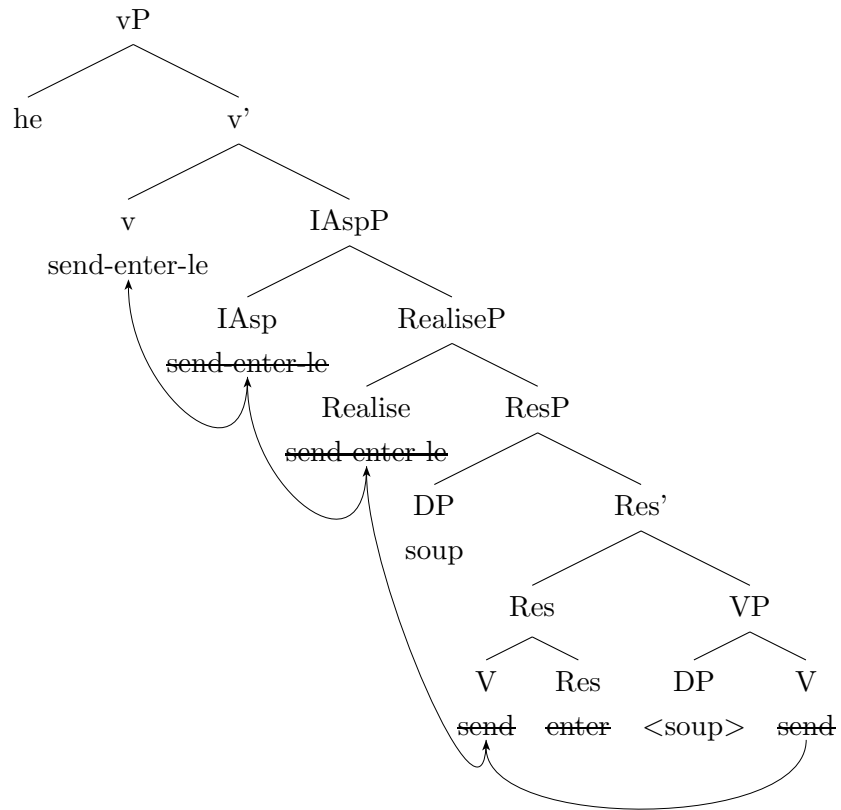
As for the V_{deic} s directly following V_{gen} , namely the $V_{\text{gen}} V_{\text{deic}}$ clusters, I address the solution in Section 4.1, where more properties of these clusters are explained.

3.4.3 Head Movement

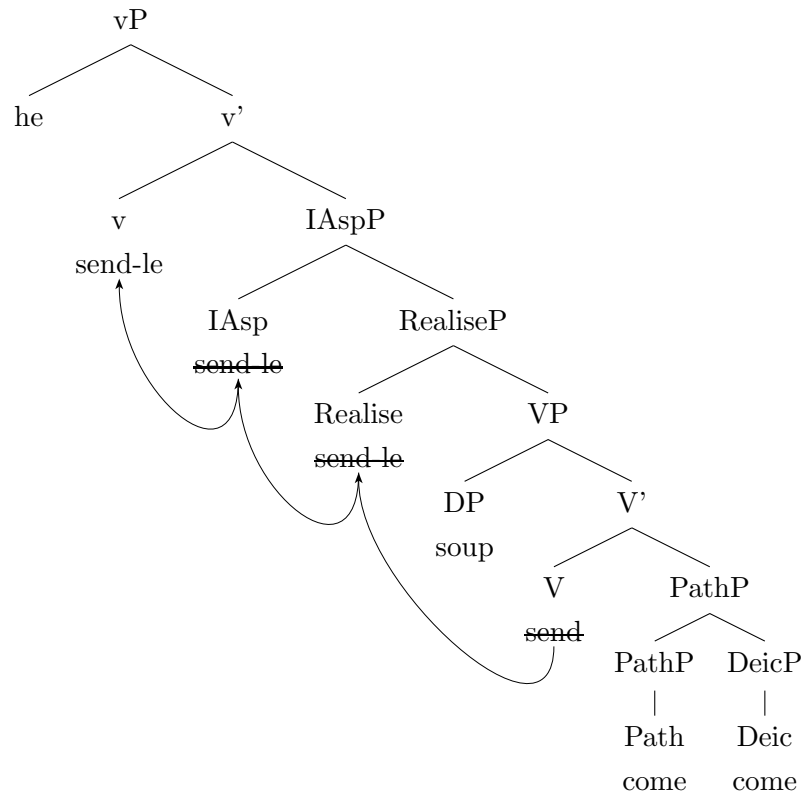
The surface word order is derived by head movement. The proposal is that in a Res structure, V moves to Res because of a strong feature $[uV^*]$ on Res. And then the head Res together with the head V adjoined to it keeps moving cyclically to the higher functional heads Realise, IAsp and v, picking these heads along the way. However, in a Path structure, Path does not move up to V because V does not have a $[uPath^*]$ feature. Besides, I followed the way that Ramchand deals with the spell out of the event participants, namely the specifiers of VP(procP), ResP(resP) and vP(initP): if a certain DP is involved with more than one sub-event, it is only pronounced at the highest position.

(166) and (167) demonstrate the head movement. Note that arrows show the movement while $\langle \rangle$ denotes the unpronounced event participant.

(166) Head movement in the Res structure



(167) Head movement in the Path structure



3.4.4 Mechanism for Telicity Calculation

Last but not the least, I posit that *IAsp*, the telicity calculator, bears an unvalued feature $[Tel:]$ which can receive value from *Res*, *Path* and *Realise*. The value from *Res* or *Realise* leads to telic interpretation, while the value from *Path* leads to atelic interpretation. When *RealiseP* is projected, the $[Tel:]$ feature receive a value bundle coming from *Res/Path* and *Realise*. The *Realise* value overrides the *res/path* value, which means it will always give telic interpretation if $[Tel:]$ has a *Realise* value. This assumption will be further exemplified in Section 4.3.2.

In the next chapter I apply this theory to account for each serialising pattern of the Mandarin DSVC. We will see how the puzzles we addressed in Chapter 2 are explained in such a system. Meanwhile, the theory will also be refined to suit the complicated data.

Chapter 4

Deriving the Directional Serial Verb Constructions

In Chapter 2, we have investigated seven serialising patterns of Mandarin directional serial verb constructions, repeated below:

- a. $V_{\text{gen}} + V_{\text{deic}}$
- b. $V_{\text{m}} + V_{\text{deic}}$
- c. $V_{\text{m}} + V_{\text{gen}}$
- d. $V_{\text{m}} + V_{\text{gen}} + V_{\text{deic}}$
- e. $V_{\text{dis}} + V_{\text{deic}}$
- f. $V_{\text{dis}} + V_{\text{gen}}$
- g. $V_{\text{dis}} + V_{\text{gen}} + V_{\text{deic}}$

These serialising patterns can be divided into three subgroups according to the type of the first verb in the string. We find in each subgroup a few puzzles, which are summarised below:

1. DSVCs starting with V_{gen} (pattern (a))

The verb string $V_{\text{gen}} V_{\text{deic}}$ demonstrates controversial properties between a compound and a phrase. On the one hand, they disallow the aspect marker *le* to be inserted in the middle and they do not require a locative object although V_{gen} themselves require one when they are used alone. Besides, locative objects are even barred after the verb sequence. These properties seem to suggest

that the verb clusters as a whole are intransitive compound verbs. On the other hand, the cluster $V_{\text{gen}} V_{\text{deic}}$ allows a locative object or/and potential morphemes to appear in the middle and when this happens, *le* can follow V_{gen} as well. These behaviours critically challenge their wordhood.

2. DSVCs starting with V_{m} (pattern (b-d))

Two findings need to be accounted for. Firstly, the locative object tends to follow V_{gen} rather than V_{deic} , which is actually not restricted in pattern (b-c), but observed through out all types of DSVCs. Besides, V_{gen} s compulsorily takes a locative object if they are at the end of the sentence. Secondly, *le* is not possible to occur after V_{m} in pattern (b) and (c), but it is possible in (d).

3. DSVCs starting with V_{dis} (pattern (e-g))

(1) Pattern (e) and (g) allow the direct object to appear after each verb respectively in the verb strings, hence creating multiple word orders, which resembles the multiple argument realisation mentioned in Chapter 1. More importantly, we find that the word order variants differ in the following perspectives: telicity, interaction with *le*, negation and potential morphemes.

(2) Pattern (f) only allows the word order of $V_{\text{dis}} V_{\text{gen}} O$. $V_{\text{dis}} O V_{\text{gen}}$ is only possible when a locative object is added after the V_{gen} , i.e. $V_{\text{dis}} O V_{\text{gen}} \text{LocO}$ is grammatical. The V_{gen} s are often interpreted metaphorically, but this is only possible with the $V_{\text{dis}} V_{\text{gen}} O$ order, not the $V_{\text{dis}} O V_{\text{gen}} \text{LocO}$ order.

In Chapter 3, I propose a hierarchical structure in which the VP is sandwiched between a series of functional projections.

In this chapter I shall show how we can account for the puzzles found in Chapter 2 with the proposed theory in Chapter 3. Although in Chapter 2 I began presenting the data from the more complicated patterns (e)-(g), I shall start demonstrating my analysis from the simplest pattern. Section 4.1 discusses the issues related to the serialising pattern (a), i.e. $V_{\text{gen}} V_{\text{deic}}$. Section 4.2 investigates the serialising patterns beginning with an intransitive motion verb, i.e. patterns (b)-(d). Section 4.3 and Section 4.4 discuss the serialising patterns beginning with a displacement verb, i.e. patterns (e)-(g). In particular, Section 4.3 deals with the word order alternation problems posed by the DSVCs of pattern (e) and (g). Section 4.4 looks into the non-alternation pattern (f).

4.1 $V1=V_{gen}$

We have seen in Section 2.4.1 that the serialising pattern (a), $V_{gen} V_{deic}$, such as *jin lai* ‘enter come’, *chu qu* ‘exit go’, *shang lai* ‘ascend come’, *xia qu* ‘descend go’, demonstrate controversial status between a word and a phrase.

Specifically, two properties $V_{gen} V_{deic}$ clusters suggest a word status. First, they disallow the aspect marker *le* to be inserted in the middle:

- (1) *Ta **jin** le **lai**.
 he enter ASP come
 ‘He came in.’

Second, they do not require a locative object (as in (2)) although V_{gen} themselves require a locative object when they are used alone (as in (3)). Besides, locative objects are even barred after the verb sequence (as in (4)).

- (2) Ta **jin** **lai** le.
 he enter come ASP/SFP
 ‘He came in.’

- (3) Ta jin *(fangjian) le.
 he enter room SFP
 ‘He entered the room.’

- (4) *Ta **jin** **lai** fangjian le.
 he enter come room SFP
 ‘He came into the room.’

However, another two properties suggest that these clusters are phrasal. First, potential morphemes are allowed to appear in the middle, as in ??.

- (5) Xiaoming **jin** de **lai** (zhe ge fangjian).
 Xiaoming enter able come this CL room
 ‘Xiaoming is able to enter this room.’

Second, although locative objects are banned after the cluster, they are allowed in between the two verbs. When a locative object occurs between V_{gen} and V_{deic} , *le* can follow V_{gen} as well, as in (6).

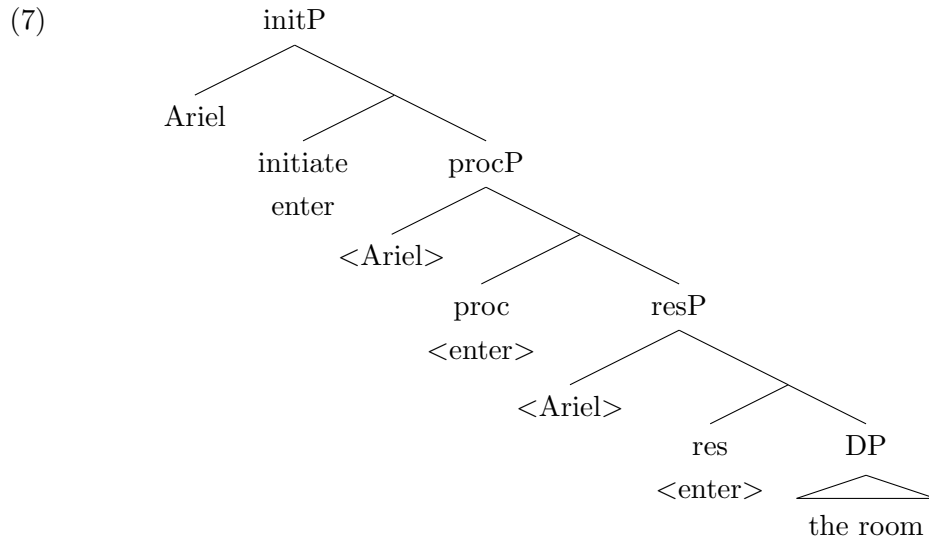
- (6) Ta **jin** le fangjian **lai**.
 he enter ASP room come
 ‘He came into the room.’

In this section, I demonstrate how these empirical facts can be accounted for with our theory in three steps. Section 4.1.1 illustrates how a single V_{gen} is analysed in this system. Section 4.1.2 analyses $V_{\text{gen}} V_{\text{deic}}$ clusters, addressing the distribution of *le* and locative object in this particular serialising pattern. Section 4.1.3 discusses the analysis of the potential morphemes in these clusters.

4.1.1 Decomposing the Single V_{gen}

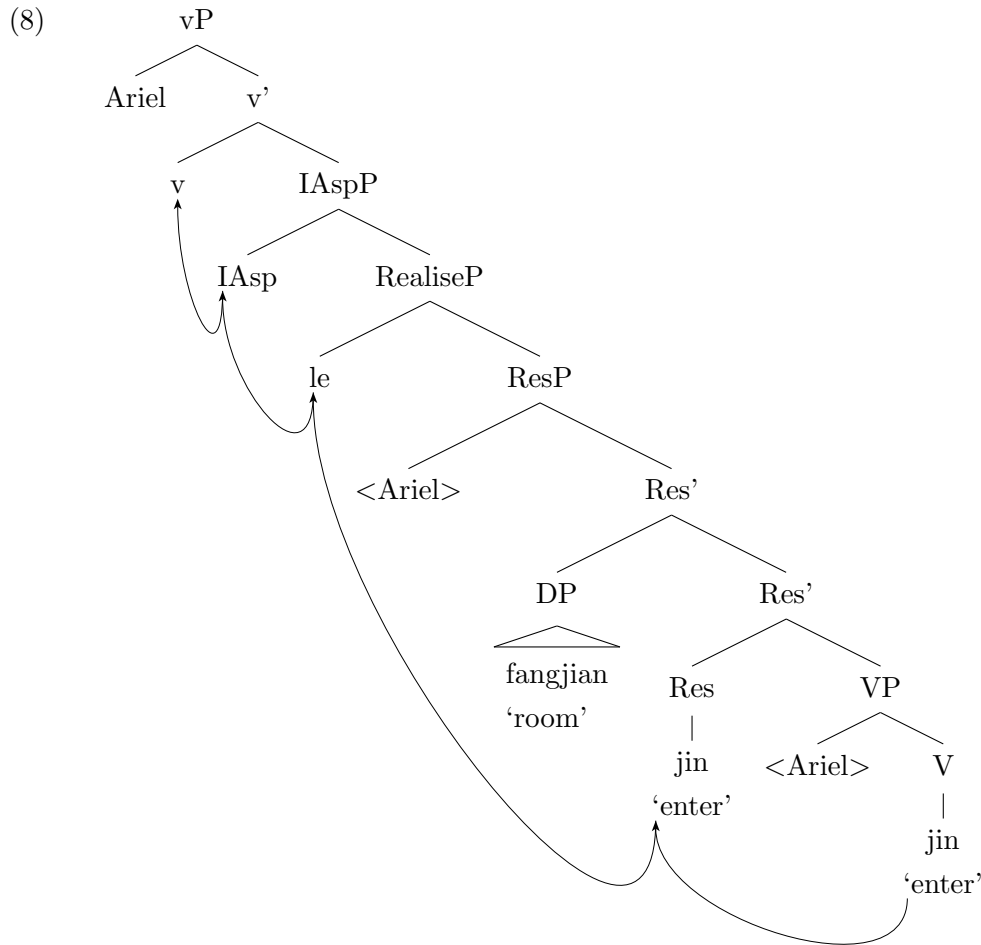
The first question we need to think about is how to account for the fact that the V_{gen} s in Mandarin must take a locative object as in (3). In a traditional lexicalist approach, we can simply assume that the V_{gen} is associated with some selectional features which specify that V_{gen} c-selects a DP and this DP must semantically refer to a place. However, with a constructionist framework, we do not assume the lexical items bear selectional features. Instead we expect the structure to carry the selectional information.

In Ramchand’s system, an English path verb ‘enter’ is decomposed into three projections, which means semantically it involves three sub-events, the tree representation of which is shown in (7). The subject ‘Ariel’ is the initiator as well as the undergoer of the process ‘enter’, and ‘Ariel’ also bears the resultee role of attaining the final location described by the rhematic DP, ‘the room’.



(Ramchand 2010: 76)

Following the proposal in Chapter 3, we can analyse the Mandarin counterpart of ‘enter’, i.e. *jin*, as three projections in a similar fashion to Ramchand’s approach. Leaving aside IAspP and RealiseP for the moment, recall that in my system, the *v*, *V* and *Res* are equivalent to the nodes *Initiate*, *Proc* and *Res* in Ramchand’s system respectively. I have argued that in Mandarin the *ResP* is constructed above *VP* rather than being the complement of *V* (*proc*) as in Ramchand’s structure for English verbs. *Ariel* is the initiator, undergoer and resultee, so it is inserted in the specifiers of the three sub-evental projections. The locative DP *fangjian* ‘room’ is merged as another specifier of *ResP*, lower than the resultee ‘*Ariel*’ (see discussion on the consequence of projecting *ResP* above *VP* in Section 3.3.1.4). The tree diagram for the decomposition of V_{gen} *jin* is shown in (8). Following the head movement rule proposed in Section 3.3.1.4, *jin* under *V* moves up to the *jin* under *Res*, Realise head *le*, and *v* cyclically. The spell-out of the participant roles follows Ramchand’s approach that if a DP serves more than one role, only the highest one is pronounced. In (8), ‘*Ariel*’ is only pronounced at its highest position, i.e. spec of *vP*. The unpronounced participant roles are marked with $\langle \rangle$.



The reason that *jin* or other general directional verbs must take a locative object is explained in the following way. The ResP needs to describe a clear result state of the event, so the lexical items inserted in the ResP should be able to fulfil this task. However, although the root meaning of *jin* entails a destination, it does not clearly specify where the destination is if there is no locative DP. In this case, semantics cannot construe a result state reading. To save the semantics, a locative DP such as ‘room’ is required. Then the ResP can be interpreted as ‘the result state is that Ariel ended up in the room’.

The V_{deic} ‘go’ has similar property while the V_{deic} ‘come’ is different. ‘come’ specifies that the destination is the place where the speaker is in. This means that even when there is no locative DP, the ResP can still construe the result state meaning. And indeed we can see evidence that when used alone, *go* normally requires a locative DP while *lai* can optionally drop it.

- (9) a. ?/**Ta san tian qian qu le.*
 3sg three day before go ASP/SFP
 ‘S/He went three days ago.’
 b. *Ta san tian qian lai le.*
 3sg three day before come ASP/SFP
 ‘S/He came three days ago.’

Note that there are occasionally some cases where a single V_{gen} is really used without a locative object. For example, when watching a football match, people often use the V_{gen} *jin* without a locative object, as in (10). Or when addressing the fact that someone obtained some opportunity, *shang* ‘ascend’ is often used without a locative object, as in (11).

- (10) *Qiu jin le!*
 ball enter ASP/SFP
 ‘Scored!’
- (11) - *Xiaoming de mianshi jieguo zenmeyang?* - *Ta shang*
 - Xiaoming POSS interview result how? - He ascend
 le!
 ASP/SFP
 ‘- How is Xiaoming’s interview result? - He got it!’

These examples suggest that we cannot simply argue that ResP always requires a locative DP to construe the result state reading. There should be alternative ways to compose the result state reading for these cases. My solution for cases as such is that when the Res head is filled by a general directional verb, the semantics first tries to interpret it as a resulted location. If no locative DP is provided, the result location reading fails. But the semantics will not immediately give up. Instead, it would seek a metaphoric/idiomatic way to reinterpret the V_{gen} . If it manages to do so, the sentence can still be felicitous. In the examples (10) and (11), the semantics fails to interpret ResP as a resulted location, but it seeks the alternative way to interpret *jin* ‘enter’ idiomatically as ‘the ball got into the net’, namely ‘score’, and *shang* ‘ascend’ as ‘be accepted’. Semantics cannot always manage to find such a metaphoric/idiomatic reinterpretation, though. Whether the semantics can successfully do so possibly relates to pragmatic reasons: people tend to omit the actual locative object in certain situations because the locative object is clear to the speaker and listener. For example, by saying *qiu jin le* ‘ball enter ASP’ while watching

a football match, the speaker and listener know clearly that the ball entered the football goal rather than other places, hence there is no need to add a locative object *qiu men* ‘football goal’. In other words, *jin* used in *qiu jin le* can directly be interpreted as ‘enter the goal’ by our world knowledge, hence it is possible for ResP to be interpreted as a well defined result state: the ball ended up in the goal. Similarly, the *shang* case in (11) can be understood as omitting a relatively abstract locative object such as ‘the admission list’. In other words, by saying *ta shang le* ‘he ascend ASP’, people are actually saying ‘he got on the admission list of the job’. In other words, *shang* used in the context as (11) automatically obtains the idiomatic meaning of ‘got chosen’. Other than such special contexts, which are rare, single V_{genS} cannot occur without a locative object and be interpreted metaphorically. Therefore, outside the football match context, we have to use *jin* with a locative object and outside the opportunity-obtaining context, we have to use *shang* with a locative object. This explains why using single V_{genS} without a locative object is very restricted.

Note that this section shows that single V_{genS} ’ metaphoric usage is restricted. However, in Section 4.4 where we discuss the serialising pattern $V_{\text{dis}} V_{\text{gen}}$ (e.g. *song jin* ‘send enter’), we will see that V_{genS} directly following a V_{dis} are more commonly observed with a metaphoric interpretation.

4.1.2 Decomposing the $V_{\text{gen}} V_{\text{deic}}$ Cluster

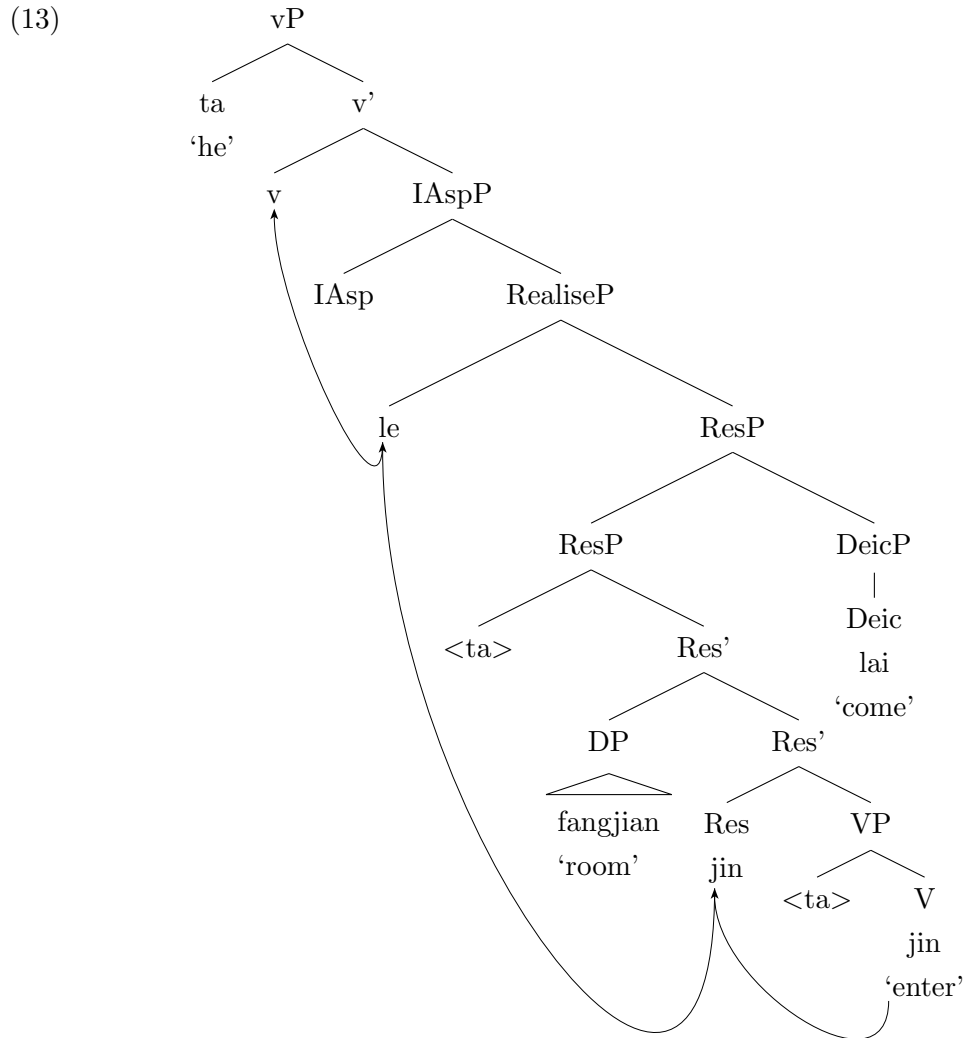
Now we can consider the $V_{\text{gen}} V_{\text{deic}}$ clusters based on the analysis of single V_{genS} .

$V_{\text{gen}} V_{\text{deic}}$ clusters have phrasal behaviours that a locative object and *le* can be inserted between V_{gen} and V_{deic} (the example is repeated in (12)).

- (12) Ta jin (le) fangjian lai.
 he enter ASP room come
 ‘He came into the room.’

(12) can be straightforwardly captured by our theory. As I summarised in Section 3.4.2, V_{deicS} separated from other verbs in the DSVCS are instantiations of DeicP adjunct because V_{deicS} in this kind of position is omissible. In other words, (12) is viewed as adding a adjunct *lai* to the structure for the single predicate sentence *Ta jin (le) fangjian.*, which itself is analysed as a

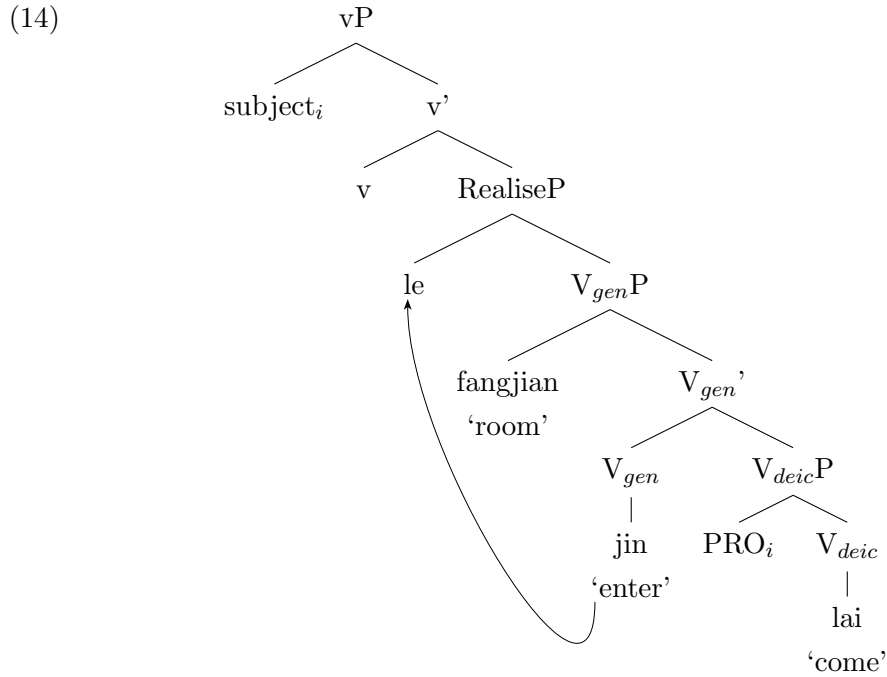
Res structure with *jin* decomposed into the three sub-evental heads, shown in (8). DeicP in our system adjoins to ResP in a Res structure. Therefore, the representation for (12) is illustrated in (13).



After the head movement, we can see that the head of RealiseP, *le*, ends up following *jin* and the locative object *fangjian* follows *le* and precedes *lai*, which is exactly the word order shown in (12).

This approach may be challenged by the claim that this sentence involves argument sharing: *ta* is the argument of both *jin* and *lai*, hence an approach involving PRO can capture the fact better. For example, if we adopt the stacked VP analysis for SVC (see review for Collins and Paul in Section 3.1.2), V_{deic} *lai* merges with a PRO bound by the subject, projecting the lower VP,

noted as $V_{deic}P$. Then $V_{gen} jin$ is merged with the locative object serving as its specifier, projecting the higher VP, noted as $V_{gen}P$. Assuming that the higher verb head raises to $Realise^0$, and to v successively while the lower verb stays in situ, we can derive the surface order and capture the argument sharing at the same time.



However, note that the actual sentence meaning is ‘he entered the room’ with an indication that the movement is towards the speaker. If the sentence indeed involves argument sharing, it should be able to be paraphrased as ‘he entered the room and he came’. However, this paraphrase is not strongly accepted by native speakers. This is different from the *lai* directly following a V_{dis} , e.g. *Ta song lai le tang*. ‘he sent come ASP soup’, which can be paraphrased as ‘he sent a soup and the soup came/arrived’. In other words, ‘send come soup’ indeed involves argument sharing. However, there is no strong evidence suggesting that (12) also involves argument sharing.

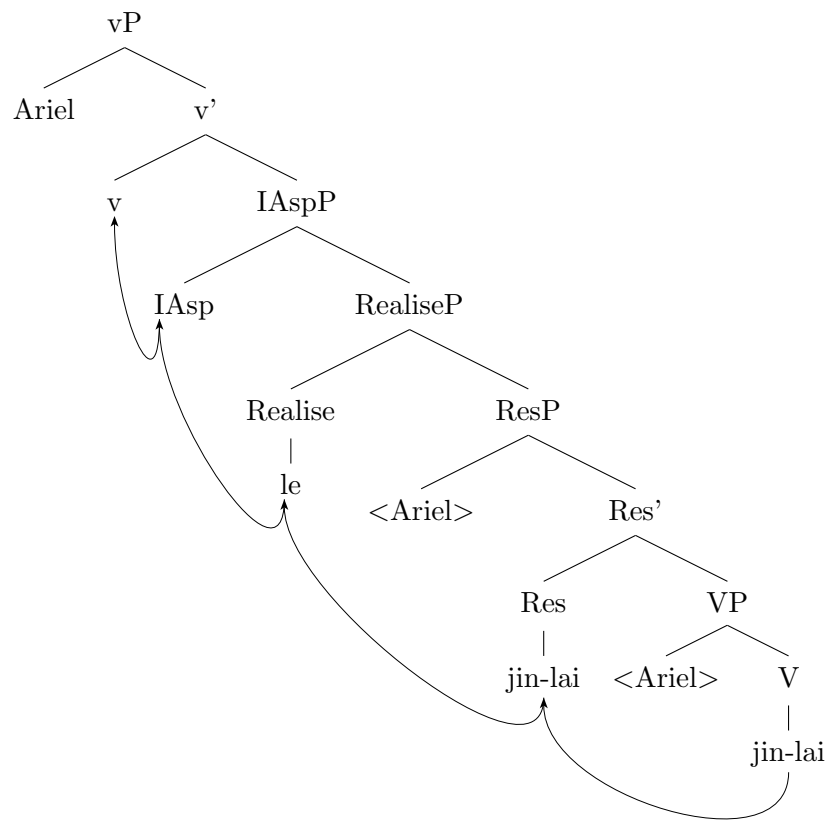
Besides, in (12), the importance of *lai* is much less than *jin*. Deleting *lai* does not greatly change the meaning. On the contrary, the *lai* in *song lai tang* carries important information, i.e. the result of the displacement, which is the soup being here. Deleting the *lai* here removes the result, converting an accomplishment to an activity.

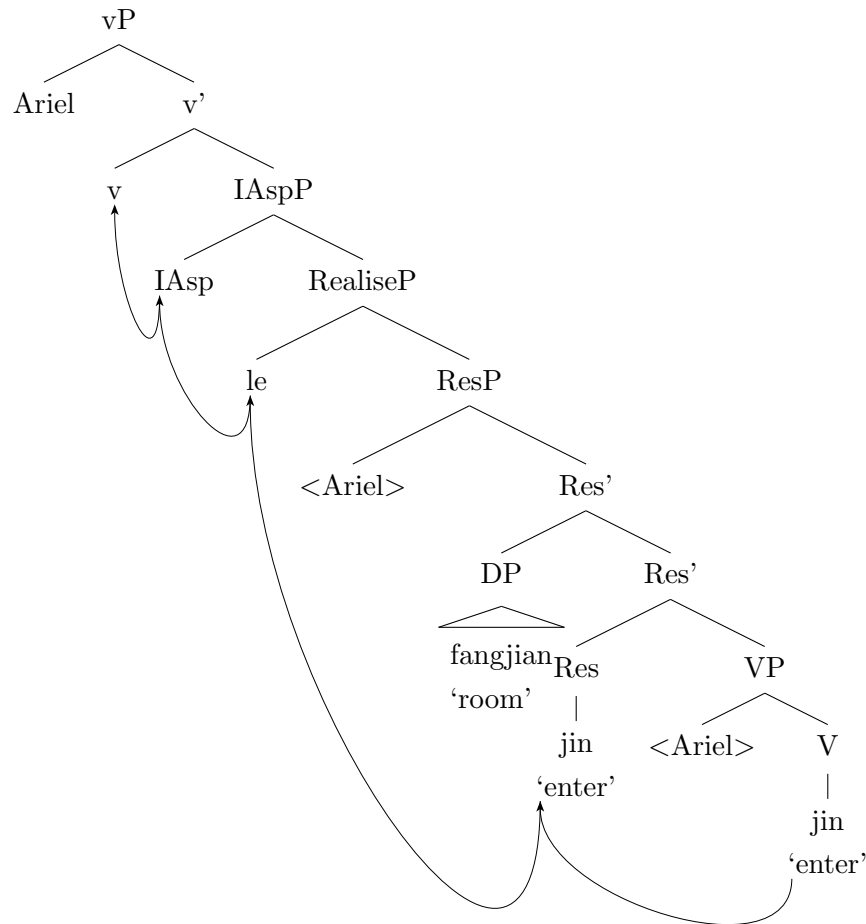
Based on the observation above, I argue that (12) actually does not involve argument sharing. The *lai* in (12) is actually an adjunct rather than a subevent predicate. The reading that *lai* is semantically connected with the subject *ta* is not because of a PRO. It is actually because *lai* is an adjunct adjoined to ResP, in which *ta* merges as its specifier. Because both of *ta* and *lai* are within ResP, we get the reading that they are connected.

So far we have analysed the phrasal behaviour of V_{gen} - V_{deic} clusters. Then how to explain the word behaviour of the V_{gen} V_{deic} clusters? Specifically, what in the system prevents *le* from intervening between the V_{gen} and V_{deic} when no locative object occurs, as is repeated in (15)?

- (15) Ta jin (*le) lai.
 3sg enter ASP come
 ‘S/He came in.’

I propose that the verb cluster *jin lai* in (15) is different from the *jin lai* in (12), which are serial verbs that distribute the composing verbs into the subevental heads. The *jin lai* in (15) is actually indeed some kind of compound. Whether this compound exists in the lexicon or whether it is formed in some working place in syntax is still mysterious, awaiting for further research. The main point here is that, *jin lai* in (15) is an X^0 before it is inserted into the structure. Therefore, the locative object and *le* cannot intervene between the two morphemes. In other words, the serialising pattern V_{gen} V_{deic} is special in that it contains two situations. When there are other elements in between the two morphemes, this type of V_{gen} V_{deic} clusters are indeed serial verbs. However, when there is nothing in between the two morphemes, this type of V_{gen} V_{deic} clusters are compounds, in which the component morphemes can not be distributed to different sub-evental heads because syntax cannot see inside a lexical word. Instead, the analysis of the compound type of V_{gen} V_{deic} clusters is similar to the analysis of the single V_{gen} s: the whole word is decomposed into V and res, as is shown in (16). The analysis for the single V_{gen} *jin* is repeated in (17) for comparison.

(16) Analysis for *jin-lai*

(17) Analysis for *jin*

Recall another observation I have mentioned about the $V_{gen} V_{deic}$ cluster is that $V_{gen} V_{deic}$ does not allow a locative DP to follow the string, although a single V_{gen} normally requires a locative object.

The example is repeated below:

(18) *Ta **jin lai** fangjian le.
 he enter come room SFP
 'He came into the room.'

This phenomenon can be captured by the hypothesis that (18) contains a $V_{gen} V_{deic}$ of the compound type rather than the serial verb type. Basically, the idea is that when a $V_{gen} V_{deic}$ compound is inserted under Res, as in (16), the ResP can construe a result location reading without a locative DP. I suggest that this is because when the compound $V_{gen} V_{deic}$ is formed, it also integrates a location notion in its semantics.

This assumption is motivated by the observation that when $V_{\text{gen}} V_{\text{deic}}$ such as *jin lai* are used without an overt locative object, these clusters are always used in a context where the speaker and listener of the conversation are well aware of the actual location. For example, when uttering the sentence *Ta jin lai le*. ‘he enter come ASP’ in the context that the speaker and the listener are both in a room, the speaker unambiguously expresses the meaning that ‘he is entering the room in which they are staying’. Another case where this sentence may be uttered is when both the speaker and listener are watching a video in which ‘he’ just entered a room. Since both sides are aware of the location, there is no need to specify it. However, the speaker would not utter *ta jin lai le* if the listener has no idea of the location ‘he’ entered (e.g. The speaker is watching a video in which ‘he’ entered a room, but the listener is not watching the video and knows nothing about the video). In this case, the speaker would have to specify the location in the conversation, either by adding the locative object after V_{gen} (as in (19)) or by addressing the information in the context (as in (20)).

- (19) Xiaoming **jin** le na zuo lou **qu**.
 Xiaoming enter ASP that CL building go
 ‘Xiaoming entered that building.’
- (20) Ni kandao na zuo lou le ma? Xiaoming **jin qu**
 you see that CL building SFP ? Xiaoming enter go
 le!
 ASP/SFP
 ‘Do you see that building? Xiaoming went in there!’

These evidences suggest that the $V_{\text{gen}}-V_{\text{deic}}$ compounds integrate a location notion in their semantics. Therefore, when inserted under Res, the integrated location notion is enough for the ResP to construe the result location reading. (18) is bad because adding a locative DP causes semantic redundancy.

In summary, the serialising pattern $V_{\text{gen}} V_{\text{deic}}$ involves two situations. The $V_{\text{gen}} V_{\text{deic}}$ clusters that demonstrate phrasal behaviours (separated by a locative object, *le*) are indeed serial verbs. The component V_{gen} and V_{deic} are distributed under different heads in syntax. Specifically, V_{gen} (*jin*) is under V and Res, while V_{deic} (*lai*) is under Deic. The example analysis is in (13). On the other hand, the $V_{\text{gen}} V_{\text{deic}}$ clusters that demonstrate word behaviours (bans *le* between the morphemes when the locative DP is missing; bans loca-

tive DP after the string) are indeed words, i.e. compounds, which integrate a location in their semantics. The analysis of this type of $V_{gen} V_{deic}$ cluster is just like the analysis for a single verb. The example tree is shown in (16). We will revisit the compound type of the $V_{gen} V_{deic}$ clusters when we discuss the other serialising patterns.

Note that the compound analysis is only proposed for the $V_{gen} V_{deic}$ clusters showing the word behaviours. The other DSVC patterns, such as the $V_{dis} V_{deic}$ pattern *song lai* ‘send come’, are always treated as serial verbs. I have discussed the difference between a $V_{gen} V_{deic}$ cluster and a $V_{dis} V_{deic}$ cluster in 2.4.1 showing that *song lai* does not show the word behaviour as *jin lai* does. Besides, we observe that there are only limited number of $V_{gen} V_{deic}$ clusters (16 according to Li&Thompson (1981)) while the combination between a V_{dis}/V_m and a directional verb are far more flexible. Based on this observation, it is reasonable to assume that the $V_{gen} V_{deic}$ compounds can be only formed for some special reason (e.g. a null locative object), hence resulting in the limited number. On the contrary, the other serialising patterns are generated in syntax by inserting various co-event verbs and directional verbs into the Res structure or Path structure, which means it would allow infinite combinations of these verbs as long as the semantics is felicitous.

4.1.3 Potential Morphemes in the $V_{gen} V_{deic}$ Cluster

The remaining puzzle is how to derive the sentences where the potential morpheme *de/bu* is inserted, for example, (21).

- (21) Xiaoming jin **de** lai, jin **bu** lai?
 Xiaoming enter able come, enter unable come
 ‘Can Xiaoming come in or not?’

Here *jin lai* is separated by the potential morphemes *de/bu*. According to our previous hypothesis, this suggests that the *jin lai* in (21) is serial verbs rather than a compound. The morpheme *jin* and *lai* are inserted under different heads in the syntactic structure.

First I propose a new functional projection PotentialP to accommodate *de/bu*. I suggest that the PotentialP headed by *de/bu* can only appear when a ResP is projected and the potential morpheme is merged between the VP and ResP.

The evidence is that an activity verb can never take *de/bu*:

- (22) *Na xiaohai **da** de/bu laohu.
 that kid hit able/unable tiger
 ‘That kid is able/unable to hit the tiger.’
- (23) *Xiaoming **tui** de/bu da xiangzi.
 Xiaoming push able/unable big box
 ‘Xiaoming is able/unable to push big boxes.’
- (24) *Xiaoming **chi** de/bu yi da wan fan.
 Xiaoming eat able/unable one big bowl rice
 ‘Xiaoming is able/unable to eat a big bowl of rice.’

However, when a resultative predicate is added, *de/bu* is licensed and its position is between the action verb and the resultative predicate:

- (25) Na xiaohai **da** de/bu **si** laohu.
 that kid hit able/unable die tiger
 ‘That kid is able/unable to beat the tiger to death.’
- (26) Xiaoming **tui** de/bu **dong** da xiangzi.
 Xiaoming push able/unable move big box
 ‘Xiaoming is able/unable to push big boxes.’
- (27) Xiaoming **chi** de/bu **wan** yi da wan fan.
 Xiaoming eat able/unable finish one big bowl rice
 ‘Xiaoming is able/unable to eat up a big bowl of rice.’

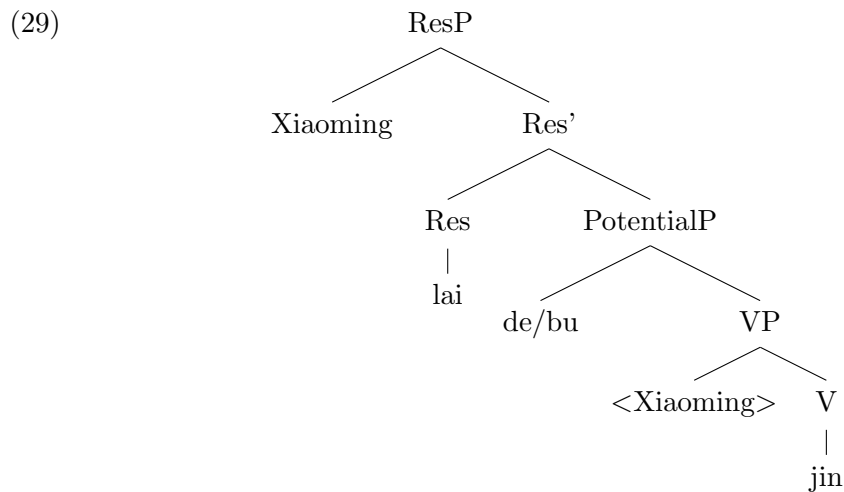
This suggests a structure represented in (28), in which *de/bu* heads a PotentialP between ResP and VP.

- (28)
- $$\begin{array}{c}
 \text{Res}' \\
 \swarrow \quad \searrow \\
 \text{Res} \quad \text{PotentialP} \\
 \quad \quad \swarrow \quad \searrow \\
 \quad \quad \text{de/bu} \quad \text{VP}
 \end{array}$$

This means that underlying (21) we have a Res structure, in which a PotentialP is projected between the process sub-evental projection and the result projection. Then how about the insertion point of *lai*? According to the

generalization we conclude in Section 3.4.2, the V_{deic} in Mandarin have two insertion positions: Res and Deic. Specifically, the V_{deic} s directly following V_{dis}/V_m (e.g. *song lai* ‘send come’, *zou lai* ‘walk come’) is under Res. The ones separated from the other verbs by an object or a locative object (e.g. *song tang lai* ‘send soup come’, *song jin tang lai* ‘send enter soup come’) are under Deic. And in Section 4.1.2 I argue that the V_{deic} s directly following V_{gen} (e.g. *jin lai* ‘enter come’) is actually part of a compound. Now we see the V_{deic} in (21) does not belong to any of the three situations. The *lai* in (21) does not directly follow the co-event verb, but it is not separated from the co-event verb by an object or a locative object. It is separated by potential morphemes. Then what is the insertion position of *lai* in (21)?

I suggest that the deictic verb *lai* in (21) is inserted under res rather than Deic, represented in (29):



Then *jin* raises to Potential and Res successively to pick up these heads, forming the complex head *jin-de-lai*. A good evidence to support the view that this *lai* in (21) should be merged under Res rather than Deic is that *lai* following potential morphemes are often found in serial verbs beginning with a non-motion/displacement verb. The relevant data is addressed in Section 2.2.2.4, example (143), repeated in (30) below.

- (30) Xiaoming **chang** bu **lai** zhe shou ge.
 Xiaoming sing unable come this CL song
 ‘Xiaoming cannot sing this song.’

More examples are shown in (31) and (32).

(31) Zhe dao ti, Xiaoming **zuo** de **lai** ma?
 this CL question, Xiaoming do able come SFP
 ‘Can Xiaoming work out this question?’

(32) Maobi zi, wo **xie** bu **lai**.
 brush character, I write unable come
 ‘I cannot write characters with a brush.’

In these cases, *lai* is clearly not interpreted as a deictic direction. The *lai* in the examples above is better interpreted as some kind of result, meaning something like ‘got successfully done’. The function of the potential morphemes is to address whether this result is able to be achieved or not. Recall that in our theory DeicP is an adjunct adding deictic information while ResP is to provide the result sub-event. If *lai* is inserted under Deic, we should expect it to add deictic information to the sentence, contrary to what we have seen in (30)-(32). In comparison, the assumption that the *lais* in these examples are under the node Res naturally explains why these *lais* are interpreted as a kind of result rather than a deictic direction.

It may be pointed out by some speakers that the *lai/qu* following the string ‘V_{gen} + *de/bu*’ has more directional meaning than the *lai/qu* following the string in which *de/bu* is preceded by a non-direction or movement denoting verb. For example, the *lai* in (21) can still be understood to involve some deictic meaning while the ones in (30)-(32) do not convey deictic information at all. This interpretation difference, I suggest, does not arise from the syntactic structure, but from real world knowledge. Specifically, if the verb inserted under V is a motion denoting verb, we expect the result of it to be direction and location related, so the deictic verb can still be interpreted to involve certain deictic meaning. If the verb inserted under V entails no motion/displacement, keeping the deictic interpretation would be odd, so our conceptual system would try to stretch the meaning to match the structure, namely, interpreting *lai* as a non-direction related result. This idea follows from Borer’s (2005b:9) discussion on the relation between the conceptual system and the grammar, which is reviewed in Section 1.2.2: “ It is in the nature of things that the two outputs will not always match, or at least, not in a straightforward way. In the event of a mismatch, the grammar will always prevail. The interpretation put forth by the conceptual component can and will stretch, as much as possible

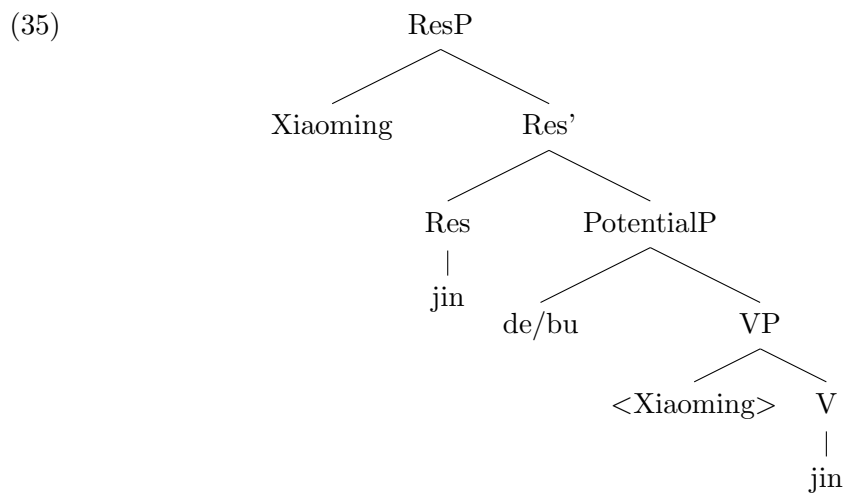
within the confines of the concept under consideration, so as to match the rigid, absolute interpretational constraints circumscribed by the grammar.”.

It may also be questioned why *jin* does not decompose itself into both V and Res when the Potential morpheme is inserted. In other words, why do we have to say (33) rather than (34)?

(33) Ta jin bu lai.
3sg enter unable come

(34) *Ta jin bu jin.
3sg enter unable enter
Intended: ‘S/He cannot enter.’¹

Structurally, why can’t we have something like (35)?



By closer observation, we find that actually many monosyllabic achievement verbs in Mandarin, such as *si* ‘die’, *dao* ‘arrive’, can not copy themselves after the potential morpheme. Instead, they require some dummy verbs which have little concrete meaning, such as *liao/diao*, to follow the potential morpheme:

(36) Bie pa! Wo si bu liao!
don’t afraid! I die unable LIAO
‘Don’t be afraid! I will not die.’

¹(34) is accepted if interpreted as a A not A question, but this is not our intended reading.

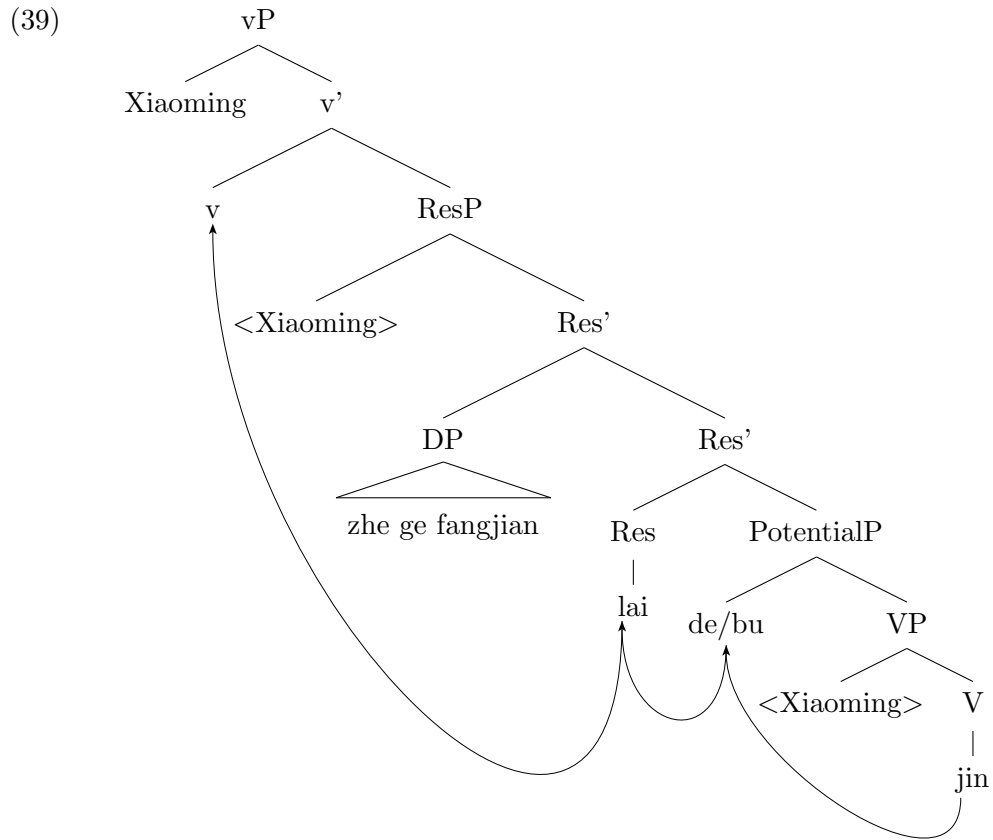
- (37) Wukong, ni zheyang shi **dao** bu **liao** xitian de.
 Wukong, you like-this BE arrive unable LIAO west-world DE.
 ‘Wukong, behaving like this, you cannot arrive the west world.’

I suggest that this could be due to some phonological reasons. When no PotentialP is projected, *jin* under V directly moves up to the *jin* under Res. The head cluster is pronounced as *jin*. However, when PotentialP is projected, the V *jin* moves to *de/bu* first and then to the Res *jin*. Assume this is something disliked by the phonology: V and Res shouldn’t be occupied with the same elements when PotentialP is projected. Therefore, when no other appropriate resultative predicates are available, a dummy morpheme is required to be inserted under Res, as a last resort. The dummy morphemes could be *lai/qu*, mainly for replacing V_{genS} , or *liao/diao*, mainly for replacing other monosyllabic achievement verbs.

Finally, it is observed that a locative object occurring after the string *jin-de-lai*, as in (38).

- (38) Xiaoming jin de lai (zhe ge fangjian).
 Xiaoming enter able come this CL room
 ‘Xiaoming is able to enter this room.’

Following what we have the locative object is realised as the lower specifier of ResP. So the structure of (38) is represented in (39).



4.2 $V1=V_m$

In this section, we tackle the DSVCs with the first verb being an intransitive motion verb such as *pao* ‘run’, *zou* ‘walk’, *fei* ‘fly’, *gun* ‘roll’, etc. There are three serialising patterns involved in this section:

$V_m V_{gen}$: the motion verb is followed by a single general directional verb, e.g. *zou jin* ‘walk enter’;

$V_m V_{deic}$: the motion verb is followed by a single deictic verb, e.g. *zou lai* ‘walk come’;

$V_m V_{gen} V_{deic}$: the motion verb is followed by a general directional verb and a deictic verb, e.g. *zou jin lai* ‘walk enter come’.

Next I shall analyse each pattern with our constructionist model. Section 4.2.1 discusses the patterns in which V_m is followed by a single directional verb and Section 4.2.2 discusses the $V_m V_{gen} V_{deic}$ pattern.

4.2.1 $V_m V_{gen}$ and $V_m V_{deic}$

In this section, we investigate the puzzles observed with the cases where V_m is followed by only one directional verb. There are two core issues we would like to address: the position of *le* and the position of the locative object.

4.2.1.1 Position of *le*

In Section 2.4.2 we have seen that ASP *le* can never follow the V_m in both of these serialising patterns. ASP *le* has to follow the directional verb V_{gen}/V_{deic} . The examples are repeated in (40) and (41).

- (40) Xiaoming zou (*le) jin le fangjian.
 Xiaoming walk ASP enter ASP room
 ‘Xiaoming walk into the room.’

- (41) Xiaoniao fei (*le) lai le.
 bird fly ASP come ASP/SFP
 ‘Birds flew hither.’

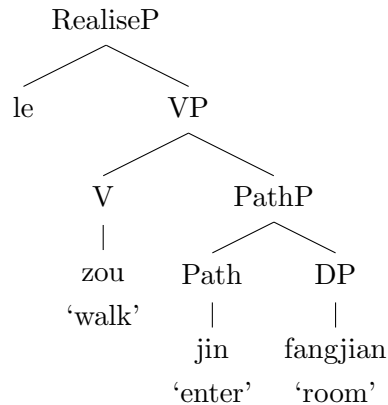
This is the first data we need to account for.

Following our theory, the co-event verb *jin/fei* is under V. The remaining question is where the directional verbs are inserted.

We first look at (40). *jin* is a V_{gen} . According to the generalization based on our lexical item insertion mechanism, *jin* has two possible insertion positions in Mandarin, namely Res and Path. Then the question amounts to whether the underlying structure for (40) is a Res structure or Path structure. I argue that it is a Res structure rather than a Path structure. There are two arguments for this claim.

The first reason lies in the position of *le*. Suppose we adopt the assumption that V_{gen} *jin* is under Path, giving a tree roughly like (42).

(42)



According to our theory, Path does not move. V moves up cyclically incorporating the heads on its way. In this way we will derive the word order *zou le jin fangjian* rather than the actual order *zou jin le fangjian*.

It may be argued that Path should be allowed to raise to V. However, we argued in Section 3.3 that postulating the head movement rule that Path does not move to V is both theoretically and empirically motivated. Theoretically speaking, it is reasonable to assume that the head above V, say Res, bears a [uV] feature, which requires V to raise to Res. Because ResP is always constructed above VP, this requirement will always be satisfied. However, it would be problematic to say V bears a [uPath] feature which triggers the Path to V movement because VP does not have to have a PathP underneath, which means the [uPath] feature may not be satisfied. Empirically speaking, in order to account for the existence of the word order $V_{\text{dis}} O V_{\text{deic}}$ or $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$, in which cases the V_{deic} or $V_{\text{gen}} V_{\text{deic}}$ are inserted under Path, we need to make sure Path does not raise to V. If Path raises to V, V_{dis} and the directional verbs would stick together and the direct object would never be able to intervene in the middle. Therefore, allowing Path to raise to V just to derive the right word order of *zou jin le fangjian* is not a desirable option.

The second problem the analysis in (42) brings about is that it would give the wrong telicity interpretation. Recall that in our system, if the telicity calculating node IAsp receives the value from Path, it gives an atelic reading. However, this is not the case because *zou jin fangjian* ‘walk enter room’ means ‘walk into the room’, which is a reached goal reading that entails an endpoint. It differs from the directed motion reading such as ‘walk towards the room’. Therefore, the string ‘ $V_m V_{\text{gen}} \text{LocO}$ ’ is telic. Apart from *zou jin fangjian*, we can examine other $V_m V_{\text{gen}}$ combinations to confirm this. For example, *zou*

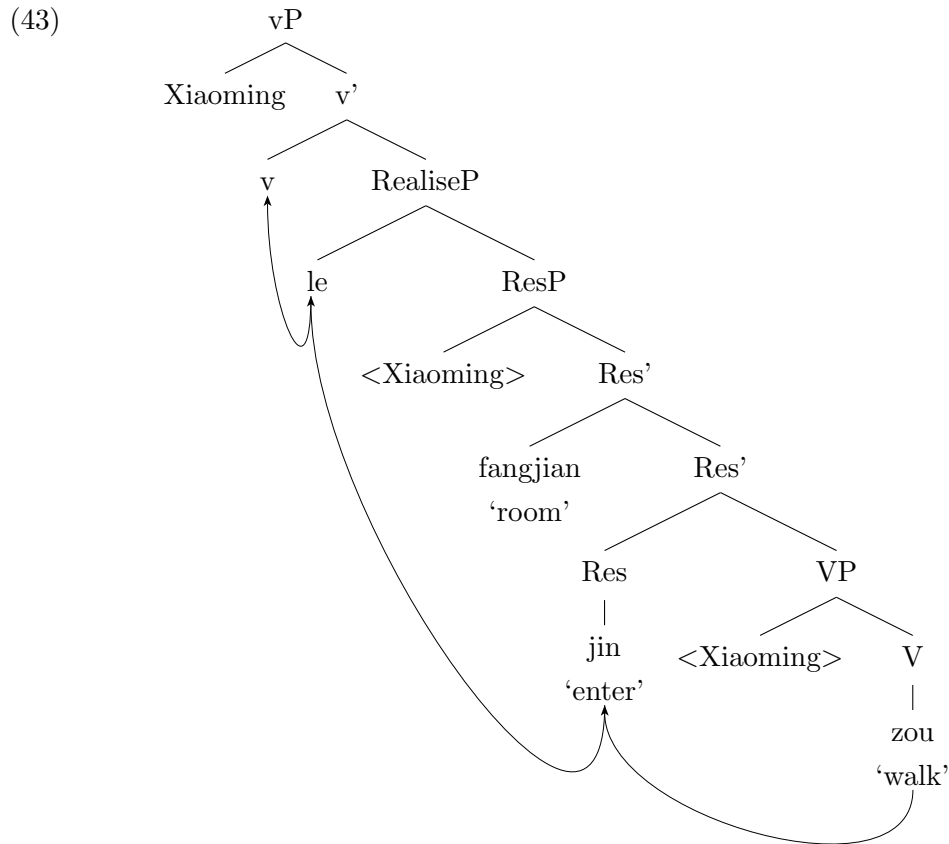
chu fangjian ‘walk exit room’ means walk out of the room, an interpretation with the reached goal to be outside the room; *zou xia louti* ‘walk descend stairs’ entails the goal of being at the bottom of the stairs. A similar observation that the directional elements directly following the motion verb denote boundedness has been noted in the literature as well, quoted as follows.

“...in Chinese the rule governing the syntactic position of PPs entails that a postverbal Resultative Phrase necessarily behaves like an “end-bounded Spatial PP”, and forms a ‘telic resultative’ (cf. English ‘Bill floated into the cave’). Events involving non-end-bounded spatial PPs (like English ‘Bill pushed Harry along the trail’) will be encoded with preverbal PPs.” (Lamarre 2007: 4)

“...most directional endings do not merely indicate the direction of movement vis-à-vis a target. They also indicate the successful completion of motion vis-à-vis a target.” (Ross 1990: 67)

“...the directional complements ... when combining with verbs of Activity (motional or non-motional), add the notion of goal or end-point to the durative situation described by the Activity verb, which otherwise would have no terminus. Thus they affect the intrinsic temporal nature of the situation, and change an Activity into an Accomplishment. ... We assert that they describe telic situations.” (Kang 2001: 327)

Considering this, the plausible analysis which insert the V_{gen} in the serialising pattern $V_m V_{\text{gen}}$ under Path, i.e. (42), should be discarded. The V_{gen} in the pattern $V_m V_{\text{gen}}$ is under Res instead of Path, as is shown in (43).



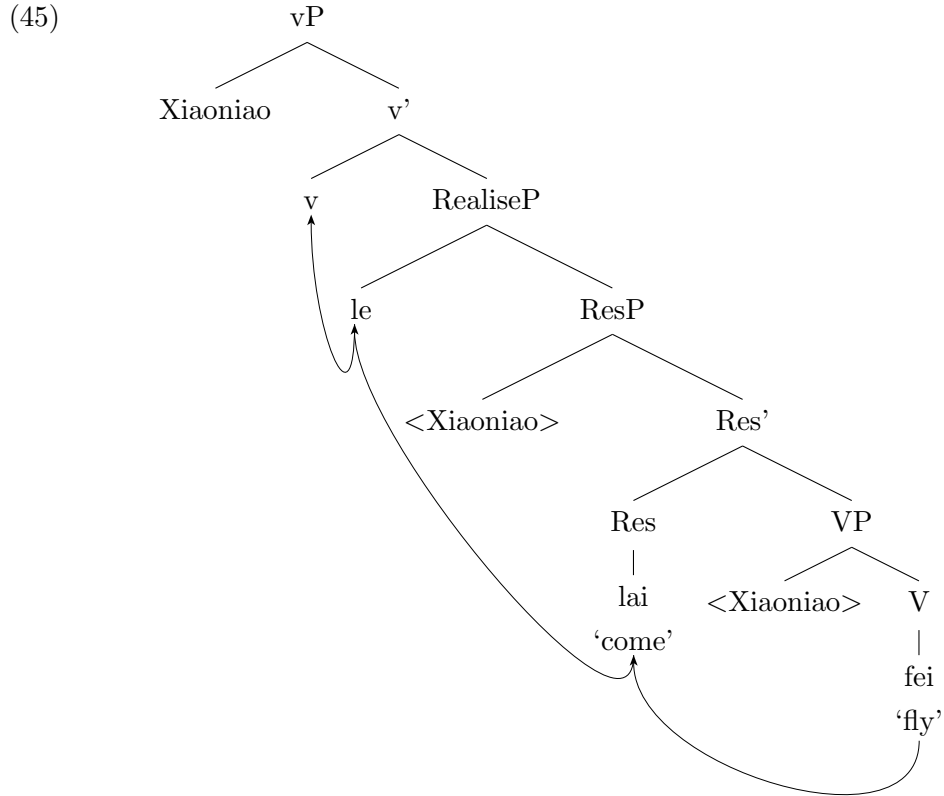
This analysis on the one hand poses no threat to the theory we have developed. The value that Res gives IAsp is interpreted by the semantic module as telic which matches the goal reading. On the other hand, this analysis successfully predicts the position of *le*. Because V moves to Res and the functional heads above, *le* will end up following the whole verb string.

Now we move to (41), namely the serialising pattern $V_m V_{deic}$. We already argued that in Mandarin, V_{deic} s are found under Res or Deic. Then what is the actual insertion position of *lai* in (41)?

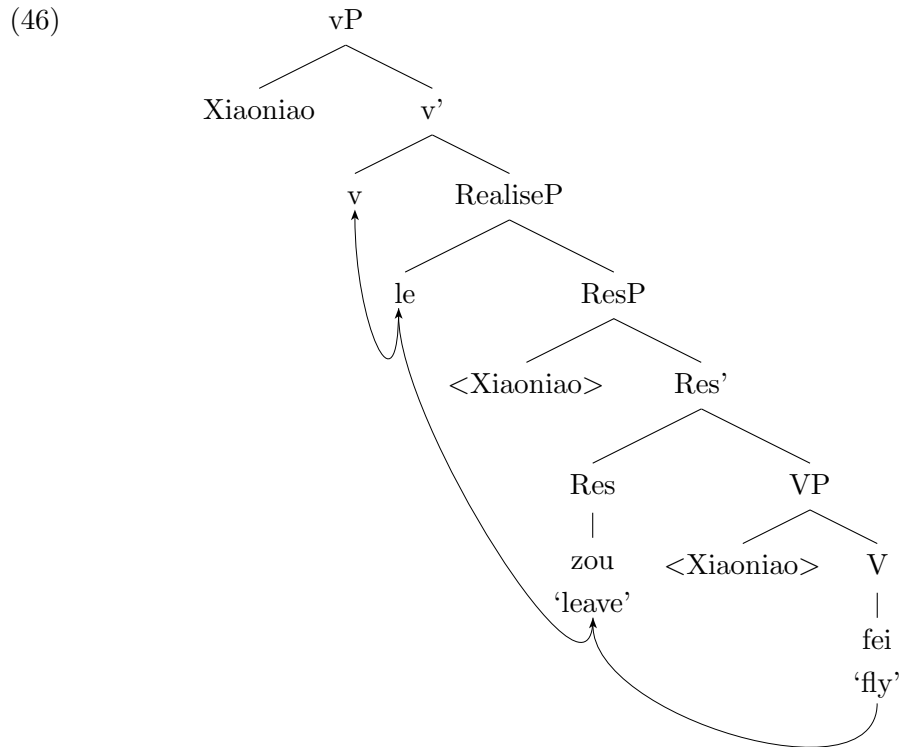
If this *lai* is under Deic which is an adjunct, we should expect it to be removable without greatly changing the meaning. However, this is not the case. (41) not only entails the direction of the flying action but also the result of the flying action, which is the bird's being here. Deleting *lai* results in a complete different meaning, as in (44).

- (44) Xiaoniao fei le.
bird fly ASP/SFP
'Birds flew away.'

This suggests that the *lai* here is not an adjunct. Hence this *lai* is not under Deic. Then we only have the option Res to insert *lai*, giving the structure in (45).



This analysis explains why (41) has the resultative entailment. It also derives the correct word order: *xiaoniao fei lai le*. The analysis in (45) is also the analysis for a resultative SVC such as *fei zou le* ‘fly leave ASP’, represented in (46).



In summary, the serialising pattern $V_m V_{gen}$ and $V_m V_{deic}$ are both instantiations of Res structure in which the directional verb is under Res. This analysis directly captures the position of *le* in these serialising patterns.

4.2.1.2 The position of the locative object

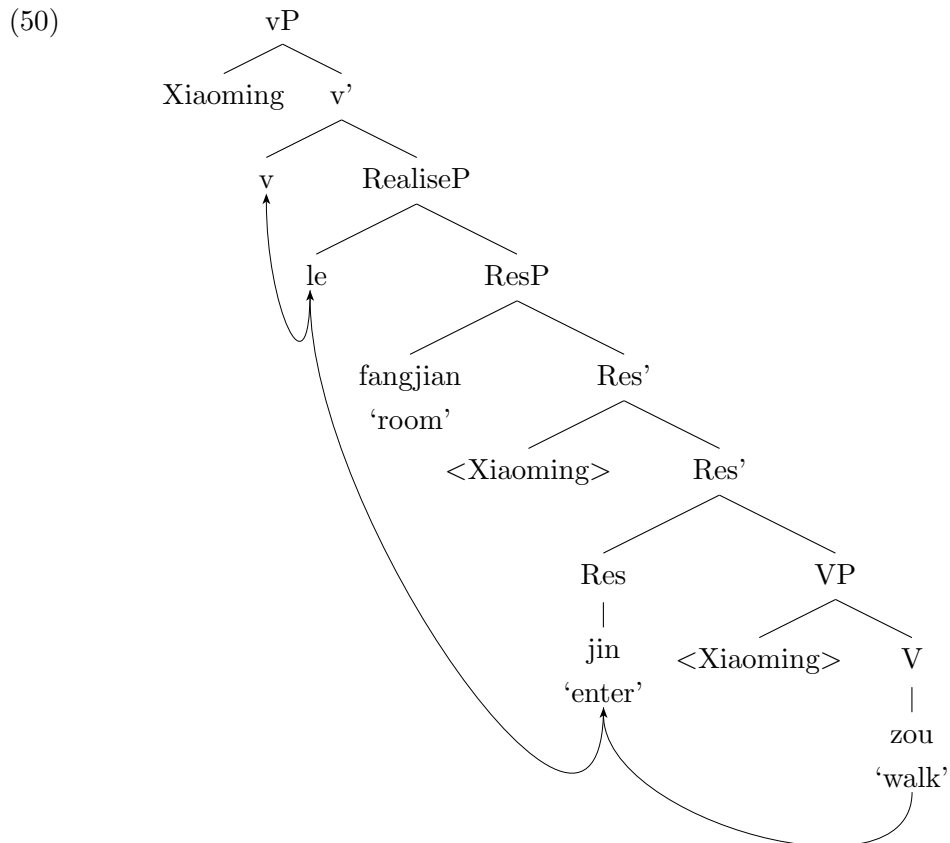
A remaining issue is about the distribution of a locative object. The basic observation is that in the $V_m V_{gen}$ pattern, a locative object is compulsory and must follow V_{gen} ((47)).

- (47) Ta **zou jin** le *(fangjian).
 he walk enter ASP room
 'He walked into the room.'

In comparison, the $V_m V_{deic}$ pattern dislikes a locative object to follow the V_{deic} . If a locative object needs to be specified, a V_{gen} or the verb *dao* 'arrive', which is also considered as a V_{gen} by some linguists (e.g. Lamarre (2007)), is often added preceding the locative object and the V_{deic} is moved to follow the locative object. In other words, the word order $V_m V_{deic} \text{LocO}$ is generally less favoured than the $V_m V_{gen} \text{LocO} V_{deic}$ order, as is shown in (48) and (49).

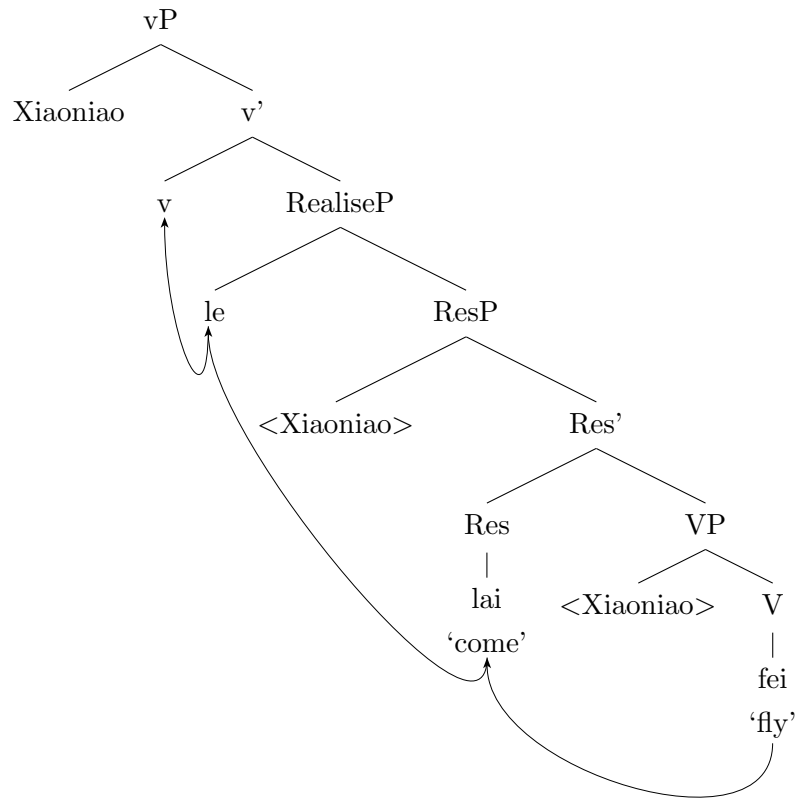
- (48) a. ?zuqiu **gun lai/qu** qiumen le.
 football roll come/go goal SFP
 b. Zuqiu **gun jin** qiumen **lai/qu** le.
 football roll enter goal come/go SFP
 ‘The football rolled hither/thither to the goal.’
- (49) a. ?Xiaoniao **fei lai** shulin-li le.
 bird fly come woods-inside SFP
 b. Xiaoniao **fei dao** shulin-li **lai** le.
 bird fly arrive woods-inside come SFP
 ‘Birds flew into the woods’

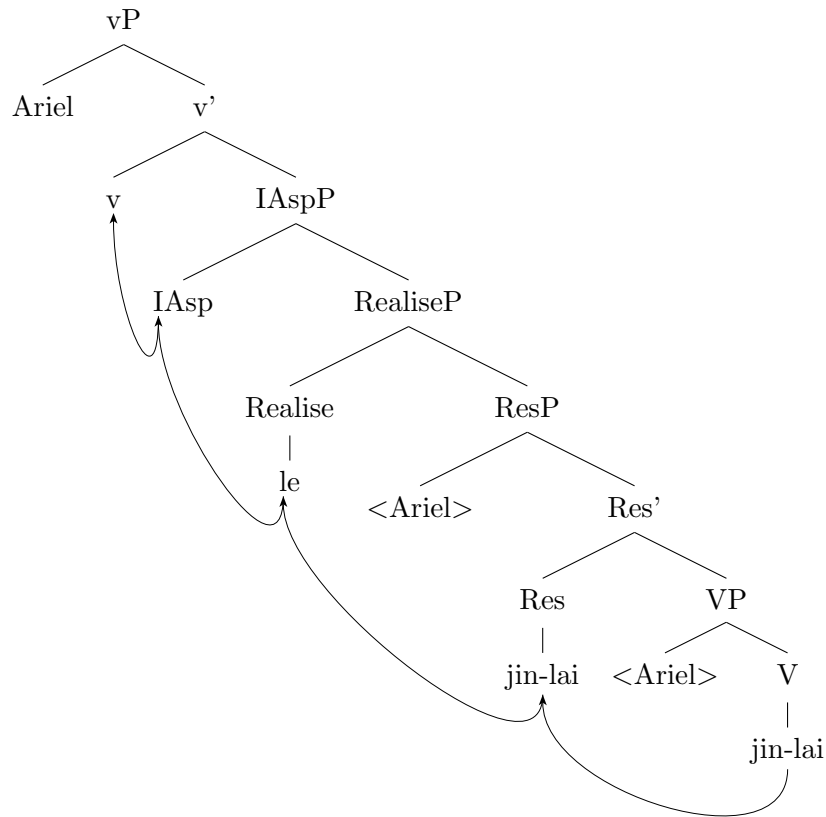
(47) follows what we have argued in Section 4.1.1: when the V_{gen} is under Res, ResP needs a locative object to specify the endpoint, thus construing a result state reading. And the locative object is merged as the lower specifier of ResP, as is shown in (43), repeated in (50).



These pieces of data suggest that when a V_{deic} is inserted under Res, it tends not to take a locative DP in the spec of ResP. This preference is probably due to the semantics of deictic verbs. The semantics of *lai/qu* ‘come/go’ entails a default final location which is equal to ‘here’/ ‘there’, hence they themselves are enough to complete the result state when inserted under Res. This property of V_{deic} s resembles the compound type of $V_{\text{gen}} V_{\text{deic}}$ clusters. We argued in Section 4.1.2 that the $V_{\text{gen}} V_{\text{deic}}$ clusters showing word properties are indeed lexical words. And they integrate a location notion in their semantics. When these compounds are under Res, a locative object is also not necessary because the inherent location notion is enough for ResP to construe a result location reading. I repeat the analysis of $V_m V_{\text{deic}}$ and the analysis of the compound type of $V_{\text{gen}} V_{\text{deic}}$ cluster below:

(51) Analysis for $V_m V_{\text{deic}}$ *fei lai*



(52) Analysis for $V_{\text{gen}} V_{\text{deic}}$ compound *jin-lai*

The preferred word order shown in (49-b) is actually of the serialising pattern $V_m V_{\text{gen}} V_{\text{deic}}$ which is addressed in Section 4.2.2.

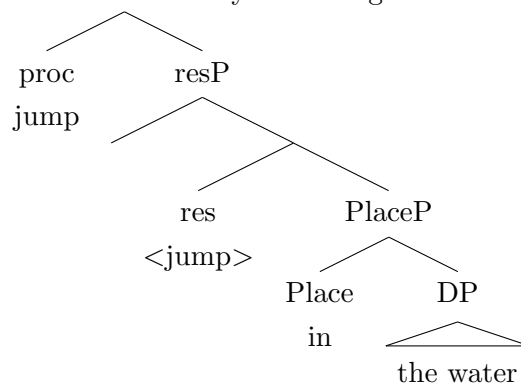
To sum up, the $V_m V_{\text{gen}}$ pattern requires a locative object because the V_{gen} under Res is not enough for the ResP to construe a result location reading. In comparison, $V_m V_{\text{deic}}$ have V_{deic} inserted under Res, and $V_{\text{gen}} V_{\text{deic}}$ compounds have the whole compound $V_{\text{gen}}-V_{\text{deic}}$ inserted under Res. The semantics of V_{deic} s and $V_{\text{gen}}-V_{\text{deic}}$ compounds entails a clear location, therefore they do not need an extra locative DP for ResP to construe a result location meaning. In other words, the low acceptance of the word order $V_m V_{\text{deic}} \text{LocO}$ and $V_{\text{gen}} V_{\text{deic}} \text{locO}$ is due to semantic redundancy of the locative DP.

4.2.1.3 A comparison with Ramchand's analysis of English PPs

To close this section, I compare our analysis of the DSVC string $V_m V_{\text{gen}} \text{LocO}$ with Ramchand's analysis of English verbs followed by PPs that give the goal interpretation and the ones that give the directed motion reading.

In Ramchand's system, verbs that contain resPs in their representation can combine with PlacePs in the complement of res. The semantics of the res head will straightforwardly give rise to the 'goal' interpretation of that location. For example, the verb 'jump' (in its punctual reading rather than the repeated activity reading) has resP projected in its representation and the phrase 'jump in the water' with the goal reading (i.e. 'jump into the water' rather than the location reading that the jumping activity happens in the water) is analysed as in (53).

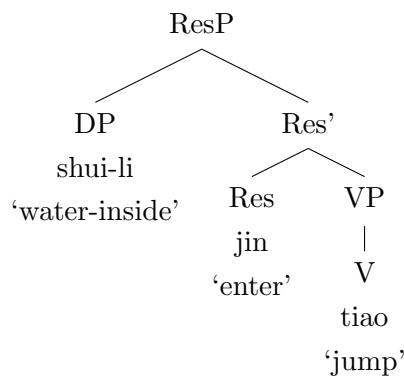
(53) Ramchand's analysis for English with PP goal reading



(Ramchand 2010: 113)

Our analysis of the string $V_m V_{gen} LocO$ in Mandarin is in essence similar to Ramchand's analysis of 'jump in the water' shown in (53). A simplified tree representation for our analysis is shown in (54) for comparison.

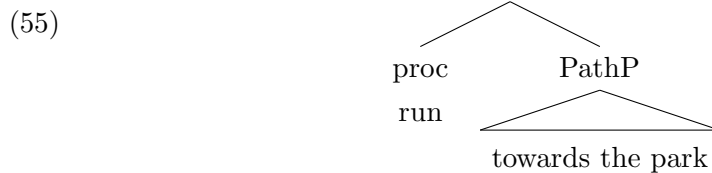
(54) Our analysis for $V_m V_{gen} LocO$



Essentially, both approaches involve a locative phrase to be in the argument position of the Res head. The difference is that Ramchand constructs resP

below VP, and as a result, the locative object is in the complement position of res; we construct ResP above VP (the reason of which is addressed in Section 3.3.2.2 and Section 3.3.2.5), as a consequence, the locative object is in the specifier position of ResP. English spreads one verb to both the V and the Res heads, while in Mandarin, the V and the Res heads hold different verbs. Besides, in English, it is a PlaceP that is selected by the Res head while in Mandarin it is a DP.

Ramchand also suggests that verbs without resP in their representation must combine with PathPs in the complement of proc to get a directed motion interpretation (Ramchand 2010: 114). Following this, the phrase ‘run towards the park’ should be represented in (55).



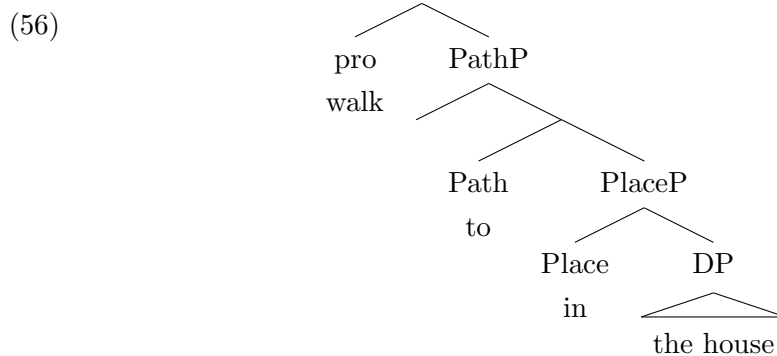
English PathPs are further divided into ‘bounded PathPs’ and ‘unbounded PathPs’. For example:

(a) *into the house* is a bounded TO PathP.

(b) *toward the house* is an unbounded TO PathP.

(Ramchand 2010: 111)

The unbounded PathPs in the complement of procP, just as represented in (55), gives rise to the directed motion reading while the bounded PathPs gives rise to ‘goal reading’. The analysis of the case where proc selects a bounded PathP ‘into the house’ is exemplified in (56).



(Ramchand 2010: 114)

In other words, according to Ramchand, goal interpretation in English can be derived by merging a PlaceP in the complement of resP or by merging a bounded PathP in the complement of procP. Directed motion reading is derived by merging an unbounded PathP in the complement of procP.

In Mandarin, the directed motion reading is often achieved by adding before the motion verb a directional PP headed by a preposition such as *wang*, *xiang* or *chao*, roughly meaning ‘towards’, as in (57-a). This PP cannot be moved postverbally, as in (57-b). As we already know, the post verbal position can be filled by a directional verb, creating a DSVC, as in (57-c). The DSVC sentence gives a reached goal interpretation.

- (57) a. Tamen feikuaide **wang fangjian-wai** pao.
 they quicky towards room-outside run.
 ‘They quickly ran towards the outside of the room.’
- b. *Tamen feikuaide pao **wang fangjian-wai**.
 they quicky run towards room-outside .
- c. Tamen feikuaide **pao dao** fangjian-wai
 they quicky run arrive room-outside .
 ‘They quickly ran out of the room.’

In other words, in Mandarin, the directed motion is instantiated by ‘preverbal PP + motion verb’, while goal reading is instantiated by DSVCs. We have argued that for the DSVC in the form of $V_m V_{gen}$ or $V_m V_{deic}$, we opt for the solution of inserting the directional verbs under Res, not Path. As for the sentences with directed motion reading, namely, the ones with preverbal PPs, they, by hypothesis, are analysed as an adjunct structure as such: $[_{VP} [_{PP} P DP] [_{VP} V]]$. Since the preverbal PP is not the locus of this thesis, we will not dig further into this issue.

Note that although so far, I propose that the directional verbs are under Res, I’m not suggesting that the directional verbs in Mandarin DSVCs are never inserted under Path. It is just in the serial pattern $V_m V_{gen}/V_{deic}$ that they are not under Path. We will see in the following sections that directional verbs can indeed be inserted under the Path head.

4.2.2 $V_m V_{gen} V_{deic}$

So far we have seen the cases where the motion verb is followed by a single directional verb. Now we move to the cases where the V_m is followed by two directional verbs, namely $V_m V_{gen} V_{deic}$, e.g. *zou jin lai* ‘walk enter come’. In this verb string, a locative DP can be added between the V_{gen} and V_{deic} . The distribution of *le* in the verb string $V_m V_{gen} V_{deic}$ with and without a locative DP is different.

We first look at the situation, where the locative DP occurs between the V_{gen} and the V_{deic} . In this case, *le* follows V_{gen} . *le* cannot follow V_m . For example:

- (58) Xiaoming zou (*le) jin le fangjian lai.
 Xiaoming walk ASP enter ASP room come
 ‘Xiaoming walked into the room (towards the speaker).’

le can also appear after *lai*:

- (59) Xiaoming zou jin fangjian lai le.
 Xiaoming walk enter room come ASP/SFP
 ‘Xiaoming walked into the room (towards the speaker).’

However, remember that the sentence final *le* following an intransitive verb is ambiguous between a ASP *le*, which is inserted under Realise in our system, and a sentence final particle *le*, which is merged in the C domain (see discussion in Section 2.2.2.2). I argue that the *le* after *lai* in (59) is a SFP because it can co-occur with the *le* after *jin*.

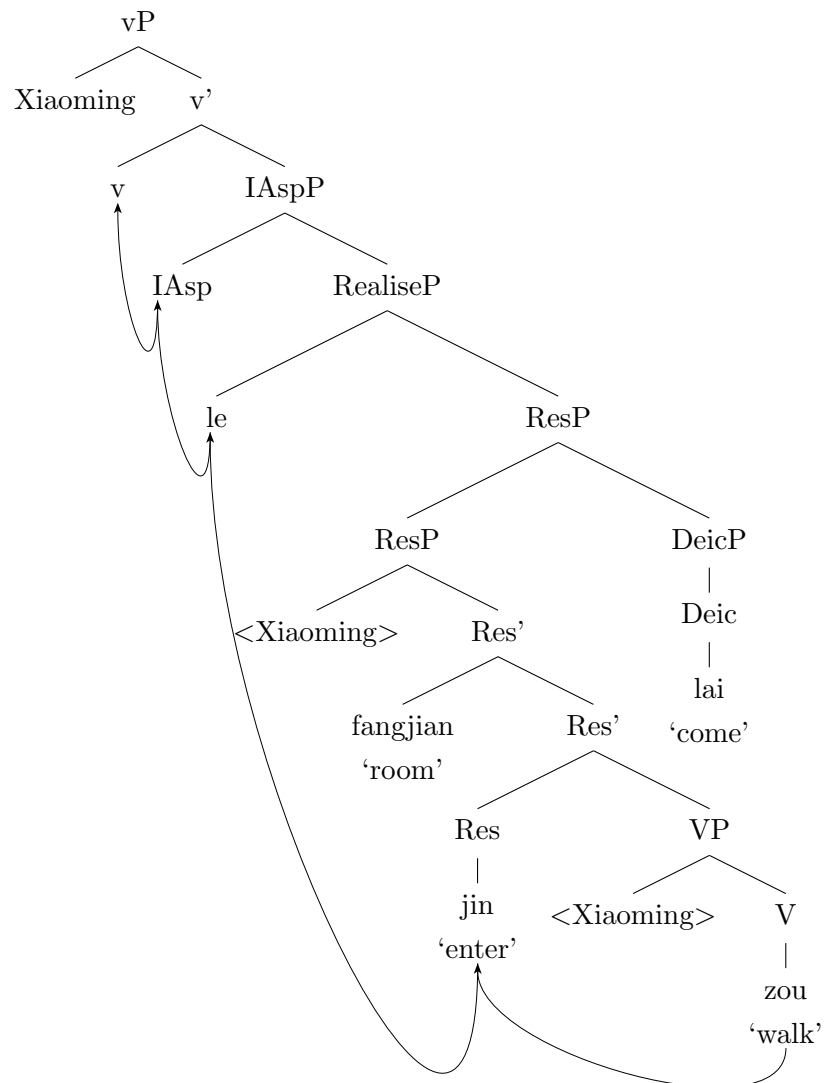
- (60) Xiaoming zou jin le fangjian lai le.
 Xiaoming walk enter ASP room come LE
 ‘Xiaoming walked into the room (towards the speaker).’

(60) suggests the two *les* cannot be the same element. Since the *le* after *jin* is uncontroversially ASP *le*, the *le* after *lai* should be the SFP. As I mentioned in 2.2.2.2, SFP *le* is beyond the scope of the discussion in this thesis. Hence, we only focus on the *le* after *jin*.

(58) can be directly captured by what I have proposed so far. Basically, the V_{gen} *jin* directly follows V_m , showing a VVO type of word order. As I argued

in Section 3.3 and summarised in Section 3.4.2, VVO type of word orders instantiate Res structure because they behave the same as resultative SVCs in many perspectives. Then according to the lexical item insertion mechanism, the V_m *zou* is inserted under V and the V_{gen} s in the VVO type of DSVCs are under Res. The V_{deic} *lai* is separated from the V_{gen} by a locative object. The *lai* in such position is argued to be an adjunct attaching to ResP. The tree for (58) is shown in (61).

(61)



Now we move to investigate the case where no locative DP intervenes between V_{gen} and V_{deic} . In this case, *le* follows either $V_{\text{m}} \textit{zou}$ or $V_{\text{deic}} \textit{lai}$. Note that *le* after *zou* and the one after *lai* do not co-occur, as in (62), so we cannot conclude that these two *les* are the same element. In other words, we cannot exclude the possibility that the sentence final *le* is an ASP *le* as well.

- (62) a. *Xiaoniao **fei** le **jin lai** le.
 bird fly ASP enter come LE
 b. Xiaoniao **fei** le **jin lai**.
 bird fly ASP enter come
 c. Xiaoniao **fei jin lai** le.
 bird fly enter come LE

Besides, *le* can not occur between the $V_{\text{gen}} \textit{jin}$ and $V_{\text{deic}} \textit{lai}$.

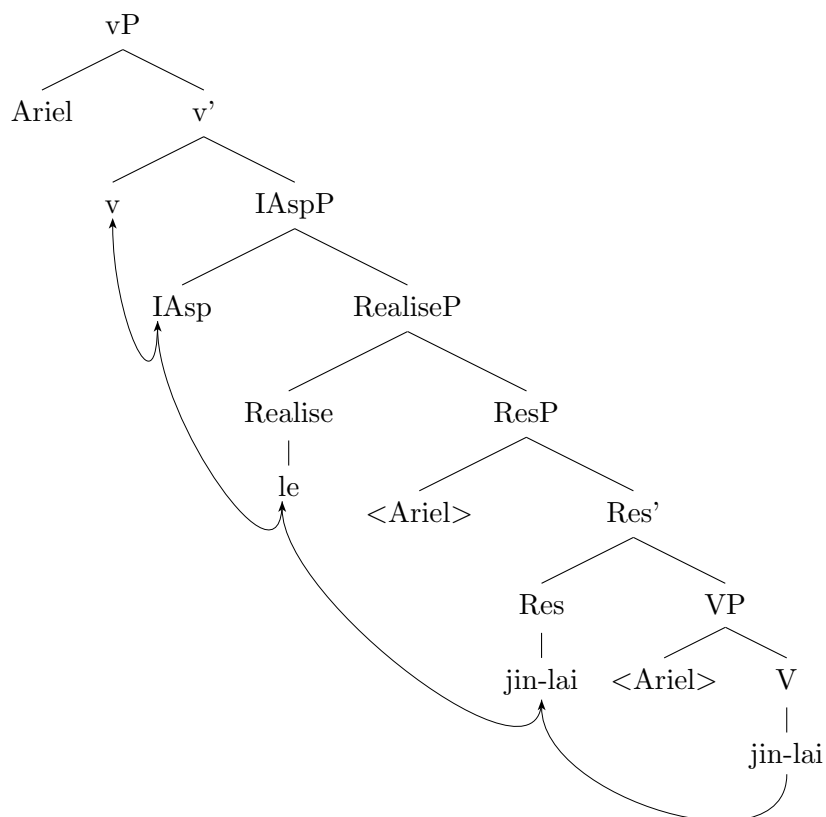
- (63) *Ta **zou jin** le **lai**.
 he walk enter ASP come

How can we account for the distribution of *le* in (62)?

First, the $V_{\text{gen}} V_{\text{deic}}$ cluster *jin lai* here is of the compound type rather than the serial verb type. The evidence is that that *le* cannot be in the middle of *jin* and *lai*. This differs from the first situation, namely (58), which is analysed in the beginning of this section. In (58) *jin* and *lai* are separated by a locative DP and *le*, hence the *jin lai* in (58) is analysed as serial verbs rather than compound.

Now that we treat the *jin lai* in (62) as a compound, we need to consider its insertion position in the syntactic structure. I have proposed in Section 3.3.1.3 for the insertion positions of $V_{\text{dis}}/V_{\text{m}}$, V_{gen} and V_{deic} , but the insertion position of $V_{\text{gen}} V_{\text{deic}}$ compounds is not discussed.

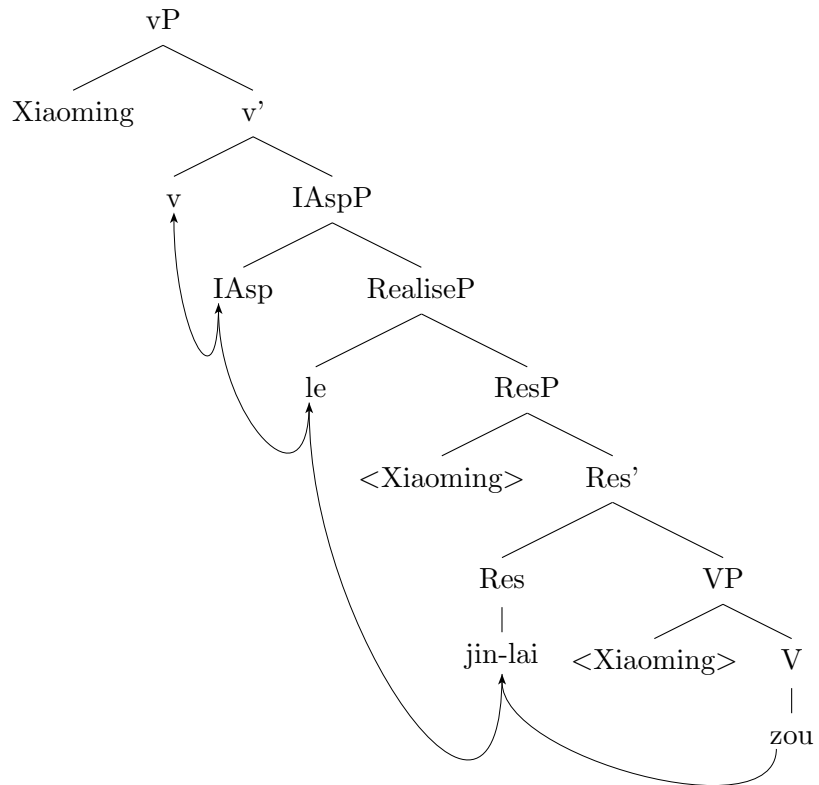
Actually, we have seen analysis in Section 4.1.2 that $V_{\text{gen}} V_{\text{deic}}$ compounds are decomposed into the Res and V heads in a Res structure, repeated below:

(64) Analysis for compound *jin-lai*

So we can conclude the first possible insertion position of V_{gen} V_{deic} compounds in Mandarin is under Res . Then is there evidence showing that V_{gen} V_{deic} compounds can be under $Path$ in a $Path$ structure as well?

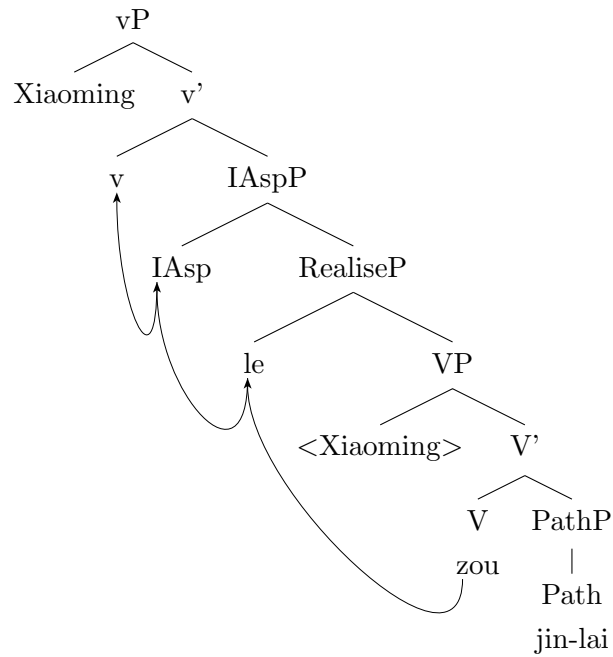
If the compound *jin-lai* indeed has two insertion options in Mandarin, we expect to find two kinds of positions for *le*. Specifically, if *jin lai* is under Res , after the head movement, which means V moves to Res , $Realise$, $IAsp$ and v , incorporating these heads in its way, *le* ends up following *jin lai*, as is shown in (65).

(65)



If *jin lai* is under Path, after the head movement, *le* follows *jin*, as is shown in (66).

(66)



The derived positions of *le* in (65) and (66) exactly match the distribution of *le* in (62). This suggests that our hypothesis that $V_{\text{gen}} V_{\text{deic}}$ compounds can be inserted under either Res or Path is plausible.

Apart from capturing the two possible positions of *le* in the string *zou jin lai*, the proposal that $V_{\text{gen}} V_{\text{deic}}$ compounds have two insertion options has another benefit. It explains an interpretation difference between the string $V le V_{\text{gen}} V_{\text{deic}}$ and the string $V V_{\text{gen}} V_{\text{deic}} le$ noted by Liu (1998).

Liu notices that when *le* follows the co-event verb V , the co-event verb is often accompanied by descriptive adverbials. And she claims the string $V le V_{\text{gen}} V_{\text{deic}}$ is normally used to describe a scene in which some action was being realised. She shows a few examples from the corpus as in (67).

- (67) Wang furen qinshou shao hao de caiyao, you Chen-sao
 Wang Madam personally cook good DE dish, via Mrs.Chen
 yi-yang-yang de **duan** le **shang-lai**.
 one-by-one DE hold ASP ascend-come.
 ‘The dishes cooked by Madam Wang were brought up one by one by
 Mrs Chen.’

- (68) Yanghong shaoshao leng le yixia, xiang tuan huo yiyang **pu**
 Yanghong a-little shock ASP once, like CL fire same pounce
 le **shang-qu**.
 ASP ascend-go
 ‘Yanghong got shocked a little bit, and then pounced forward like a
 fire.’

(Liu 1998: 46)

Both (67) and (68) are intended to describe a realised on-going scene. For instance, (67) describes the scene where the dishes were being brought to the table one by one rather than stressing the final state where all the dishes were on the table. (68) mainly describes a past scene in which Yanghong threw himself at someone/something. The focus is on the manner of the action but not the result of the pouncing action.

However, when *le* follows $V_{\text{gen}}-V_{\text{deic}}$, the co-event verb is often modified with adverbials indicating realisation such as *yijing* ‘already’, *zhongyu* ‘finally’. And the interpretation tends to indicate a result is achieved. Again I adopt some of Liu’s corpus data below:

- (69) Shiqing jiran **fanying shang-qu** le, jiu dei xiang
 issue now-that reflect ascend-come ASP, then must think
 duice.
 countermeasure
 ‘Now that the issue has been reported to the leaders, we must think
 about countermeasures.’
- (70) Ta yijing hao-bu-youyu de **zhan qi-lai** le.
 she already without-hesitation DE stand rise-come ASP.
 ‘She already stood up without hesitation.’

(Liu 1998: 47)

The serial verbs in (69) indicate a result state that the leaders got to know about the issue. The ones in (70) indicate a result that he is in a standing position.

When the context clearly indicates that the speaker is trying to stress the result, *le* has to follow $V_{\text{gen}}-V_{\text{deic}}$. For example, in (71), the context, including the adverbial *yijing* ‘already’ and the assertion in the end that ‘you cannot find him here’, indicates that the speaker wants to stress the fact that ‘he’ is not here any more, not to describe a on-going scene of him running back, hence, *le* after V_m becomes inappropriate.

- (71) a. Ta zuotian jiu yijing **pao hui-qu** le, ni dangran
 3sg yesterday already already run return-go ASP, you of-course
 zai zheli zhao bu dao ta.
 at here find unable arrive 3sg
- b. *Ta zuotian jiu yijing **pao le hui-qu**, ni dangran
 3sg yesterday already already run ASP return-go, you of-course
 zai zheli zhao bu dao ta.
 at here find unable arrive 3sg
 ‘S/He already run back yesterday. So of course you cannot find
 him/her here.’

The interpretation difference between the $V le V_{\text{gen}} V_{\text{deic}}$ and the $V V_{\text{gen}} V_{\text{deic}}$ *le* strings can be explained if we adopt the assumption that these two strings are the result of inserting $V_{\text{gen}} V_{\text{deic}}$ under Path and Res respectively.

Specifically, when the compound *jin lai* is under Path, we derive the $V_m le V_{\text{gen}} V_{\text{deic}}$ order as in (66). Since in this structure, only V moves to adjoin to Realise *le*, *le* functions on V only, yielding a reading that the action denoted by the

co-event verb is realised. But the compound under Path expresses a moving track and is not affected by the Realise head, so it at the same time adds a on-going scene reading to the realised event reading. All of these contribute to the final realised on-going scene reading. However, when *jin lai* is inserted under Res, denoting a result state, we derive the $V_m V_{gen} V_{deic}$ *le* order as in (65). Since V-Res head moves to *le*, *le* functions on the whole V-Res cluster, yielding a reading in which a result is realised.

In summary, the distribution of *le* in a $V_m V_{gen} V_{deic}$ string such as *zou jin lai* ‘walk enter come’ is explained by proposing two insertion positions, Res and Path, for the $V_{gen} V_{deic}$ compounds. Combining this new finding with the generalization we conclude in Section 3.4, we get 4.1.

Table 4.1: Insertion rules of the verbs in Mandarin DSVCs

Type of lexical item	Insertion position
V_{dis}/V_m	V
V_{gen}	Res/Path
V_{deic}	Res/Deic
$V_{gen}-V_{deic}$	Res/Path

In the next section we will see other cases showing $V_{gen} V_{deic}$ can be under Res or Path.

4.3 $V_1=V_{dis}$: the Word Order Alternations

Previously, we have analysed the serialising pattern beginning with V_{gen} and V_m respectively. Now we shall move to the ones starting with a transitive displacement verb, namely, $V_{dis} V_{deic}$, $V_{dis} V_{gen}$ and $V_{dis} V_{gen} V_{deic}$.

Recall that, the serialising pattern $V_{dis} V_{deic}$ and $V_{dis} V_{gen} V_{deic}$ allow the direct object of V_{dis} to appear after each verb, thus creating two groups of word order variants. The pattern $V_{dis} V_{gen}$ only allows the direct object to appear after V_{gen} , hence no word order alternation is available. I address the $V_{dis} V_{gen}$ pattern in Section 4.4. In this section, we focus on the two groups of word order alternation:

(72) Group 1

V_{dis} V_{deic} O	send come soup
V_{dis} O V_{deic}	send soup come

(73) Group 2

V_{dis} V_{gen} V_{deic} O	send enter come soup
V_{dis} O V_{gen} V_{deic}	send soup enter come
V_{dis} V_{gen} O V_{deic}	send enter soup come

We have also addressed that these variants can be divided into two types, i.e. VVO and VOV. The VOV type includes the V_{dis} O V_{deic} order in group 1 and the V_{dis} O V_{gen} V_{deic} order in group 2. The other variants belong to the VVO type. These two types of variants differ in four perspectives including telicity reading, the position of aspect *le*, compatibility with potential morphemes *de/bu*, and compatibility with negation *bu* and *mei*. The differences are summarised in Table 4.2.

Table 4.2: Differences between the VVO and VOV variants

	VVO	VOV
Telicity	telci	atelic
Position of <i>le</i>	VV <i>le</i> O	V <i>le</i> OV
compatibility with <i>de/bu</i>	Yes	No
compatibility with <i>bu</i> and <i>mei</i>	$\times bu, \surd mei$	$\surd bu, \surd mei$

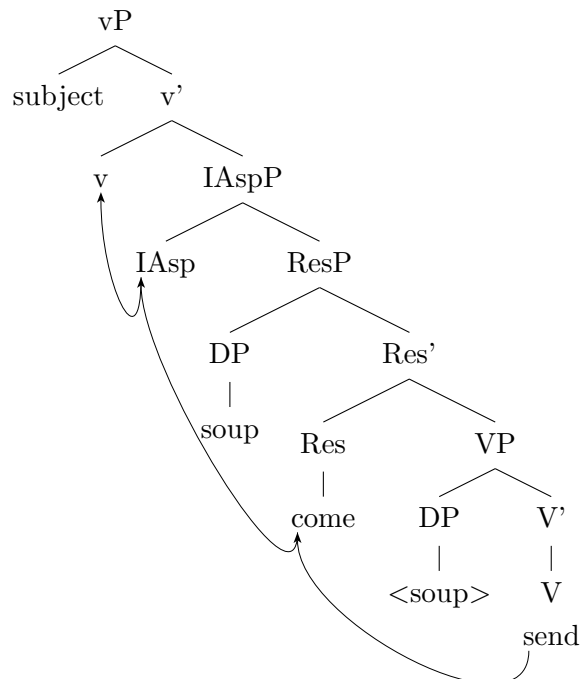
We discuss the derivation of each variant, and account for the syntactic and semantic divergence between each variant in the following Subsections 4.3.1 to 4.3.5.

4.3.1 Deriving the Word Order Alternations

Based on our theory, the word order alternations are the consequence of merging the directional verbs under different functional heads. Specifically, because of the similar properties as resultative SVCs in Mandarin, the VVO variants are instantiations of a Res structure in which the directional verb directly following the co-event verb is under Res. On the other hand, the VOV variants are instantiations of a Path structure, in which the directional verb is under Path.

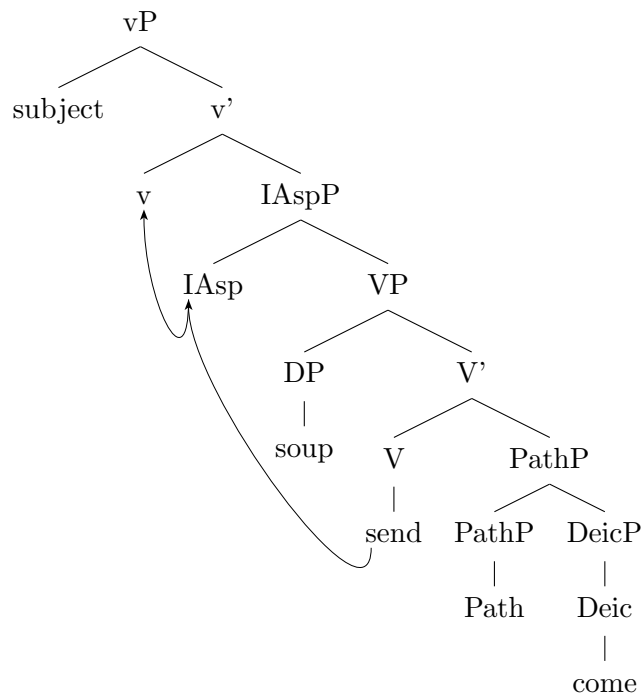
In the Group 1 variants, the $V_{dis} V_{deic} O$ order is of the VVO type, so it is derived by inserting the V_{deic} under Res. whereas the $V_{dis} O V_{deic}$ order is of the VOV type, so it is derived by merging V_{deic} under Deic. For example, to generate the serial verbs *song tang lai* ‘send come soup’, ‘send’ is inserted under the node V and ‘come’ under the head Res. The subject of the sentence is in the spec of vP because this is the position for the initiator, namely the person who does the soup-sending action. The spec of V and the spec of Res are both occupied by the direct object ‘soup’ because ‘soup’ is the undergoer of the action ‘send’ and the entity that holds the result state ‘being here’, which is encoded in *lai* ‘come’. As is illustrated in the previous sections, when the same DP serves as more than one event participant role, only the highest DP, which is ‘soup’ here, is pronounced. Then V undergoes cyclic head movement from V to Res, (Realise, if projected), IAsp and v, incorporating these heads on the way, so V will eventually be higher than the direct object, thus deriving the surface order ‘send come soup’. The tree diagram is shown in (74).

(74) Derivation of ‘send come soup’



On the other hand, the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ order, ‘send soup come’ is of the VOV type, which means it has a Path structure underneath. We have also argued that the V_{deic} s in Mandarin are under Deic or Res. In this case, a Path structure does not have ResP projected, hence, I argue that the V_{deic} *lai* is under the DeicP which itself is an adjunct attaching to the PathP. After the cyclic movement of V to IAsp and v, we derive the surface word order, as is illustrated in (75).

(75) Derivation for ‘send soup come’

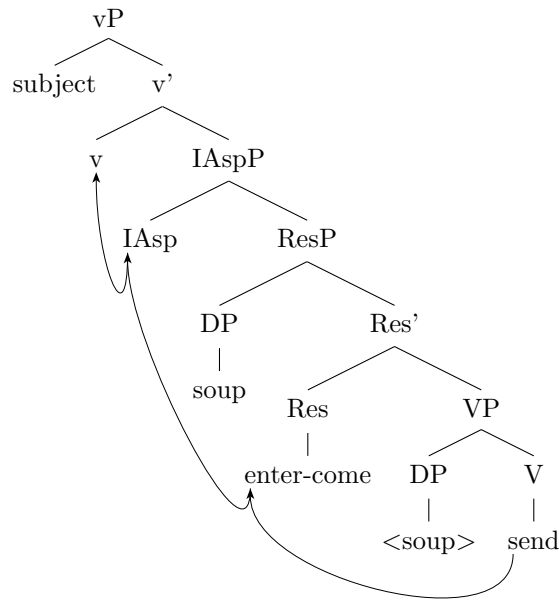
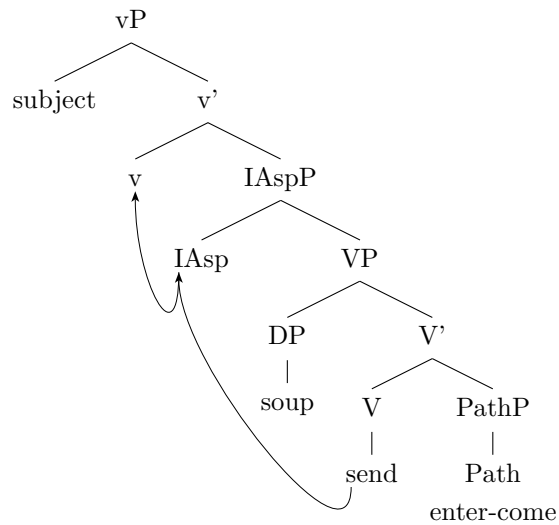


There is one observation to note here. In (75), Path is not filled with anything. Or we can say Path is filled with a null element which does not specify the detailed information of Path. Theoretically, this should cause some oddity in semantics. And indeed, this is confirmed by the empirical data. Native speakers suggest that the $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$ variant in Group 2 is generally preferred to the $V_{\text{dis}} \text{ O } V_{\text{deic}}$ variant in Group 1. For example, although we showed before that *song tang lai* ‘send soup come’ is grammatical, adding a V_{gen} before the V_{deic} , e.g. *song tang guo lai* ‘send soup cross come’, makes the verb string sound better for many speakers. If we try more displacement verbs, this preference of $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$ over $V_{\text{dis}} \text{ O } V_{\text{deic}}$ becomes more apparent. I show more pairs of sentences below where the ones with a single V_{deic} are judged as less preferred than the ones with a $V_{\text{gen}}\text{-}V_{\text{deic}}$ cluster.

- (76) a. ?Ta **ti** le yi ge zuqiu **qu**.
 he kick ASP one CL football go
 ‘He kicked the fot ball away.’
- b. Ta **ti** le yi ge zuqiu **chu-qu**.
 he kick ASP one CL football exit-go
 ‘He kicked a football outside.’
- (77) a. ?Ta **ji** le xuduo xin **lai**.
 he post ASP many letter come
 ‘He posted many letters here.’
- b. Ta **ji** le xuduo xin **guo-lai**.
 he post ASP many letter cross-come
 ‘He posted many letters over here.’

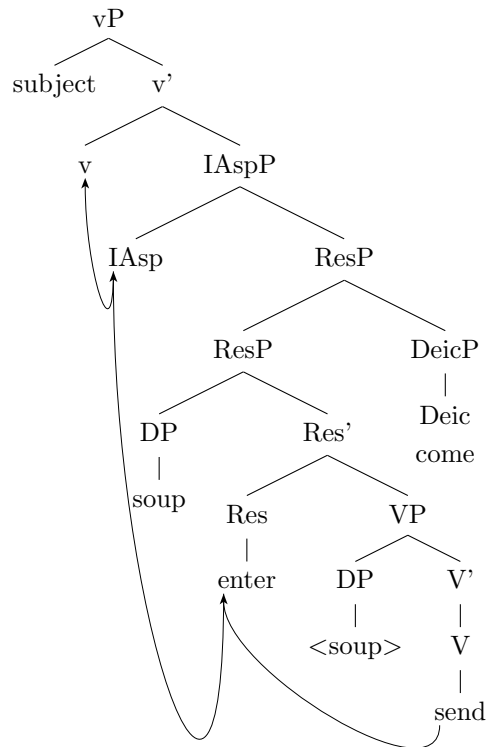
The preference for the $V_{dis} O V_{gen} V_{deic}$ string over the $V_{dis} O V_{deic}$ string shown above is due to the underlying structure where Path is filled with a null element which does not give specific path information.

The Group 2 variants are analysed in a similar way. The V_{dis} is still merged under the node V. In the $V_{dis} V_{gen} V_{deic} O$ and the $V_{dis} O V_{gen} V_{deic}$ variants, the V_{gen} - V_{deic} cluster is actually the compound we argued for in Section 4.1, because *le* cannot intervene between the V_{gen} and V_{deic} in these two variants. As a VVO type of variant, the $V_{dis} V_{gen} V_{deic} O$ variant inserts the compound V_{gen} - V_{deic} under the head Res, as is shown in (78). The variant $V_{dis} O V_{gen} V_{deic}$, on the other hand, has the V_{gen} - V_{deic} compound inserted under Path, as is shown in (79).

(78) $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ ('send enter come soup')(79) $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ ('send soup enter come')

In comparison, in the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ variant, the V_{gen} and V_{deic} are separated by the direct object. Besides, *le* can follow the V_{gen} in this variant. Following what we have argued in Section 4.1, this indicates that the variant $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ does not involve a $V_{\text{gen}}-V_{\text{deic}}$ compound. Instead, V_{gen} and V_{deic} are two lexical items inserted under different heads. Specifically, this variant can be viewed as a VVO order with a V_{deic} adjunct. Hence, the V_{gen} is under Res while V_{deic} is under DeicP , which itself is an adjunct adjoined to ResP , as is shown in (80).

(80) $V_{dis} V_{gen} O V_{deic}$ ('send enter soup come')



In Section 4.3.2 to Section 4.3.5, I show that this analysis can nicely capture the syntactic and semantic properties observed with each variant.

4.3.2 Telicity

In Section 2.2.2.1, we have used a couple of telicity tests as evidence to argue that the subtle semantic difference among the variants in Group 1 and Group 2 word order alternations lies in telicity. And our conclusion is that the VVO variants are telic while the VOV variants are atelic, as is shown in Table 4.3.

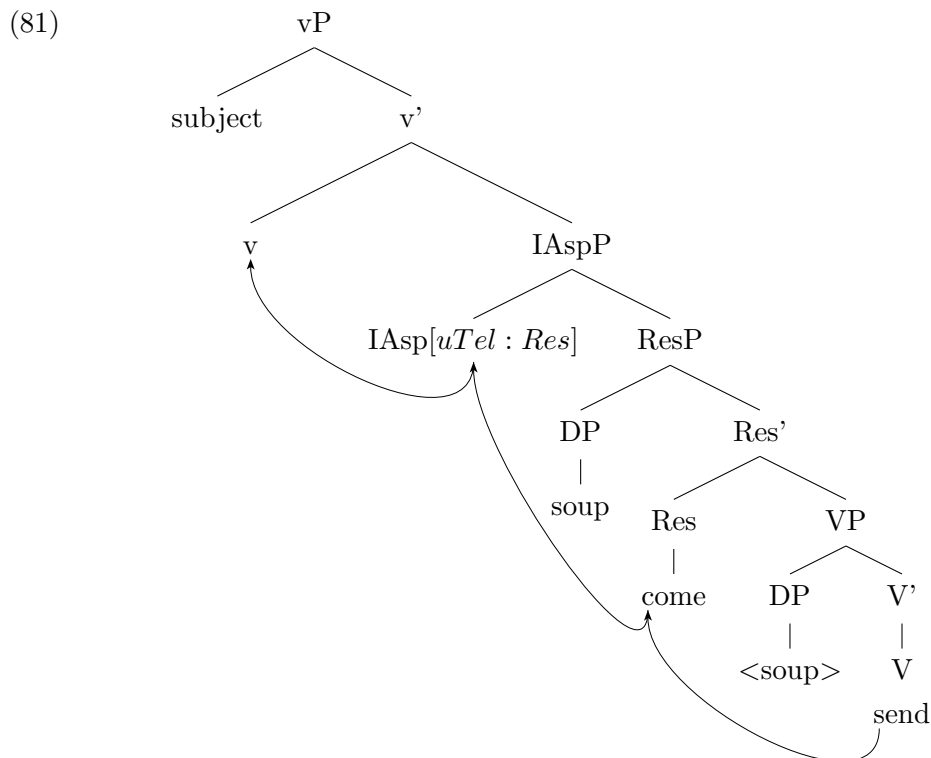
Table 4.3: The telicity value of each variant

The word order	telicity
$V_{dis} V_{deic} O$	telic
$V_{dis} O V_{deic}$	atelic
$V_{dis} V_{gen} V_{deic} O$	telic
$V_{dis} O V_{gen} V_{deic}$	atelic
$V_{dis} V_{gen} O V_{deic}$	telic

This can be easily captured by the system we have developed. As is proposed in Section 3.3.2.4, telicity is calculated in IAsP through an unvalued feature [Tel:] whose value is determined by the value given by Res/Path and Realise. When no RealiseP is projected, in a Res structure, [Tel:] is valued by Res, which yields the telic reading, while in a Path structure, [Tel:] is valued by Path, which yields the atelic reading. When RealiseP is projected, [Tel:] can receive a value bundle [Tel: Res+Realise] or [Tel: Path+Realise], both of which lead to telic interpretation.

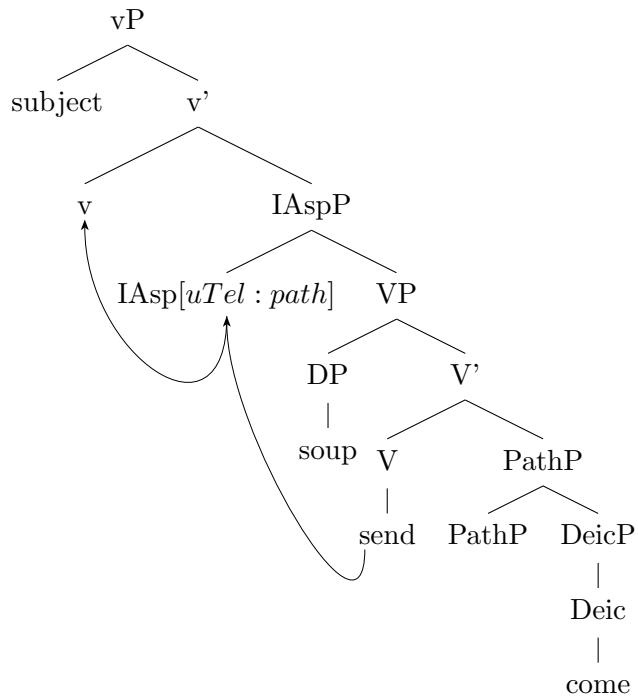
Now I illustrate the tree diagrams for each word order variant (without *le* inserted) the values IAsp receive in each case.

In the $V_{\text{dis}} V_{\text{deic}} O$ order, ResP is projected. Res values the unvalued feature [uTel:] on IAsp as [Tel: res], which is interpreted as telic in semantics, as is shown in (81).



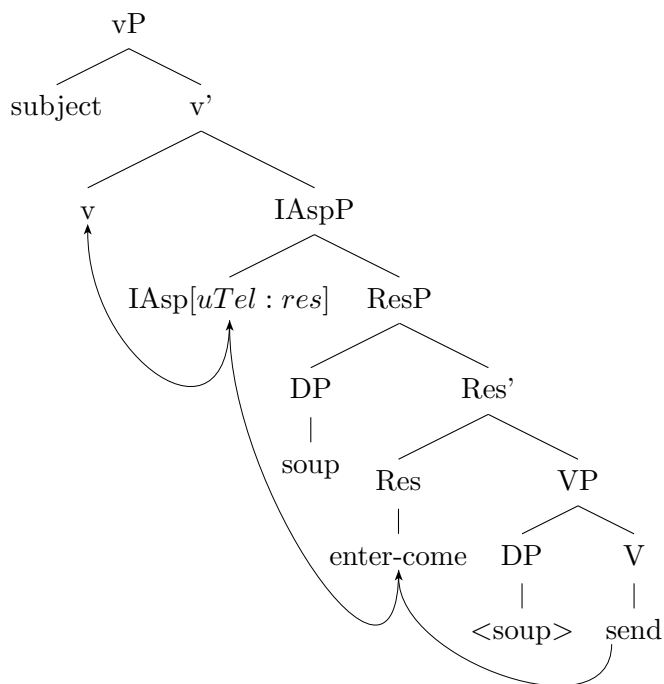
In the $V_{\text{dis}} O V_{\text{deic}}$ order, however, it is PathP that is projected instead of ResP, so Path values [uTel:] as [Tel: Path], which is interpreted as atelic in semantics, as is shown in (82).

(82)

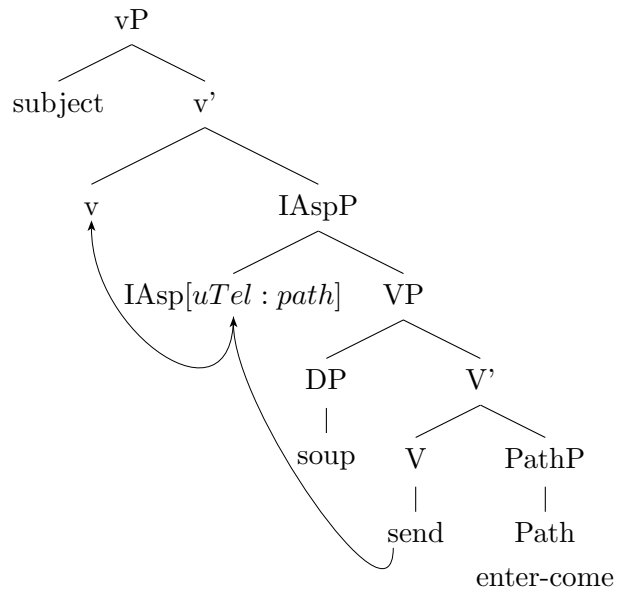


Likewise, both the $V_{dis} V_{gen} V_{deic} O$ and $V_{dis} V_{gen} O V_{deic}$ variants have ResP projected, hence they are telic. While the $V_{dis} O V_{gen} V_{deic}$ variant has PathP projected, hence it is atelic. The valuation of IAsp in the Group 2 variants is illustrated in (83) to (85).

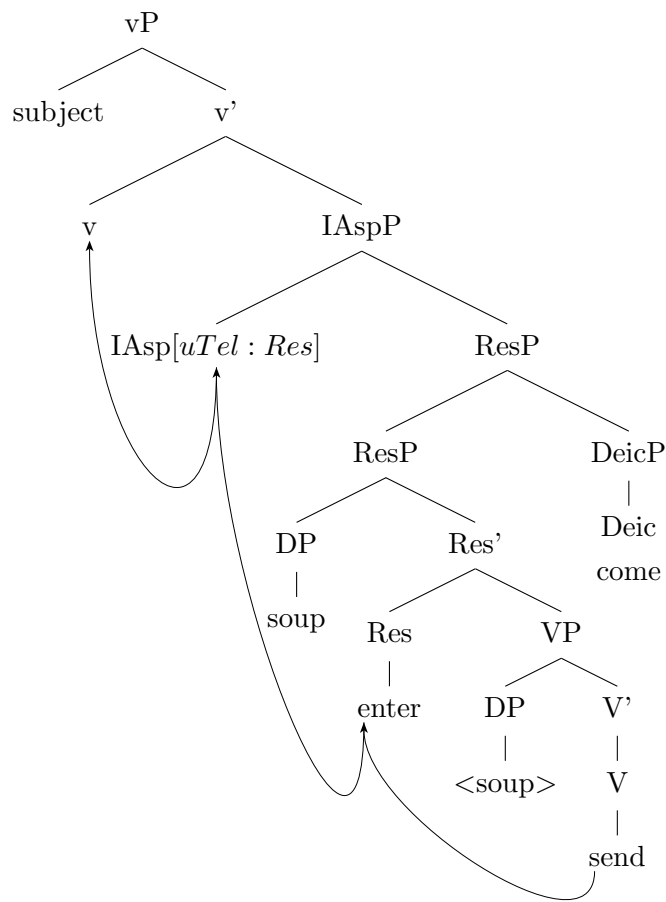
(83) $V_{dis} V_{gen} V_{deic} O$



(84) $V_{\text{dis}} \ O \ V_{\text{gen}} \ V_{\text{deic}}$



(85) $V_{\text{dis}} \ V_{\text{gen}} \ O \ V_{\text{deic}}$



4.3.3 Position of *le*

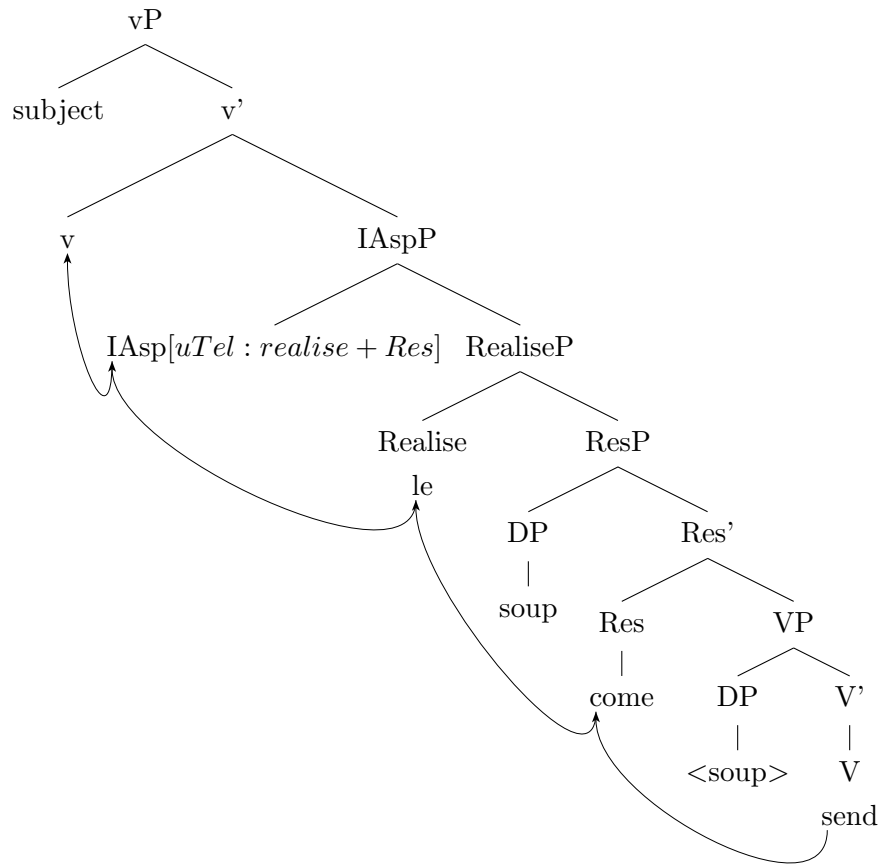
The position of ASP *le* and its semantic effect in each word order is summarized in Table 4.4:

Table 4.4: The position of *le* and its semantic effect

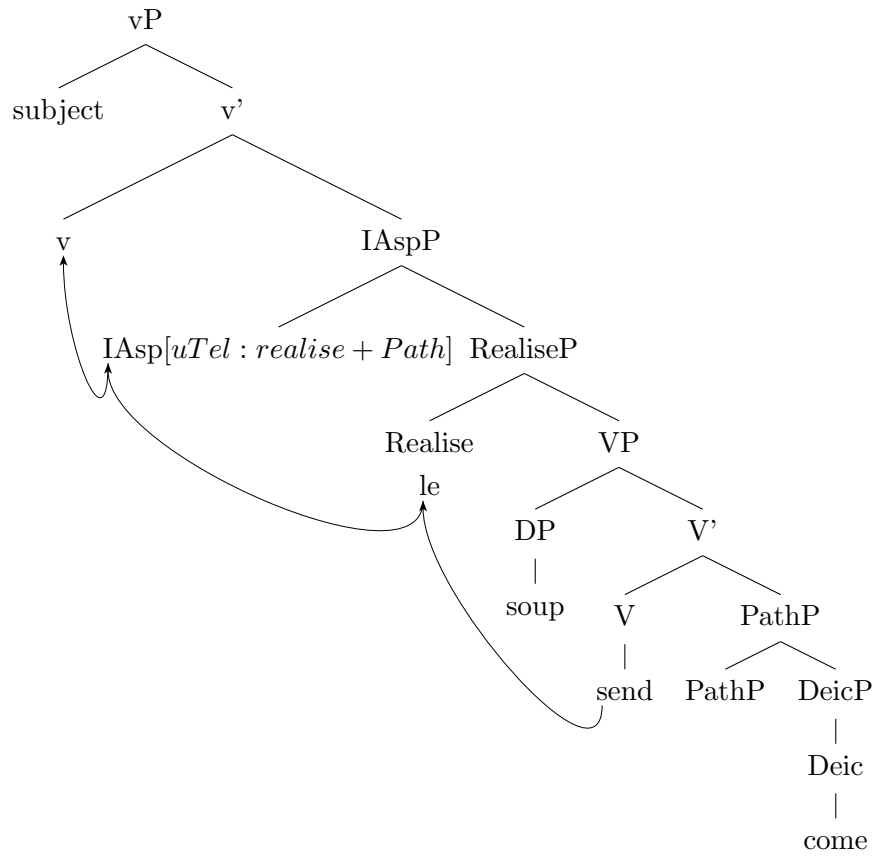
The word order	Position of <i>le</i>	Effect of <i>le</i>
$V_{dis} V_{deic} O$	$V_{dis} V_{deic} le O$	does not change telicity
$V_{dis} O V_{deic}$	$V_{dis} le O V_{deic}$	changes telicity
$V_{dis} V_{gen} V_{deic} O$	$V_{dis} V_{gen} V_{deic} le O$	does not change telicity
$V_{dis} O V_{gen} V_{deic}$	$V_{dis} le O V_{gen} V_{deic}$	changes telicity
$V_{dis} V_{gen} O V_{deic}$	$V_{dis} V_{gen} le O V_{deic}$	does not change telicity

Basically, in the VOV type of variants, namely the atelic ones, *le* follows the displacement verb and converts the atelic reading to telic. In the VVO type of variants, namely the telic ones, *le* follows the directional verb(s) and does not change the telicity value. This can also be derived straightforwardly with our theory. Following our theory, *le* is inserted under the head of RealiseP. In a Res structure, V_{dis} is inserted under the V head and directional verbs are under the Res head. The V head moves to Res and Realise, incorporating these heads into the head complex V-Res-Realise. As a result, the word order in surface is $V_{dis} V_d le O$. When the structure involves a PathP, only V raises to Realise, resulting in the head complex V-Realise. And in these structures directional verbs are under Path, hence the surface order we see is $V_{dis} le O V_d$. Since *le* values the [Tel:] feature on IAsp as [Tel:realise], which is invariably interpreted as telic no matter the other value on [Tel:] is res or path (see the discussion in Section 3.3.2.4), once *le* is added, all word orders are telic. Below I show the derivation of each variant with *le* inserted and the valuation of IAsp in each case.

(86) and (87) represent respectively the $V_{dis} V_{deic} O$ order and the $V_{dis} O V_{deic}$ order in Group 1 with *le* added.

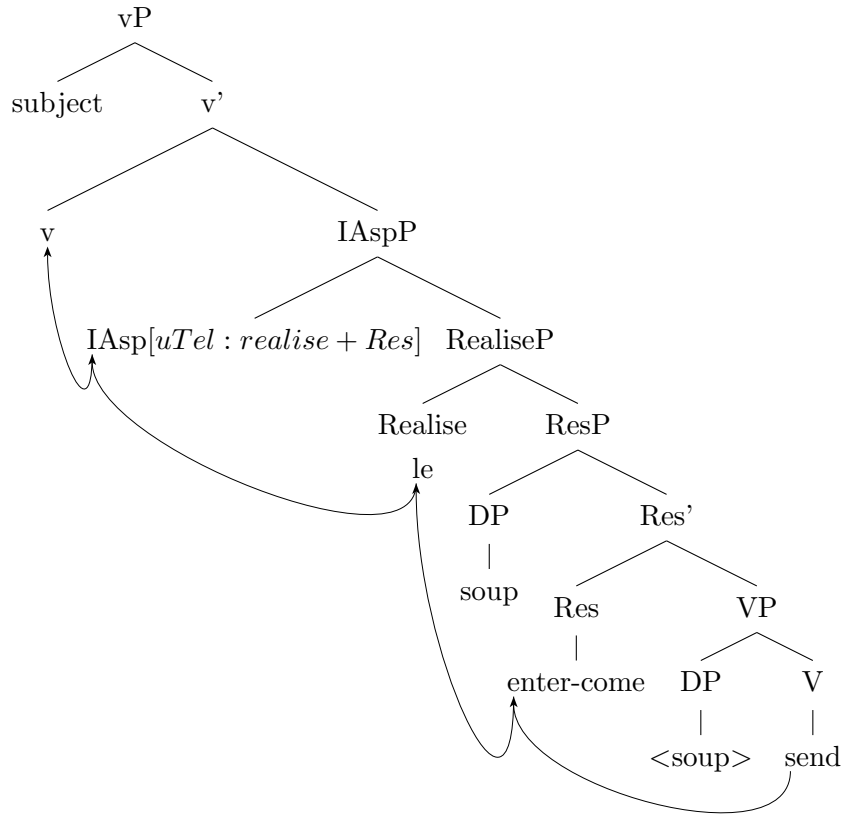
(86) V_{dis} V_{deic} **le** **O** 'send come *le* soup'

(87) V_{dis} **le** **O** V_{deic} ‘send *le* soup come’

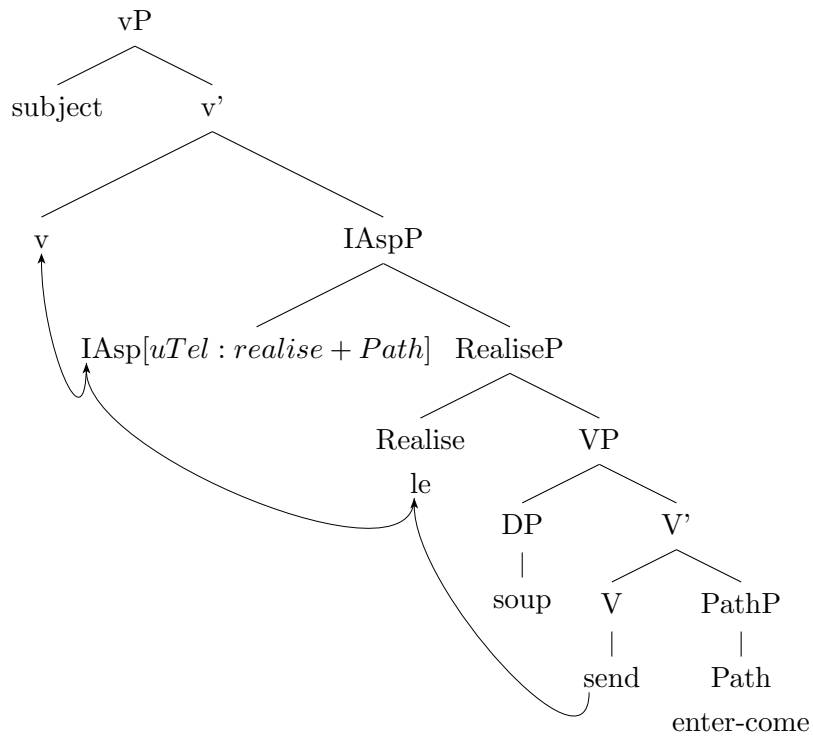


(88)-(90) illustrate the three variants in Group 2 with *le* added respectively.

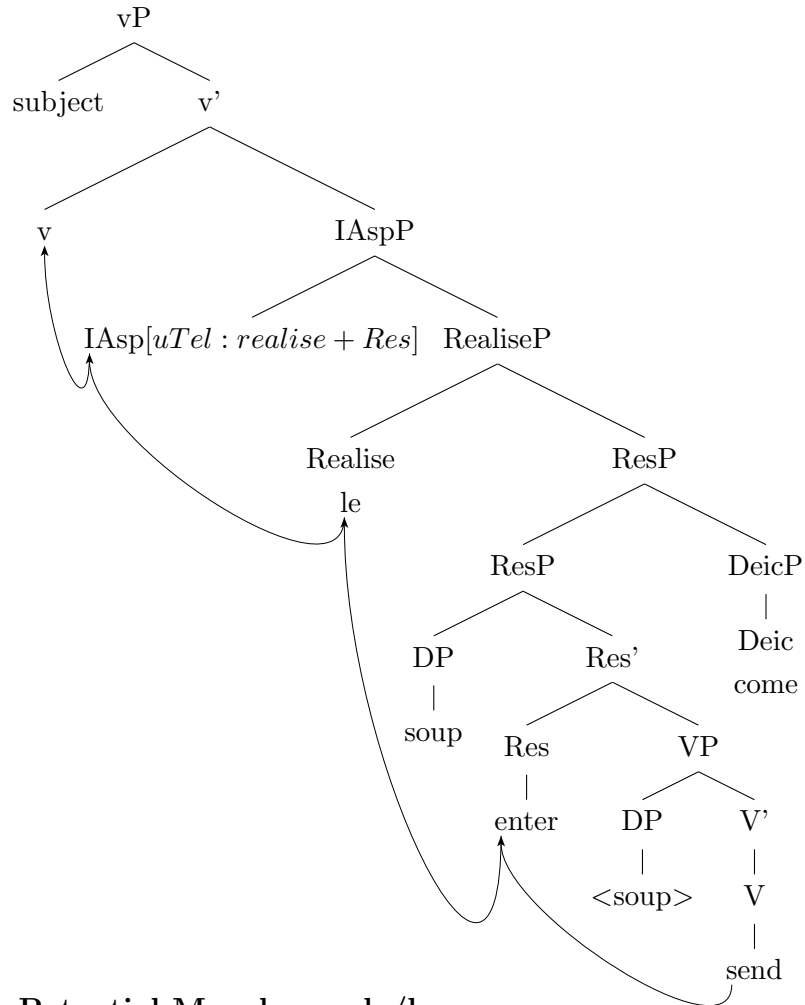
(88) $V_{dis} V_{gen} V_{deic} le O$ 'send enter come *le* soup'



(89) $V_{dis} le O V_{gen} V_{deic}$ 'send le soup enter come'

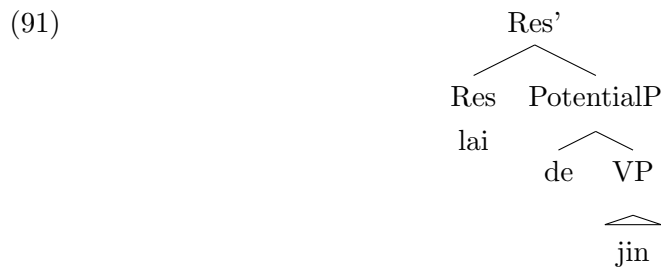


(90) V_{dis} V_{gen} **le** **O** V_{deic} ‘send enter *le* soup come’



4.3.4 Potential Morpheme de/bu

In Section 4.1.3, we already tackled the potential morpheme in the middle of the verb string V_{gen} V_{deic} , e.g. *jin de lai* ‘enter able come’, *chu bu qu* ‘exit unable go’, etc. We analyse it as a head of a projection between VP and ResP, expressing whether the result of V is attainable or not. Roughly, *jin de lai* is analysed as in (91).



By assumption, the PotentialP headed by *de/bu* can only appear when a ResP is projected. The evidence for this postulation is that an activity verb can never take *de/bu*. However, when a resultative predicate is added, *de/bu* is licensed (see examples in Section 4.1.3).

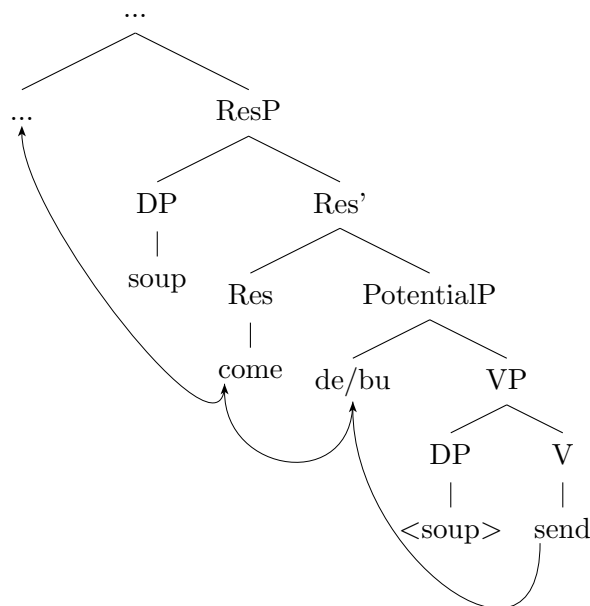
In other words, only in the Res structure can a PotentialP be projected. Then the compatibility between the word order variants and the potential morpheme straightforwardly follows: only the ones with ResP projected, namely the VVO type, allow *de/bu*, which is indeed what we have found in Section 2.2.2.4, as is shown in Table 4.5.

Table 4.5: Compatibility with the potential morphemes *de/bu*

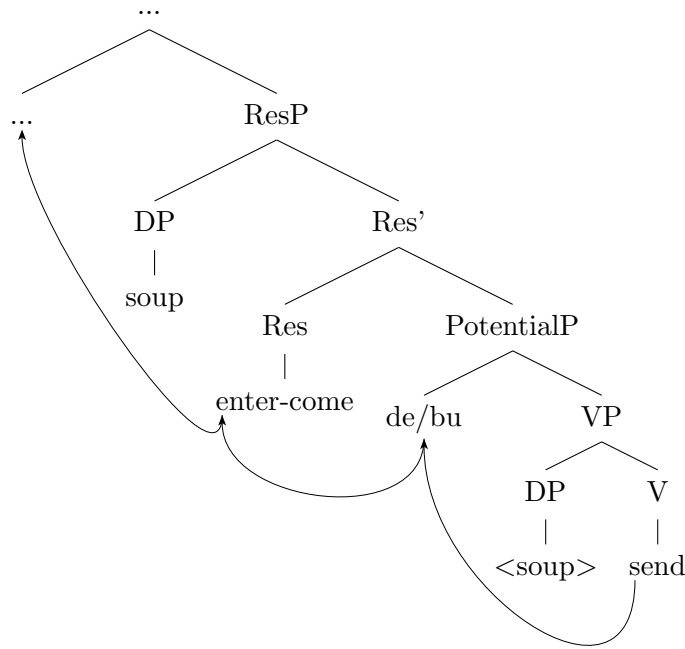
The word order	compatibility with <i>de/bu</i>
$V_{\text{dis}} V_{\text{deic}} O$	yes
$V_{\text{dis}} O V_{\text{deic}}$	no
$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$	yes
$V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$	no
$V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$	yes

Consequently, only the VVO type of variants can have a tree representation with PotentialP projected; the VOV type of variants do not permit the merger of PotentialP. I show the tree diagrams for the VVO variants with PotentialP below:

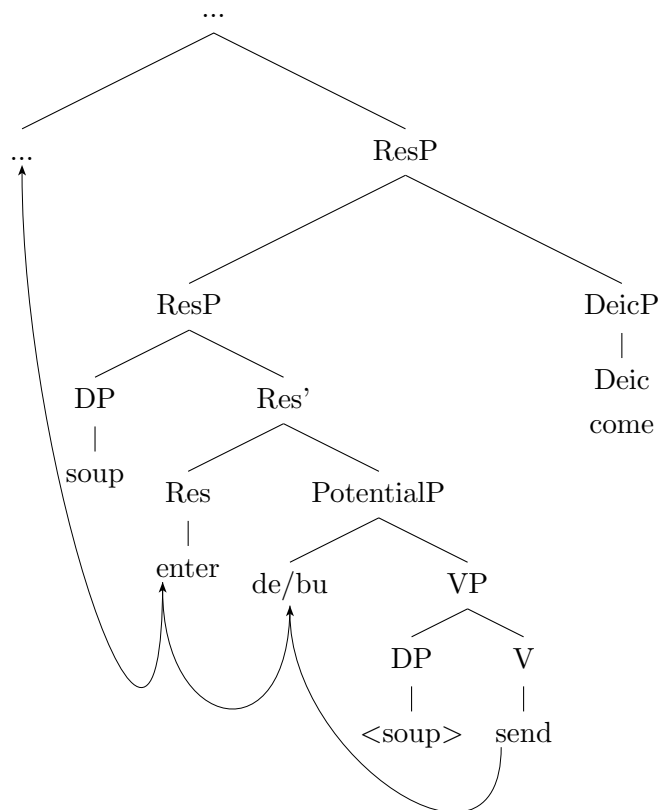
(92) V_{dis} *de/bu* V_{deic} O ‘send *de/bu* come soup’



(93) V_{dis} **de/bu** V_{gen} V_{deic} **O** 'send *de/bu* enter come soup'



(94) V_{dis} **de/bu** V_{gen} **O** V_{deic} 'send *de/bu* enter soup come'



4.3.5 Negation

Remember that we addressed in Section 2.2.2.3 that Mandarin has two negation markers, *bu* and *mei*. We observed that among the word order variants, all the word orders are compatible with *mei*, but only the atelic ones (VOV type) are compatible with *bu*. Then can this distinction be related to the syntactic structures underlying the telic word orders and atelic word orders?

First of all, we shall consider the syntactic realisation of the negation marker *bu* and *mei*.

As is mentioned in Section 2.2.2.3, *bu* and *mei* demonstrate differences with regard to distributivity and interpretation. In terms of distributivity, *bu* cannot co-occur with any aspectual maker, while *mei* can co-occur with the so called durative marker *zhe* and the experiential aspect maker *guo*, but not with *le*. The examples are repeated below:

- (95) a. *Wo bu dai zhe maozi.
 I NEG wear DUR hat
 'I'm not wearing a hat.'
- b. *Wo bu kan guo dianying.
 I NEG look EXP movie
 'I have not watched movies.'
- c. *Wo bu kan le dianying.
 I NEG look ASP movie
 'I did not watch the movie/movies.'
- (96) a. Wo mei dai zhe maozi.
 I NEG wear DUR hat
 'I'm not wearing a hat.'
- b. Wo mei kan guo dianying.
 I NEG look EXP movie
 'I have not watched movies.'
- c. Wo mei kan (*le) dianying.
 I NEG look ASP movie
 'I did not watch the movie/movies.'

In terms of interpretation, *bu*-VP has a habitual or volitional reading while *mei*-VP only has the perfective reading.

- (97) Xiaoming bu chi xiangjiao.
 Xiaoming NEG eat banana
 ‘Xiaoming does not have the habit of eating bananas.’/ ‘Xiaoming does not want to eat bananas.’
- (98) Xiaoming mei chi xiangjiao.
 Xiaoming NEG eat banana
 ‘Xiaoming did not eat bananas.’

There are various solutions in analysing *bu* and *mei* in the literature.

Huang and Earnst both analyse *bu* as a clitic in order to account for two central facts: *bu* is unable to occur with *le*; *bu* is incompatible with a post-verbal *de* phrase.

- (99) *Xiaoming bu kan le na bu dianying.
 Xiaoming NEG look ASP that CL movie
 ‘Xiaoming did not watch that movie.’
- (100) *Xiaoming bu pao de hen kuai.
 Xiaoming NEG run DE very fast
 ‘Xiaoming does not run very fast.’

Huang (1988) attributes the incompatibility between *bu* and the aspect marker *le* as well as the *de* phrase to semantic anomaly. He posits that *bu* is a bound morpheme in Infl that would cliticize onto the following verb, forming an immediate construction with V^0 . When this immediate construction is formed, the aspect marker *le* or *de* phrase takes scope over it, which leads to semantic anomaly: *bu-V* is a non-event and a non-event cannot be perfective or cannot be done in such a manner.

Similarly, Earnst (1995) argues that *bu* is a proclitic on the following verb and requires unbounded situations. The incompatibility with *le* is because any situation with *le* is bounded and thus violates the semantic requirement. The impossibility for *bu* to occur with *de* phrase is attributed to the failure of cliticization. According to him, the *de* phrase is assumed to be base-generated at the preverbal adjunct position and is later moved to the post-verbal position, the XP trace left by the *de* phrase blocks the cliticization of *bu* onto the verb.

Lin (2003) ascribes the distribution of *bu* and *mei* to their aspectual selection requirements. Specifically, *bu* aspectually selects as its complement a stative situation that requires no input of energy in order to obtain that situation while *mei* aspectually selects an event as its complement. Lin does not specify whether the aspectual selection is directly related to syntax. And his account “places much more constraints on the definition of ‘state’ than the one in the normal sense, and consequently leads to an excessively broad definition of ‘event’”, as is criticized in Xiang (2013:261).

Xiang (2013) proposes a syntactic account for the distribution of *bu* and *mei*. Based on the observation that Mandarin Chinese allows aspect marker clusters in the order of V-EXPERIENTIAL-PERFECTIVE, e.g. *chi-guo-le*, she suggests that the aspectual system in Mandarin contains multiple projections, and in particular, the perfective *-le* c-commands the remnant, as is illustrated in (101).

(101) $[_{\text{Asp}_1'} \text{le} [_{\text{Asp}_2\text{P}} [_{\text{Asp}_2'} \text{zhe/guo VP}]]]$

She argues that *mei* is located at the higher aspect head while *bu* stays below aspect, as is illustrated in (102). She assumes that *mei* is competing for the same position with *le* in order to account for the fact that *mei* cannot co-occur with *le*, but it can co-occur with other aspect markers.

(102)

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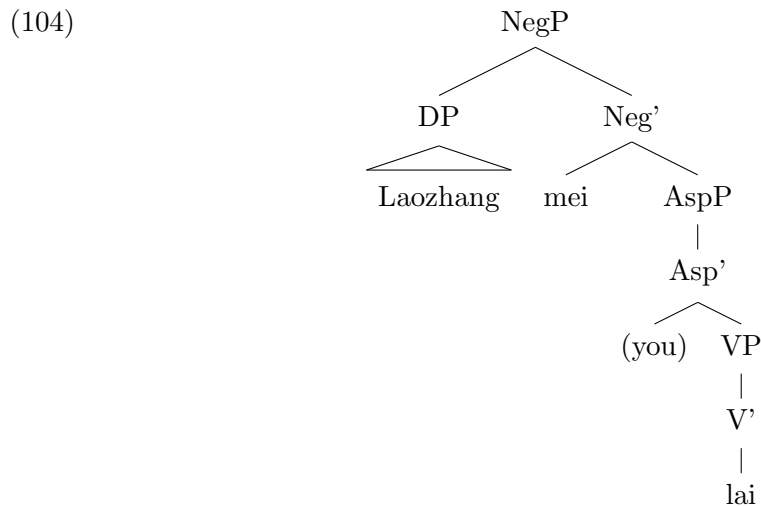
graph TD
    Asp1_prime["Asp1'"] --- mei_le["mei/le"]
    Asp1_prime --- Asp2P["Asp2P"]
    Asp2P --- Asp2_prime["Asp2'"]
    Asp2_prime --- zhe_guo["zhe/guo"]
    Asp2_prime --- NegP["NegP"]
    NegP --- bu["bu"]
    NegP --- VP["VP"]
    VP --- V["...V..."]
  
```

The puzzle that *bu* cannot co-occur with any aspect markers while *mei* can co-occur with *zhe/guo* now can be accounted for by Head Movement Constraint. *bu* intervenes between Asp_2 and V, thus blocking V- Asp_2 movement while *mei* is merged higher, hence it does not block the head movement.

Similar syntactic analysis is proposed by He (2011:300). He also proposes that *bu* projects a NegP between VP and AspP while *mei* is merged higher in the structure. Differing from Xiang, He suggests that *mei* does not compete for the same position as *le*. Instead, *mei* heads another NegP above the AspP headed by an optionally pronounced morpheme YOU, which is competing for the same position as *le*. The evidence of this YOU morpheme is that *you* can be optionally inserted between *mei* and the verb following *mei*:

- (103) Laozhang mei (you) lai.
 Laozhang NEG ASP come
 ‘Laozhang did not come.’

He’s analysis for *mei* is shown in (104).



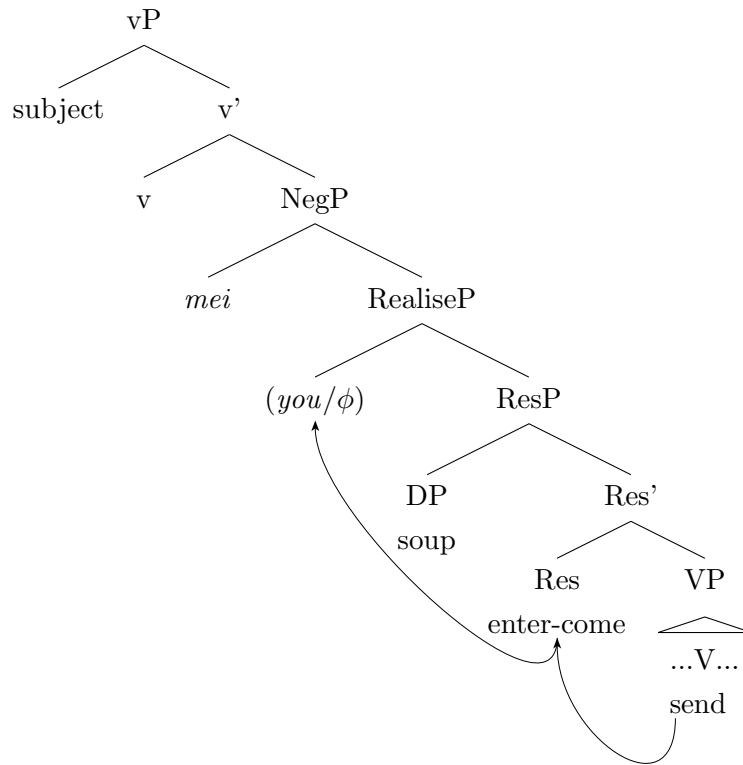
I adopt Xiang and He’s analysis for *bu* and He’s analysis for *mei* and integrate these analyses into our theory to account for our puzzle that *bu* cannot take the VVO pattern word order variants while *mei* can take all the variants.

I agree that *mei* is merged higher than *bu* and that *mei* heads a NegP above the projection headed by YOU. Since YOU is competing for the same position as *le* and in our system *le* is under Realise, so *mei* is merged above RealiseP.

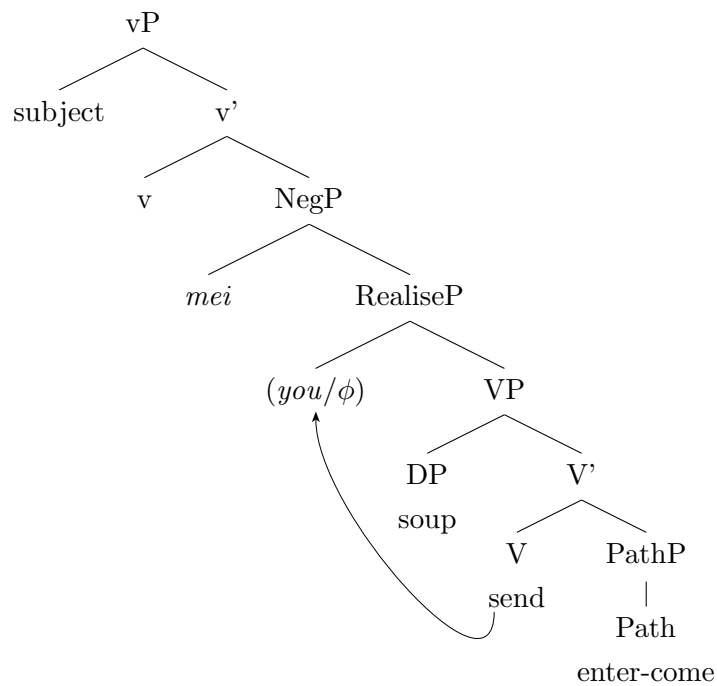
Now we add the newly proposed NegP headed by *mei* to the VVO and VOV type of variants respectively, as is shown in (105) and (106).²

²Since IAspP is irrelevant to the discussion here, we omit IAspP in these trees just for simplicity.

(105)



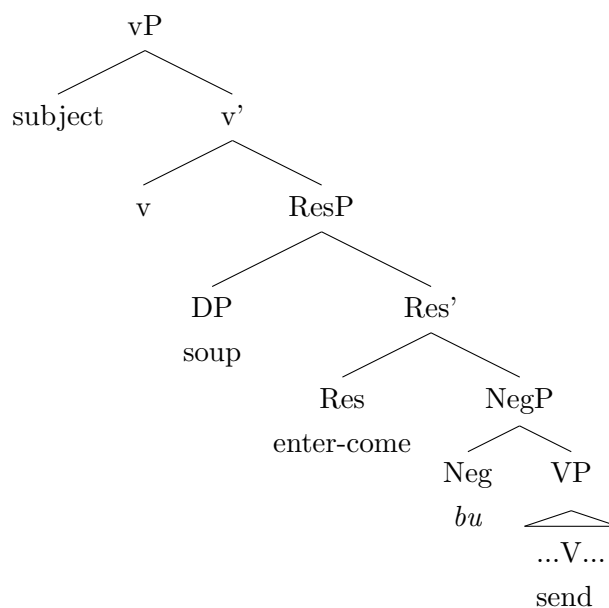
(106)



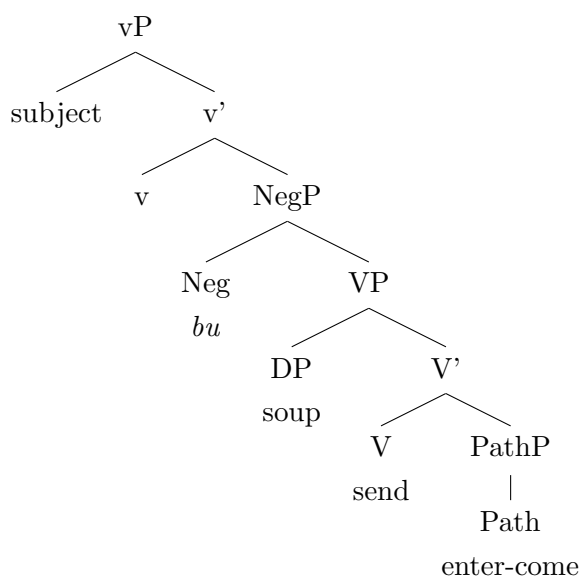
Since *mei* is higher than **ResP**, nothing in the tree blocks the head movement from **V** to **Res** in (105). There is also nothing in (106) that results in structure crash. Therefore, we see on surface that *mei* is compatible with both types of variants.

In comparison, the other negation marker *bu* is above VP. And I further suggest that in our system it is between VP and ResP if ResP is projected. The VVO and VOV variants with a NegP headed by *bu* can be represented in (107) and (108) respectively.

(107)



(108)



We can see that in (107), NegP intervenes between ResP and VP, hence it blocks the V to Res movement. We proposed at the end of Section 3.3.2.5 that V to Res movement is triggered by an [uV] feature on Res. Now this movement

is blocked, so the [uV] cannot be satisfied, which leads to the crash of the derivation. This idea is coherent with Xiang's proposal shown in (102): the fact that *bu* cannot co-occur with all the aspect markers is because *bu* blocks V to move to the higher Asp heads. In (108), there is no ResP projected, so the structure would not crash for the same reason. This is the syntactic reason why *bu* is not compatible with the VVO type of variants, but compatible with the VOV type.

Here I would like to compare the functional projection PotentialP, which we proposed in Section 4.1.3 for the potential morpheme *de/bu*, with the NegP headed by *bu*. Their positions are both between VP and ResP, but note that PotentialP only occurs in the structures with ResPs projected. PotentialP and NegP have different behaviour in terms of head movement in our theory. The Potential head does not block the V to Res head movement. Actually we have shown in Section 4.3.4 that V moves to Potential and Res cyclically and picks up these heads to form the complex head V-Potential-Res. However, Neg blocks the V to Res movement. This is not entirely stipulative. By hypothesis, NegP and PotentialP have different functions. NegP negates the event denoted by VP while PotentialP denotes whether the result state expressed by ResP is attainable. It is reasonable to assume that Neg^o and Potential^o are specified with different features related to head movement. For instance, we can assume that Potential bears a [uV] feature that triggers the head movement while Neg does not bear such a feature.

There are two technical problems left in (108) though. Firstly, our theory assumes that V still raises to v. In (108), *bu* blocks this movement still. Secondly the direct object is in the spec of VP, which would result in the wrong linear order *bu*-O-V.

For the first problem, it suffices to say in this thesis that the uninterpretable [uV] feature on v is satisfied by agree, so V does not necessarily have to move to v.

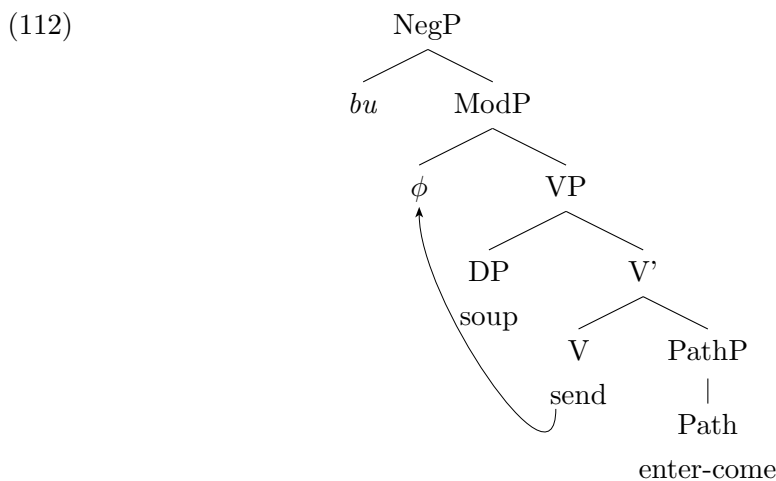
To account for the second technical problem, I suggest that there is another functional projection between VP and NegP which is possibly headed by a modal. The evidence is that *bu*+VP can also indicate volitional meaning apart from a habitual reading. The silent modal can be realised by overt modals such as *xiang*, *yuán* 'want, would like'. For example:

- (109) Wo jintian bu (xiang) chifan.
 I today NEG (want) eat.
 ‘I don’t want to eat today.’
- (110) Xiaoming bu (yuan) bang wo xi yifu.
 Xiaoming NEG (would-like) help I wash clothes
 ‘Xiaoming doesn’t want to help me to wash clothes.’

Huang (1988) points out that these cases contain an empty volitional or future modal verb. He (2011:300) also adopts a similar approach in which a ModP headed by the modal such as *xiang* ‘want’, *yuan* ‘would like’ is projected between the NegP headed by *bu* and VP. Looking back to our data, the string $bu V_{dis} O V_{deic}$ and $bu V_{dis} O V_{gen} V_{deic}$ also yield a volitional reading rather than a habitual reading.

- (111) Xiaoming bu song tang lai/jin-lai.
 Xiaoming NEG send soup come/enter-come
 ‘Xiaoming doesn’t want to bring in the soup.’ / #‘Xiaoming doesn’t have the habit of bringing the soup.’

This strongly suggests that there is an empty modal between *bu* and these VPs. The surface order $bu-V_{dis}-O-V_d$ is the result of V to Mod movement, represented in (112):



4.4 V1=V_{dis}: the V_{dis} V_{gen} Pattern

In Section 4.3, we have discussed the serialising patterns V_{dis} V_{deic} and V_{dis} V_{gen} V_{deic}, which allow word order alternations. In this section, we investigate the last serialising pattern that begins with a V_{dis}, namely the pattern V_{dis} V_{gen}. As we have addressed in the beginning of this chapter, there are two puzzling issues related to this serialising pattern. Firstly, this pattern only allows the direct object to follow the verb string, namely, V_{dis} V_{gen} O. V_{dis} O V_{gen} is ungrammatical unless a locative object is added after the V_{gen}, namely, V_{dis} O V_{gen} LocO is allowed. Secondly, V_{gen}s are often interpreted metaphorically when they directly follow the V_{dis}, but the metaphoric reading cannot be obtained when V_{gen} is separated from V_{dis} by a direct object. These pieces of empirical data lead to two questions for us to explore:

1. What bans the word order alternation in this serialising pattern?
2. What is the relation between the metaphoric reading of the directional verbs and their syntactic positions?

Section 4.4.1 addresses the first question and Section 4.4.2 discusses the second one.

4.4.1 The Missing Word Order Alternation

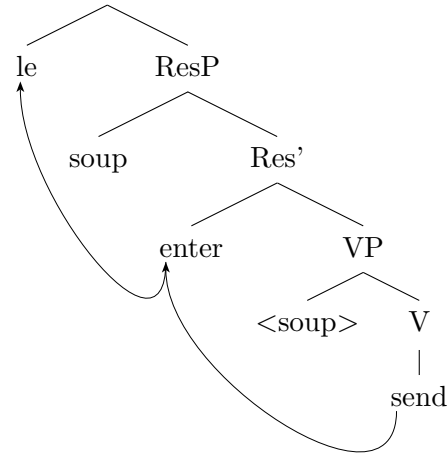
We start with the first question, namely, what bans the word order alternation in the serialising pattern V_{dis} V_{gen}? Specifically, why is the V_{dis} V_{gen} O order grammatical while the V_{dis} O V_{gen} order is ungrammatical? And why can a locative object save the V_{dis} O V_{gen} order? In other words, why is V_{dis} O V_{gen} LocO licensed? The relevant examples are illustrated in Table 4.6.

Table 4.6: The distribution of the direct object in V_{dis} V_{gen}

V _{dis} V _{gen} O	send enter soup
*V _{dis} O V _{gen}	*send soup enter
V _{dis} O V _{gen} LocO	send soup enter room

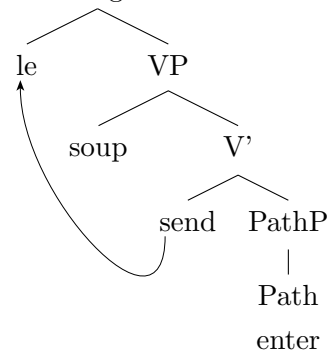
Following our theory, the string V_{dis} V_{gen} O, such as *song jin tang* ‘send enter soup’, can be represented in (113), where ‘enter’ is inserted under Res.

(113) The grammatical order ‘send enter soup’



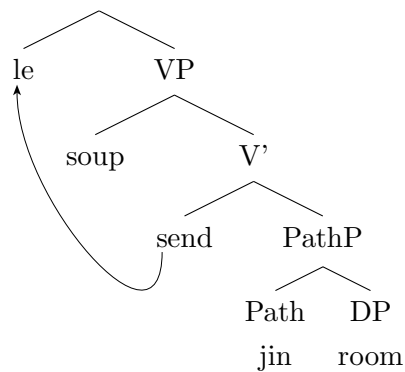
The ungrammatical string V_{dis} O V_{gen} , such as *song tang jin* ‘end soup enter’, should be represented as in (114), where ‘enter’ is inserted under Path.

(114) The ungrammatical order ‘send soup enter’



(114) can not converge unless a locative object is added, which means the structure (115) is licensed.

(115)



This suggests that when V_{gen} *jin* ‘enter’ is under Res, it does not obligatorily require a locative DP inserted as its argument, but when *jin* is under Path, it obligatorily requires a locative DP argument. If we pursue the traditional projectionist view, we can assume that there are two *jins*, one of which c-selects a locative DP while the other does not have this selectional feature. However, from a constructionist view, we should avoid specifying selection features on the lexical items. Instead, I suggest that the locative object is required by the semantic need of the PathP

The basic idea is that since PathP is constructed to provide the trajectory information, the elements in the PathP must clearly describe a moving track. The $V_{\text{gen}}-V_{\text{deic}}$ compounds involve a null locative notion, so the moving track is easy to be built in the cognitive system. However, a single V_{gen} , such as *jin* ‘enter’, is inserted under Path without a locative object, the listener can only understand that the object is moving into some location, which can be in any random direction. Only when a locative complement, such as ‘room’, is added, the moving track of the object is clear, which is ‘into that room’.

This argument is somewhat similar to the argument we made for the locative DP in the ResP domain. Res is in charge of describing a final state, so as long as the world knowledge can construe a final state reading, the sentence would be accepted. Remember that in Section 4.1 I propose that when the Res head is filled by a V_{gen} , the semantics first tries to interpret it as describing a path and expects a locative DP to close this path. If the locative DP is provided, a result location reading is construed. If no locative DP is provided, the result location reading fails, but the semantics does not immediately give up. It would seek a metaphoric/idiomatic way to interpret the V_{gen} . If it manages to do so, the sentence remains felicitous. The latter possibility is restricted to the cases where the conversation participants are well aware of the location missing in the sentence. I used an example in Section 4.1, *qiu jin le* ‘ball enter ASP’. It is fine to omit the locative object because people are aware that the missing locative DP refers to the football goal or basketball basket, hence, *jin* is interpreted metaphorically as ‘score’. We can apply this idea here as well.

In the case of the word order $V_{\text{dis}} V_{\text{gen}} O$, e.g. *song jin tang* ‘send enter soup’, the semantics first tries to interpret the V_{gen} *jin* as a path with a goal, but it fails to find the relevant locative object, hence the result location meaning fails. Then the semantics seeks another possible reading: a metaphoric reading. This is possible as long as the participants are well aware of the location which is

supposed follow the V_{gen} . For example, when people are watching a TV show in which a group of nobles are sitting in a big room. Some maid is bringing food into this room. Then one member in the audience asserts (116) in which no location is specified, but everyone knows the location is the room. In other words, *jin* in (116) is metaphorically interpreted as ‘enter the room’.

- (116) Kan! nvpu song jin le shiwu!
 look! maid send enter ASP food
 ‘look! The maid brought in the food.’

The other combinations of V_{dis} V_{gen} O can also be construed in this way. For example, in (117), the V_{gen} *chu* is not followed by an overt locative object. However, according to the context, it can be interpreted as something like ‘out of one’s possession’.

- (117) Xiaoming **na chu** le yi ba dao.
 Xiaoming take exit ASP one CL knife
 ‘Xiaoming took out a knife.’

Similarly, in (118) *shang* can be interpreted as ‘up to the chopping board’. In (119), *hui* can be interpreted as ‘returning to one’s home’.

- (118) Tufu-men **tai shang** le yi tou zhu.
 butcher-PL lift ascend ASP one CL pig
 ‘The butchers lift up a pig.’

- (119) Baba **dai hui** le haoduo qian.
 father take return ASP many money
 ‘Father brought back a lot of money.’

Since these V_{gen} s inserted under the Res node can still be interpreted metaphorically to construe a final state reading, they do not have to take a locative object.

In summary, our answer to the question why V_{dis} V_{gen} O is grammatical while V_{dis} O V_{gen} is ungrammatical is based on the hypothesis that the ResP needs to construe a resultative interpretation while PathP needs to construe a moving track reading. Specifically, in V_{dis} V_{gen} O, V_{gen} is inserted under Res, Res does not require a locative DP as long as a result state reading can be construed

metaphorically. However, in the case of $V_{\text{dis}} \text{ O } V_{\text{gen}}$, V_{gen} is under Path, but in this case PathP cannot be interpreted as a clear moving track without a locative DP. To save the semantics, Path has to select a locative DP complement. This is why $V_{\text{dis}} \text{ O } V_{\text{gen}} \text{ LocO}$ is grammatical: adding a locative object after the V_{gen} , which itself is inserted under Path, satisfies the semantic requirement of PathP.

4.4.2 The Metaphoric Reading of the Directional Verb

Next, we shall move to the second question raised in the beginning of the section, namely, what is the relation between the metaphoric reading of directional verbs and their syntactic position?

We have just discussed the cases where a single V_{gen} following a V_{dis} is interpreted metaphorically. I also show in Section 2.3 that when the co-event verb is a non-movement-denoting verb, the V_{gen} must yield a metaphoric reading. I repeat one of the examples here in (120).

- (120) Xiaoming jinnian gang **kao** shang daxue.
 Xiaoming this-year just take-exam ascend university
 ‘Xiaoming just passed the university entrance examination this year.’

kao shang daxue ‘take-exam ascend university’ means ‘pass the university entrance examination and get admitted into the university’ rather than literally ‘take the exam and go up the university’, which does not make sense. In (120), the V_{gen} *shang* is not interpreted as its original directional meaning and cannot be moved after the object:

- (121) *kao le daxue shang
 take-exam ASP university ascend

We have also mentioned in Section 2.2.2.4 that the deictic directional verb can also be interpreted metaphorically with a non-movement co-event verb. This is mainly manifested by combining the potential morphemes *de/bu*:

- (122) Wo chang bu lai zhe shou ge.
 I sing unable come this CL song
 ‘I cannot sing this song’

If we move the V_{deic} *lai* after the object, the sentence becomes ungrammatical.

- (123) *Wo chang zhe shou ge lai.
I sing this CL song come

Besides, the complex clusters V_{gen} - V_{deic} are also found to express metaphoric meaning when combined with non-motion co-event verbs. However, this effect disappears if a direct object precedes all the directional verbs. The relevant examples are illustrated in (124)-(126).

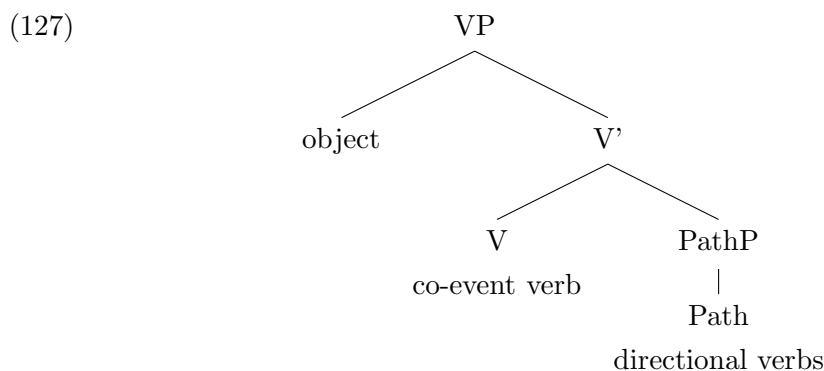
- (124) a. Diren **gong xia-lai** le na zuo cheng.
enemy attack descend-come that CL city
b. Diren **gong xia** le na zuo cheng **lai**.
enemy attack descend ASP that CL city come
c. *Diren **gong** le na zuo cheng **xia-lai**.
enemy attack ASP that CL city descend-come
'The enemy conquered that city.'

- (125) a. Wo **kan chu lai** le ta de mimi.
I look exit come ASP he POSS secret
b. *Wo **kan** le ta de mimi **chu lai**.
I look ASP he POSS secret exit come
'I saw through his secret.'

- (126) a. Wo **xiang qi lai** le yi jian shi.
I think rise come ASP one CL issue
b. Wo **xiang qi** le yi jian shi **lai**.
I think rise ASP one CL issue come
c. *Wo **xiang** le yi jian shi **qi lai**.
I think ASP one CL issue rise come
'I recalled an issue.'

We notice that all types of directional verbs, be it in the simple form such as a single V_{gen} or a single V_{deic} , or in the complex form, i.e. the V_{gen} - V_{deic} cluster, are able to express non-directional, metaphoric interpretation. But when this happens, the directional verb always directly follows the co-event verb. If the co-event verb and the directional verbs are intervened by other constituents such as a direct object, the metaphoric interpretation would not construe.

This generalization actually follows what we postulate in Section 4.4.1. Since when direct object precedes all the directional verbs, the underlying structure actually has no ResP projected. All the directional verbs are inserted under Path, namely, the schema in (127).



And since Path can only provide trajectory meaning, the metaphoric reading which can only be achieved in ResP would not construe. Therefore, when directional verbs are in Path, the semantics can only interpret it as a trajectory. If the trajectory reading is anomalous with the co-event verb, namely, no feasible path reading is available, the sentence would be judged as ungrammatical.

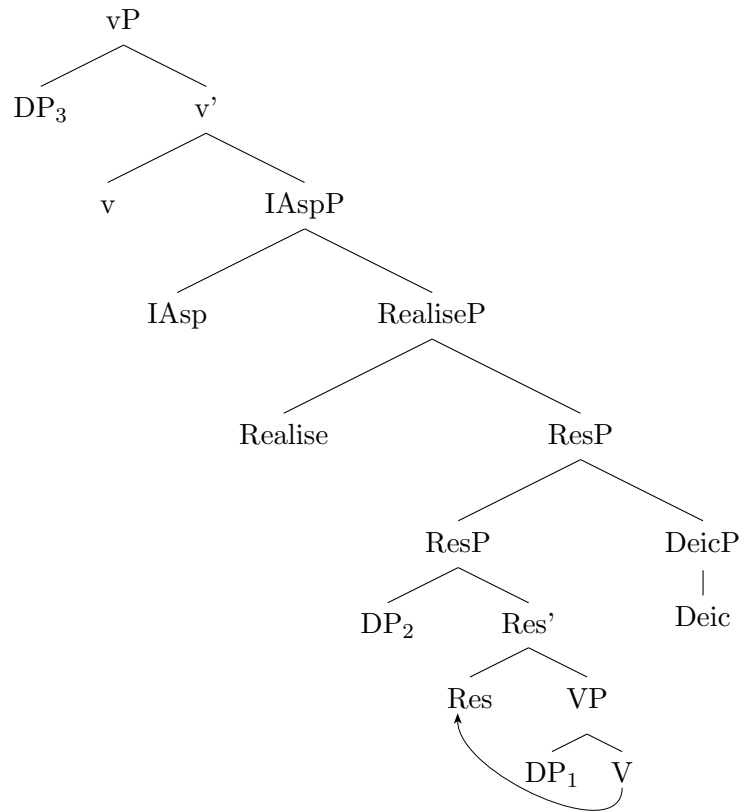
In summary, the answer to the question why the metaphorical interpretation of the directional verb can only be obtained when the directional verbs are directly after the co-event verb, lies in the different semantic effect of the Res node and the Path node. Basically the Res node construes a result state reading which could be metaphoric while the Path node can only be interpreted as a trajectory.

4.5 Summary

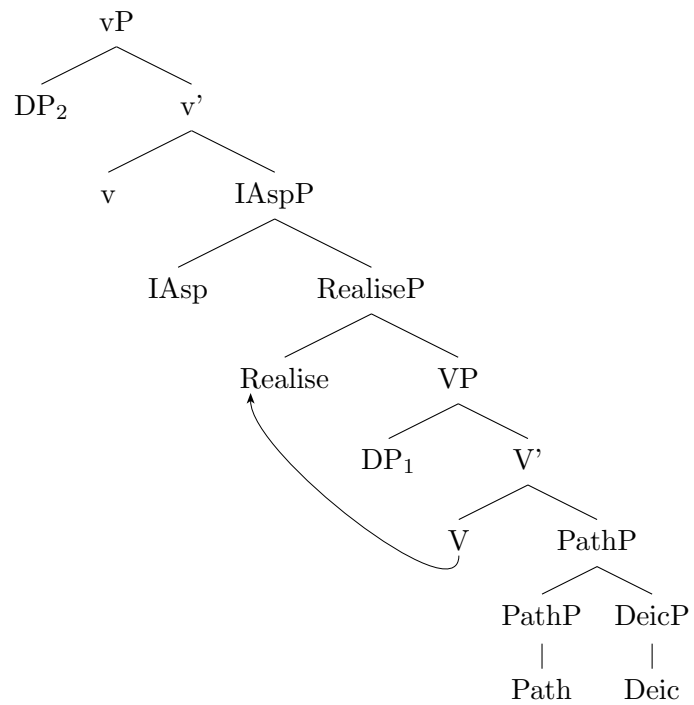
In this chapter I illustrate how each type of DSVC in Mandarin is analysed with the proposal in Chapter 3. The list of questions in the beginning of this chapter are also addressed in the analysis.

Basically, our theory states that to create the surface DSVC, syntax either generates a Res structure (128) or a Path structure (129).

(128)



(129)



Then lexical items are selected from the lexicon to be inserted into syntax. In Mandarin, $V_{\text{dis}}/V_{\text{m}}$ are always inserted under the terminal node V ; $V_{\text{gen}}\text{s}$ can be under Res or Path ; $V_{\text{deic}}\text{s}$ can be under Res or Deic . There also exist compounds in the form of $V_{\text{gen}}-V_{\text{deic}}$, which can be under Res or Path . The rules are summarized in Table 4.7.

Table 4.7: Insertion rules of the verbs in Mandarin DSVCs

Type of lexical item	Insertion position
$V_{\text{dis}}/V_{\text{m}}$	V
V_{gen}	Res/Path
V_{deic}	Res/Deic
$V_{\text{gen}}-V_{\text{deic}}$	Res/Path

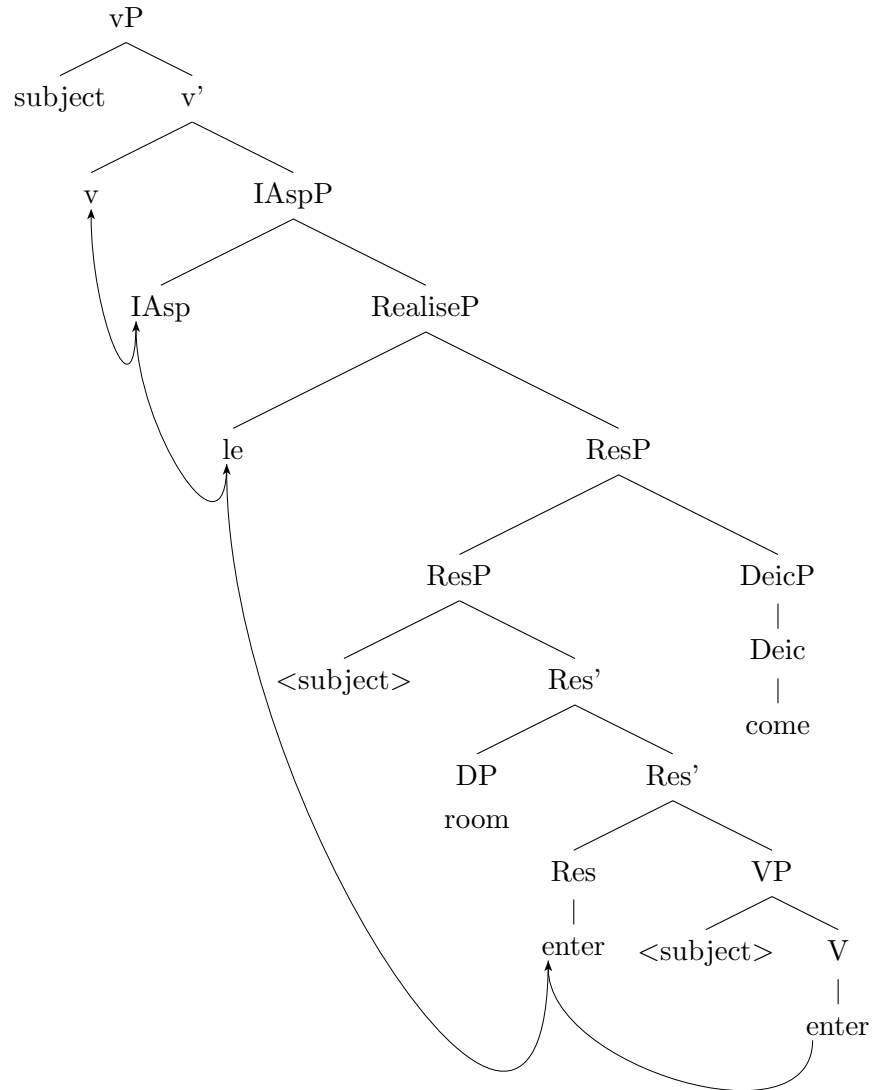
The observed insertion rules do not come into being randomly. Recall that in Section 3.3.1.3 I suggest that the mechanism behind the insertion of a particular lexical item under a certain terminal node lies in feature matching or identification. The insertion rules generalised above are a consequence of this mechanism. The terminal nodes V , Res , Path , Deic are specified with categorial features $[V]$, $[\text{Res}]$, $[\text{Path}]$ and $[\text{Deic}]$ respectively. The lexical items also bear categorial features in our model. The $[V]$ feature on the lexical item $V_{\text{dis}}/V_{\text{m}}$ matches the $[V]$ feature on the terminal nodes V , hence $V_{\text{dis}}/V_{\text{m}}$ are inserted under the node V . Apart from the categorial features, the lexical items also bear semantic features which come from their root meaning. These features can be identified by the features on the nodes, hence licensing the insertion. For example, $V_{\text{gen}}\text{s}$ generally express a moving track and entail a goal, so we can assume they bear semantic features $[\text{track}]$ and $[\text{goal}]$. $[\text{track}]$ can be identified by $[\text{Path}]$ while $[\text{goal}]$ can be identified by $[\text{Res}]$, therefore, $V_{\text{gen}}\text{s}$ can be licensed under Res or Path .

Following the theory, the derivation of the the seven serialising patterns along with their syntactic and semantic properties are captured nicely.

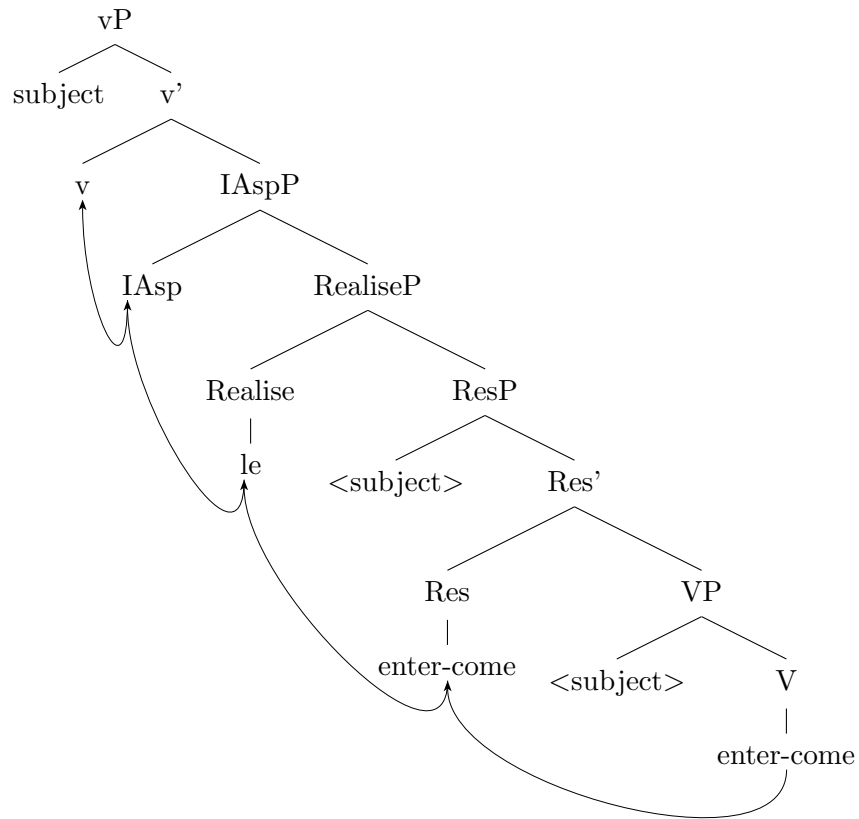
First of all, we dealt with the DSVCs in the form of $V_{\text{gen}} V_{\text{deic}}$, e.g. *jin lai* ‘enter come’, which demonstrate both word and phrasal behaviours. This is captured by proposing two situations. Basically, when a locative DP occurs between the two verbs, V_{gen} is inserted under Res and V_{deic} is inserted under Deic , which itself projects an adjunct attaching to ResP . The locative object is in the Spec of ResP , below the other specifier of ResP , namely the resultee.

The tree diagram is represented in (130).

(130) **Derivation for V_{gen} *le* LocO V_{deic} : ‘enter *le* room come’**

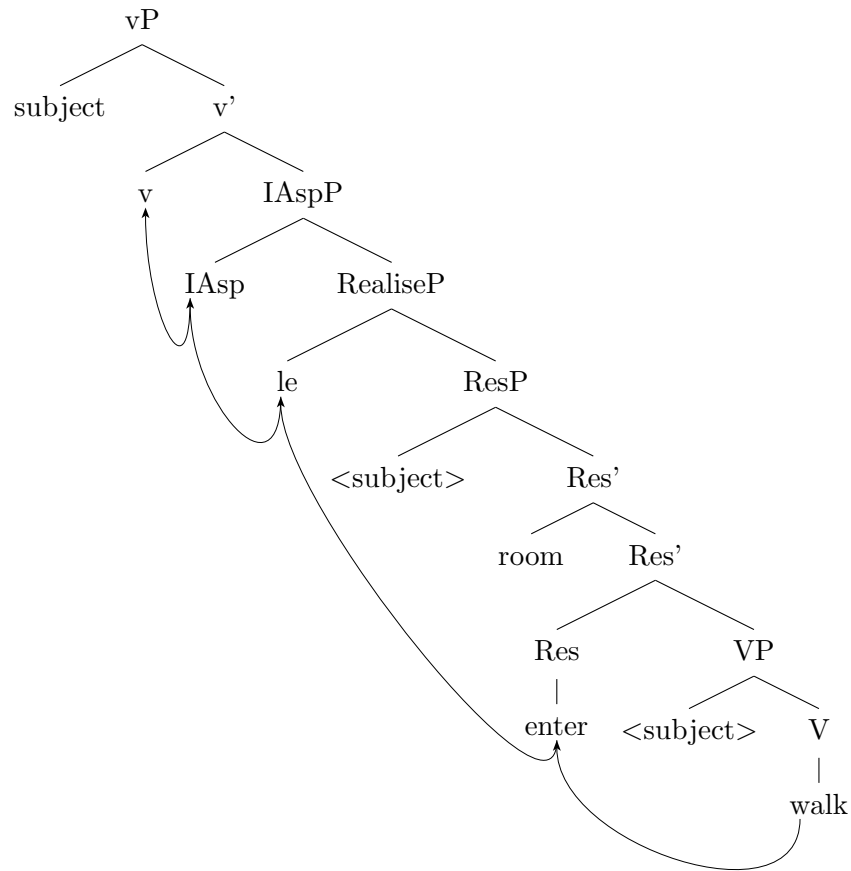


When the V_{gen} and V_{deic} are not separated, they are argued to be compounds that integrate a location notion in their semantics. In other words, these V_{gen} V_{deic} compounds are not serial verbs, but X^0 level elements (we use a hyphen between V_{gen} and V_{deic} to indicate its compound status), which can then be decomposed into three nodes, as in (131).

(131) Derivation for $V_{\text{gen}}\text{-}V_{\text{deic}}$ *le*: ‘enter -come *le*’

Secondly, we discussed the DSVCs beginning with a V_m , including the patterns $V_m V_{\text{gen}}$, $V_m V_{\text{deic}}$ and $V_m V_{\text{gen}} V_{\text{deic}}$.

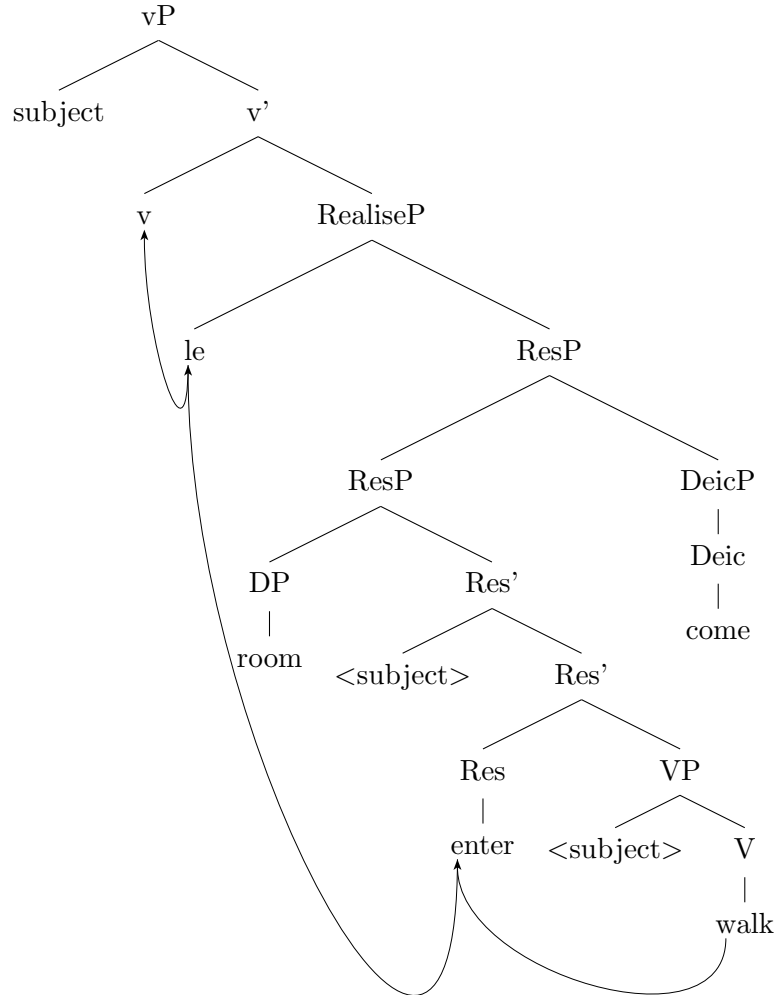
We argued that in the patterns $V_m V_{\text{gen}}$ and $V_m V_{\text{deic}}$, the single V_{gen} directly following V_m is inserted under Res rather than $Path$. The locative object is in the Spec of $ResP$, represented in (132).

(132) Derivation for $V_m V_{gen} le$ LocO: ‘walk enter *le* room’

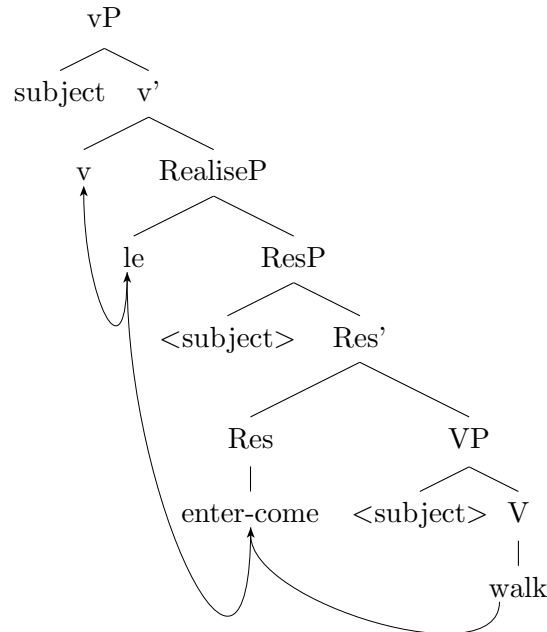
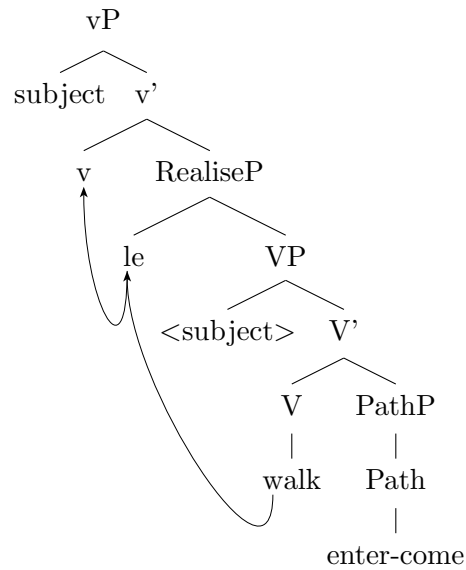
Similarly, the single V_{deic} following V_m is also inserted under Res . However, when a V_{deic} fills Res , it does not like a locative DP to be in the Spec of $ResP$ because the semantics of V_{deic} s is enough for $ResP$ to construe a result state reading.

In the pattern $V_m V_{gen} V_{deic}$, the $V_{gen} V_{deic}$ cluster can also be a compound or two independent words. When V_{gen} and V_{deic} are separated by a locative object, they are two words and are inserted under different heads in syntax. (133) illustrates such an example, which is basically (132) with a DeicP adjunct adjoined to $ResP$.

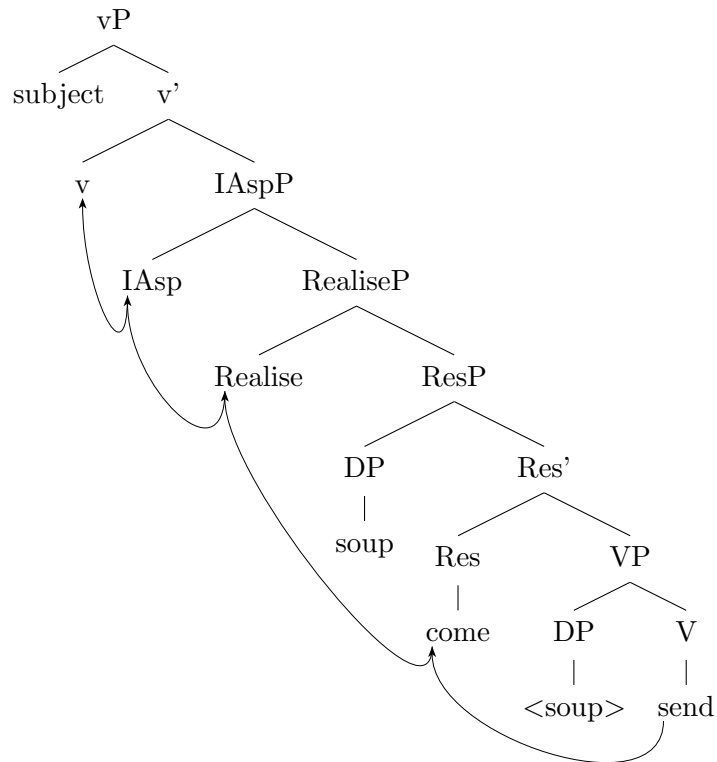
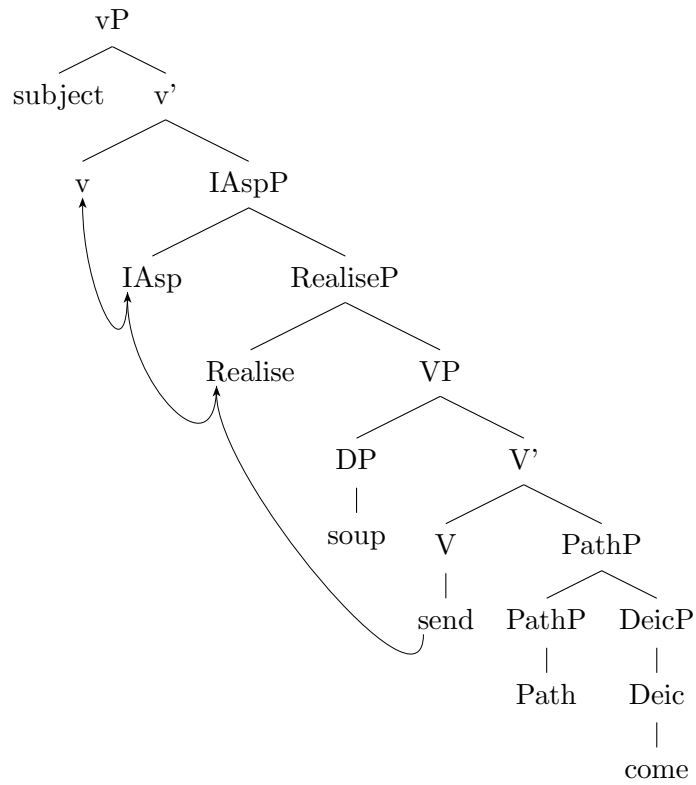
- (133) Derivation for $V_m V_{gen} le$ LocO V_{deic} : ‘walk enter *le* room come’



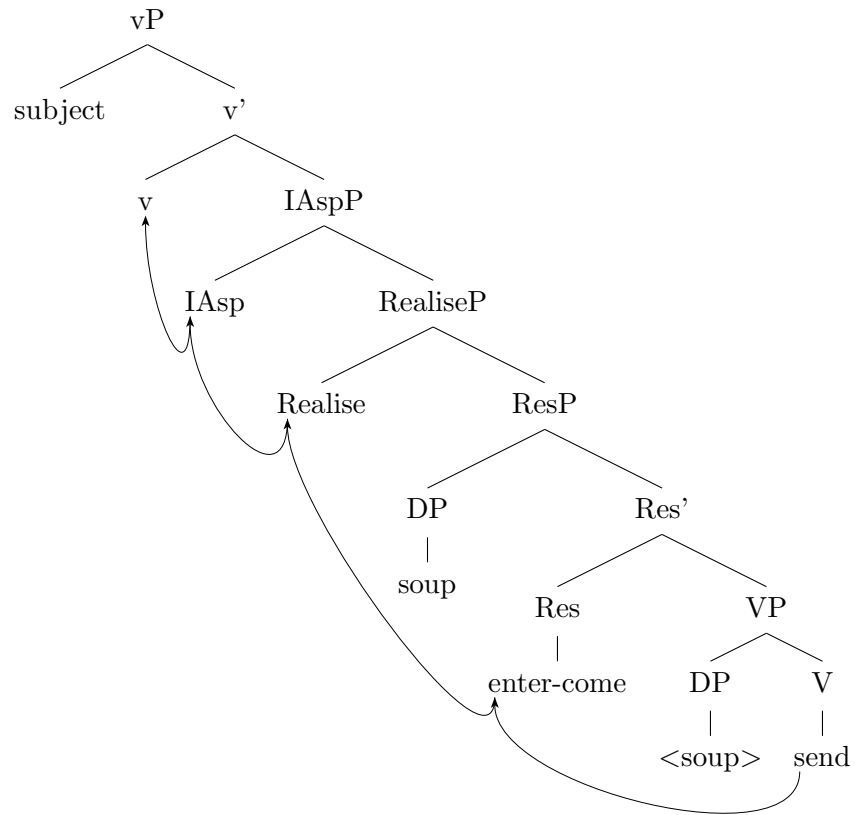
However, when V_{gen} and V_{deic} are not separated, they are compounds, which can be inserted under Res (as in (134)) or Path (as in (135)), resulting in semantic differences: (134) tends to express an realised result reading while (135) tends to describe a realised on-going scene.

(134) Derivation for $V_m V_{gen} V_{gen} le$: ‘walk enter come *le*’(135) Derivation for $V_m le V_{gen} V_{deic}$: ‘walk *le* enter come’

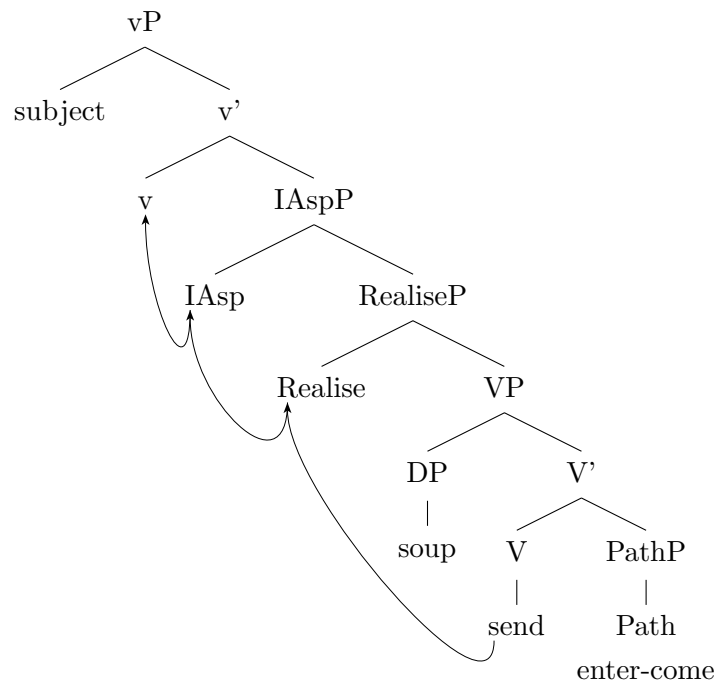
Thirdly, we analyse the DSVCs beginning with a V_{dis} , in which case word order alternations are observed. We argued that the alternations are due to the option of inserting the directional verbs under *Path* or *Res*. Specifically, the VVO type of variants are instantiations of *Res* structure in which the directional verb is under *Res* while the VOV type instantiates *Path* structure in which the directional verb is under *Path*. The tree diagrams for the five word orders are repeated in (136) to (140).

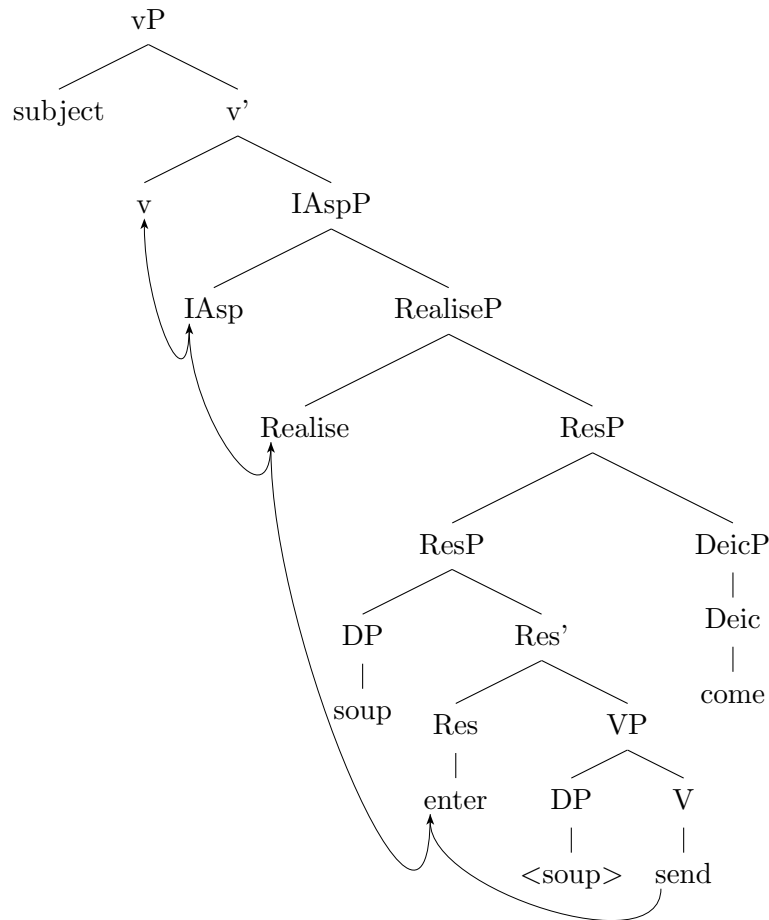
(136) Derivation for $V_{\text{dis}} V_{\text{deic}} O$: ‘send come soup’(137) Derivation for $V_{\text{dis}} O V_{\text{deic}}$: ‘send soup come’

(138) Derivation for V_{dis} V_{gen} V_{deic} O: ‘send enter come soup’



(139) Derivation for V_{dis} O V_{gen} V_{deic} : ‘send soup enter come’



(140) Derivation for V_{dis} V_{gen} O V_{deic} : ‘send enter soup come’

The syntactic and semantic divergence between each variant are also explained based on the proposed structures above.

Finally, we examined the V_{dis} V_{gen} serialising pattern. We tackled two questions: why is the alternation V_{dis} O V_{gen} missing, and why does the metaphoric reading disappear when the object precedes all the directional verbs? We came to the conclusion that this is due to the semantic effect of the ResP and PathP nodes.

There is a remaining question regarding the insertion options of V_{deicS} . The insertion position of V_{deicS} in Mandarin, according to Table 4.7, is under Res or Deic. This is not as easy to explain, following the lexical item insertion mechanism, as we did for the V_{genS} . We can argue that V_{deicS} bear the semantic features [deictic] and [goal], which can be identified by the nodes Deic and Res respectively. Nevertheless, V_{deicS} also express some track information, so they should be able to be inserted under Path as well. However, following the rules

we have deduced so far, V_{deic} s in Mandarin are not inserted under Path. To maintain the argument so far, some other features on the terminal nodes, apart from their categorial features, should be involved in regulating the lexical item insertion. For example, we can assume that the node Path is also specified with a [+/-Deic] feature which determines whether V_{deic} s can be inserted. In Mandarin, this feature is [-Deic], so V_{deic} s cannot be under Path. In Section 5.4, I will discuss more about this feature and suggest that in Cantonese it has a different value, based on the comparison between Mandarin and Cantonese DSVCs.

Chapter 5

Crosslinguistic Application

Apart from Mandarin Chinese, directional serial verb constructions are also widely observed in other dialects of Chinese such as Wu, Min, Hakka, and in Cantonese¹. These dialects utilise the same types of verbs, including V_{dis} , V_{m} , V_{gen} and V_{deic} , to form serial verb constructions. However, they do not behave exactly like Mandarin in various perspectives such as the availability of word order variants, the position of aspect markers and the position of the locative DP.

In this chapter, I use the Cantonese data as an example to briefly demonstrate the extent to which my theory can be applied to account for the cross-linguistic difference in DSVCs.

Basically, three differences between the Mandarin DSVCs and Cantonese DSVCs are observed. Firstly, the Cantonese DSVCs that begin with a V_{dis} do not have word order alternations as is found in the Mandarin counterpart. Secondly, the aspect marker *le* in Mandarin and its Cantonese counterpart *zo* have different distribution in DSVCs. Thirdly, the locative object occupies different positions in Mandarin and Cantonese DSVCs.

We shall analyse and explain these differences between Mandarin DSVCs and Cantonese DSVCs with the proposed theory in the following sections. Specifically, Section 5.1 deals with the issue of word order alternations. Section 5.2 looks into the distribution of the aspect marker *zo*. Section 5.3 addresses the position of the locative object in Cantonese. Section 5.4 discusses the parameter behind the surface differences.

¹Yiu(2014) provides a thorough typology study on the DSVCs in these dialects. The Cantonese data in this chapter are mainly adapted from his work.

5.1 Word Order Alternations

The first difference between the Cantonese DSVCs and the Mandarin counterparts lies in the availability of word order variants. Recall that in Mandarin, when the first verb is a transitive displacement verb, the direct object can follow each verb in the verb string, resulting in the word order variants. However, Cantonese does not have this flexibility in terms of word order. Cantonese only allows the direct object to occur between the displacement verb and the directional verb(s). In other words, only the VOV type of orders, i.e. $V_{\text{dis}} \text{ O } V_{\text{deic}}$ and $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$, are available². The Cantonese examples are shown in (1) and (2), which are compared with the Mandarin examples (3) and (4).

Cantonese:

- (1) a. *Keoi **ning lai** zo bun syu. * $V_{\text{dis}} V_{\text{deic}} \text{ O}$
 S/he bring come ASP CL book
 b. Keoi **ning** zo bun syu **lai**. $V_{\text{dis}} \text{ O } V_{\text{deic}}$
 S/he bring ASP CL book come
 ‘S/he brought the book here.’
- (2) a. *Keoi **bun soeng lai** di fo. * $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} \text{ O}$
 S/he move ascend come CL goods
 b. Keoi **bun** zo di fo **soeng lai**. $V_{\text{dis}} \text{ O } V_{\text{gen}} V_{\text{deic}}$
 S/he move ASP Cl goods ascend come
 c. *Keoi **bun soeng** di fo **lai**. * $V_{\text{dis}} V_{\text{gen}} \text{ O } V_{\text{deic}}$
 S/he move ascend CL goods come
 ‘S/he moved the goods up here.’

Mandarin:

- (3) a. Ta **song lai** yi wan tang. $V_{\text{dis}} V_{\text{deic}} \text{ O}$
 he send come one CL soup
 b. Ta **song** yi wan tang **lai**. $V_{\text{dis}} \text{ O } V_{\text{deic}}$
 he send one CL soup come
 ‘He brought one bowl of soup.’

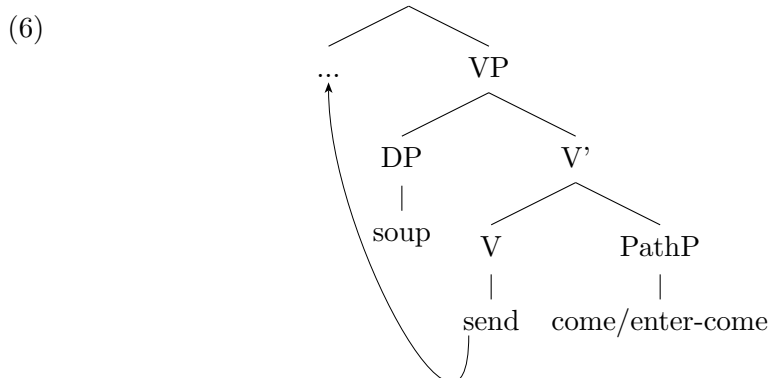
²According to Yiu (2014), if the VVO order is used in Cantonese, it is normally in formal context such as news reports rather than daily conversation. And the number of V_{dis} that allow this order is also very limited. Hence, the VVO order might have entered Cantonese due to the influence of Mandarin.

- (4) a. Ta **song jin lai** yi wan tang. $V_{dis} V_{gen} V_{deic} O$
 he send enter come one CL soup
- b. Ta **song** yi wan tang **jin lai**. $V_{dis} O V_{gen} V_{deic}$
 he send one CL soup enter come
- c. Ta **song jin** yin wan tang **lai**. $V_{dis} V_{gen} O V_{deic}$
 he send enter one CL soup come
 ‘He brought in one bowl of soup (towards the speaker).’

I argued in Chapter 3 and Chapter 4 that the Mandarin word order variations are due to the fact that the directional verbs can be inserted under ResP or PathP³. Based on the data in (1)-(4), it is quite straightforward to generalise a difference between Cantonese and Mandarin in terms of the lexical item insertion rules:

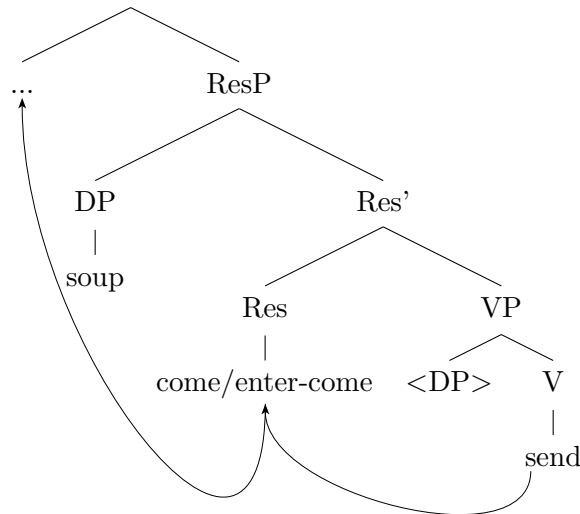
- (5) Insertion Rules difference (preliminary):
 The directional verbs in Cantonese can only be inserted under PathP.
 While the Mandarin directional verbs can be inserted under either PathP or ResP.

The Insertion Rules predict that while in Mandarin both configurations (6) and (7) are possible, in Cantonese only (6) is possible. This explains the missing VVO types of word orders in Cantonese.



³ V_{deic} s are under DeicP, which is an adjunct to ResP and PathP, so we can also say V_{deic} s are under ResP or PathP.

(7)



However, the Insertion Rules in (5) would predict the $V_{\text{dis}} V_{\text{gen}} O$ order to be ungrammatical in Cantonese, which is actually against the empirical data. We observe in Cantonese that when serialising $V_{\text{dis}} V_{\text{gen}}$, the object of V_{dis} can only be in the middle of the two verbs when V_{gen} is followed by a locative object, presenting the word order $V_{\text{dis}} O V_{\text{gen}} \text{LocO}$, as in (8). Mandarin shows the same property.

- (8) Keoi **bun** zo zoeng tui **gwo** nei bin. (**Cantonese**)
 S/he move ASP CL table pass this side
 ‘S/he moved one table over to this side.’

If there is no locative object, the direct object of V_{dis} occurs after the whole verb string, which is also exactly like the Mandarin counterpart. The examples are shown in (9) and (10) respectively.

- (9) Koei **tek ceot** zo jat go bo. (**Cantonese**)
 3sg kick exit ASP one CL ball
 ‘S/he kicked out one ball.’

- (10) Ta **song jin** le yi ben shu. (**Mandarin**)
 3sg send enter ASP one CL book
 ‘S/He sent in a book.’

(9) clearly suggests that in Cantonese, V_{gen} can also be inserted under Res. Therefore, stating that the directional verbs in Cantonese are all inserted under PathP is too strong. Alternatively, we can postulate that each type of directional verb has an insertion rule in a certain language. Hence, the Insertion Rule can be modified as in (11).

- (11) Insertion Rules difference (modified):
1. Insertion rule for $V_{\text{deic}s}$: In Mandarin, $V_{\text{deic}s}$ can be inserted under the node Res, or the node Deic, which itself projects a DeicP adjunct adjoined to ResP or PathP. In Cantonese, $V_{\text{deic}s}$ can be inserted under the node Path, but not under Res or Deic.
 2. Insertion rule for $V_{\text{gen}s}$: In both Mandarin and Cantonese, $V_{\text{gen}s}$ can be inserted under Res or Path.
 3. Insertion rule for the syntactically formed cluster $V_{\text{gen}}-V_{\text{deic}}$: In Mandarin, $V_{\text{gen}}-V_{\text{deic}s}$ can be inserted under Res or Path. In Cantonese, $V_{\text{gen}}-V_{\text{deic}s}$ can be under Path, but not under Res.

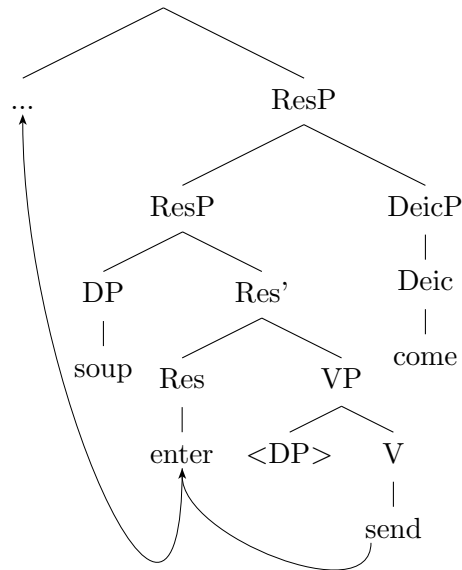
(11) can be simplified as in Table 5.1

Table 5.1: Insertion Rule difference (modified)

Directional verb type	Insertion position in Mandarin	Insertion position in Cantonese
V_{deic}	Res/Deic	Path
V_{gen}	Res/Path	Res/Path
$V_{\text{gen}}-V_{\text{deic}}$	Res/Path	Path

The modified Insertion Rules, on the one hand, still capture the difference in the availability of word order alternations between Mandarin and Cantonese. On the other hand, they manage to cover the distribution of $V_{\text{gen}s}$ in Cantonese. Specifically, postulating that $V_{\text{gen}s}$ can be under Res in Cantonese successfully predicts that $V_{\text{dis}} V_{\text{gen}} O$ is grammatical in Cantonese. Nevertheless, simply proposing that is not enough, because this would wrongly predict that $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ is grammatical in Cantonese as well. To solve this dilemma, we also postulate in (11) that $V_{\text{deic}s}$ in Cantonese are under Path rather than under Deic or Res as in Mandarin, which guarantees that the configuration (12) is not possible in Cantonese, hence successfully excluding the $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ order in Cantonese.

(12)



Also remember that the Mandarin variants yield different telicity readings. Then if Cantonese only allows the VOV type of word orders, it should only yield an atelic reading according to the theory we have built so far. This expectation is born out. (13) shows that, without the aspect marker *zo*, which is the counterpart of *le*, the Cantonese sentence, which involves DSVC with the VOV word order, cannot survive the in-PP test.

- (13) Keoi jat go zungtau **sung** *(zo) sap bun syu (**jap**) lai.
 he one CL hour send *(ASP) ten CL book enter come
 'He brought in ten books in one hour.'

Besides, (14) shows that the sentence passes the for-PP test and can tolerate a following assertion which denies the endpoint of the action.

- (14) Koei **sung** sap bun syu (**jap**) lai sung zo jot go zungtau,
 he send ten CL book enter come send ASP one CL hour
 dou mei sung dou.
 still not send arrive
 'He has being bringing in ten books for an hour, but they have not arrived.'

These pieces of evidence suggest that the word orders $V_{\text{dis}} O (V_{\text{gen}}) V_{\text{deic}}$ in Cantonese are indeed atelic, just as the telicity value of the same type of word orders in Mandarin. Hence, at least so far our theory is well maintained. To indicate the attainment of the endpoint, in other words, to obtain telic interpretation, *zo* is required. Next, we shall look into the distribution of *zo* in the Cantonese DSVCs.

5.2 The Position of the Aspect Marker

As we mentioned earlier, *zo* is the Cantonese counterpart of the Mandarin *le*. We observe that the position of *zo* in the Cantonese DSVCs is not exactly the same as the position of *le* in the Mandarin DSVCs. To compare the Mandarin and Cantonese data in a more systematic way, we again divide the data into three groups depending on the first verb in the verb sequence.

When the verb sequence begins with a V_{gen} , namely the serialising pattern $V_{\text{gen}} V_{\text{deic}}$, *zo* occurs between the two verbs while *le* occurs after the verb string. Compare the Cantonese data in (15) and the Mandarin data in (16).

Cantonese: $V_{\text{gen}} \text{ zo } V_{\text{deic}}$

- (15) Keoi **soeng zo lai/heoi**.
 S/he ascend ASP come/go
 ‘S/he ascended here/there.’

Mandarin: $V_{\text{gen}} V_{\text{deic}} \text{ le}$

- (16) Ta **shang lai le**.
 he ascend come ASP
 ‘He came up.’

In the serialising patterns beginning with V_{m} , *zo* is always after the V_{m} and before the directional verb(s). In comparison, *le* should be after the verb string in the patterns $V_{\text{m}} V_{\text{deic}}$ and $V_{\text{m}} V_{\text{gen}}$. However, in pattern $V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$, *le* can either occur after the verb string or occur between V_{m} and the directional verbs. The Cantonese examples are shown in (17) and (18) and the Mandarin examples are shown in (20) and (21).

Cantonese: $V_{\text{m}} \text{ zo } V_{\text{deic}}$, $V_{\text{m}} \text{ zo } V_{\text{gen}}$, $V_{\text{m}} \text{ zo } V_{\text{gen}} V_{\text{deic}}$

- (17) Keoi **paau zo lok / lai** saam lau.
 S/he ran ASP descend / come third floor
 ‘S/he ran down to the third floor.’
- (18) Keoj **haang zo ceot lai**.
 S/he walk ASP exit come
 ‘S/he walked out here.’

Mandarin: $V_m V_{deic} le, V_m V_{gen} le, V_m (le) V_{gen} V_{deic} (le)$

- (19) Xiaoniao **fei lai** le.
bird fly come ASP
'Birds flew hither.'
- (20) Ta **zou shang** le shan.
he walk ascend ASP mountain
'He walked up the mountain.'
- (21) Ta **zou** (le) **jin lai** (le).
he walk ASP enter come ASP
'He walked in.'

In the serialising patterns beginning with V_{dis} , *zo* and *le* occupy the same position. We already know that Cantonese only allows the $V_{dis} O (V_{gen}) V_{deic}$ orders when the directional verb is a single V_{deic} or $V_{gen}-V_{deic}$. In these verb strings, *zo* must follow V_{dis} , which is also the position of *le* in the same kind of word orders, as is shown in the examples below:

Cantonese:

- (22) Keoi **ning zo** bun syu **lai**.
S/he bring ASP CL book come
'S/he brought the book here.'
- (23) Keoi **bun zo** di fo **soeng lai**.
S/he move ASP Cl goods ascend come
'S/he moved the goods up here.'

Mandarin:

- (24) Ta **song** le yi wan tang **lai**.
he send ASP one CL soup come
'He brought one bowl of soup.'
- (25) Ta **song** le yi wan tang **jin lai**.
he send ASP one CL soup enter come
'He brought in one bowl of soup (towards the speaker).'

We have also seen that when the directional verb is a single V_{gen} , both Cantonese and Mandarin use the word order $V_{\text{dis}} V_{\text{gen}} O$. In this case, *zo* and *le* also occupy the same position, which is after V_{gen} . For example:

Cantonese:

- (26) Koei **tek ceot** zo jat go bo.
 S/he kick exit ASP one CL ball
 ‘S/he kicked out one ball.’

Mandarin:

- (27) Ta **song jin** le yi ben shu.
 he send enter ASP one CL book
 ‘He sent in a book.’

The position of *zo* and *le* in Cantonese and Mandarin DSVCs can be summarised in Table 5.2.

Table 5.2: The position of *zo* and *le*

Serialising pattern	Position of the Cantonese <i>zo</i>	Position of the Mandarin <i>le</i>
$V_{\text{gen}} V_{\text{deic}}$	$V_{\text{gen}} zo V_{\text{deic}}$	$V_{\text{gen}} V_{\text{deic}} le$
$V_{\text{m}} V_{\text{deic}}$	$V_{\text{m}} zo V_{\text{deic}}$	$V_{\text{m}} V_{\text{deic}} le$
$V_{\text{m}} V_{\text{gen}}$	$V_{\text{m}} zo V_{\text{gen}}$	$V_{\text{m}} V_{\text{gen}} le$
$V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$	$V_{\text{m}} zo V_{\text{gen}} V_{\text{deic}}$	$V_{\text{m}} (le) V_{\text{gen}} V_{\text{deic}} (le)^4$
$V_{\text{dis}} V_{\text{deic}} O$	–	$V_{\text{dis}} V_{\text{deic}} le O$
$V_{\text{dis}} O V_{\text{deic}}$	$V_{\text{dis}} zo O V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{deic}}$
$V_{\text{dis}} V_{\text{gen}} O$	$V_{\text{dis}} V_{\text{gen}} zo O$	$V_{\text{dis}} V_{\text{gen}} le O$
$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$	–	$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} le O$
$V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$	$V_{\text{dis}} zo O V_{\text{gen}} V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{gen}} V_{\text{deic}}$
$V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$	–	$V_{\text{dis}} V_{\text{gen}} le O V_{\text{deic}}$

Based on the data illustrated above, we come to the generalization that in Cantonese, *zo* always follows the first verb in the verb string, with an exception

⁴We noted before that *le* can occur in either position in this serialising pattern, but not in both.

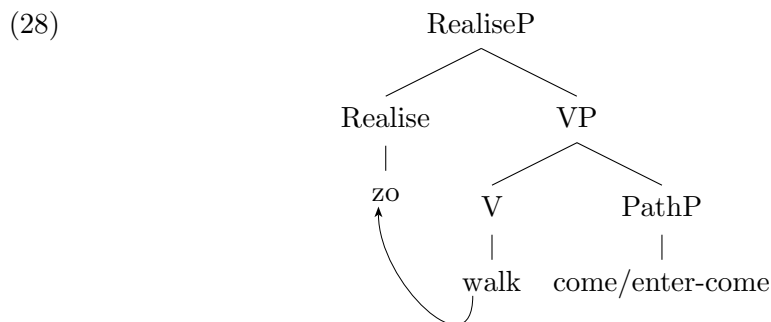
in the serialising pattern $V_{\text{dis}} V_{\text{gen}} O$, in which *zo* follows the whole verb string, just as *le* does in Mandarin. Whereas *le* in Mandarin follows the directional verb(s) when there is no object interfering between the co-event verb and the directional verb(s). When there is an object interfering between the co-event verb and the directional verb(s), *le* follows the co-event verb. There is also an exception, i.e. the $V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$ pattern, in which *le* is allowed to occur between the V_{m} and the directional verbs.

The generalization can actually be directly captured by the Insertion Rules we generalised in Section 5.1, repeated below.

Table 5.3: Insertion Rules (modified)

Directional verb type	Insertion position in Mandarin	Insertion position in Cantonese
V_{deic}	Res/Deic	Path
V_{gen}	Res/Path	Res/Path
$V_{\text{gen}}-V_{\text{deic}}$	Res/Path	Path

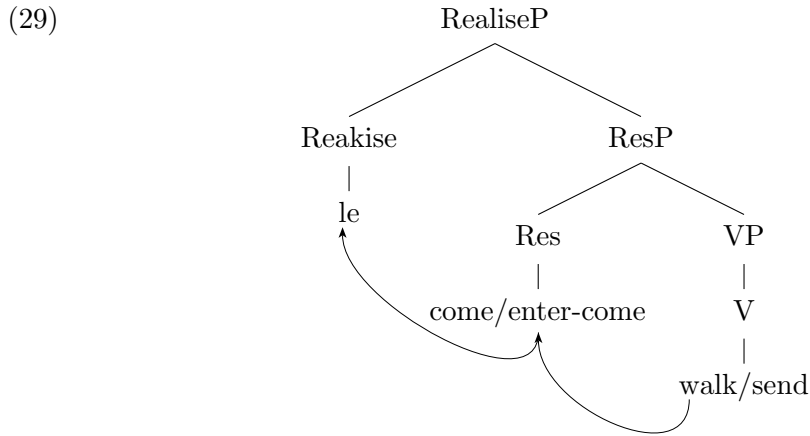
Since in Cantonese V_{deic} and $V_{\text{gen}}-V_{\text{deic}}$ should all be inserted under Path, the motion/displacement verb will move alone to the higher Realise head which is occupied by *zo*. Therefore, in surface *zo* ends up following the motion/displacement verb, as (28) shows.



In Mandarin, V_{deic} and $V_{\text{gen}}-V_{\text{deic}}$ can be under PathP as well⁵. The directional verbs separated from the co-event verb by an object are analysed as being under PathP. Hence, on surface, *le* follows the co-event verb as the Cantonese *zo* does in these cases. However, V_{deic} and $V_{\text{gen}}-V_{\text{deic}}$ in Mandarin have another insertion option, i.e. under Res. As we argued in Chapter 4, the directional

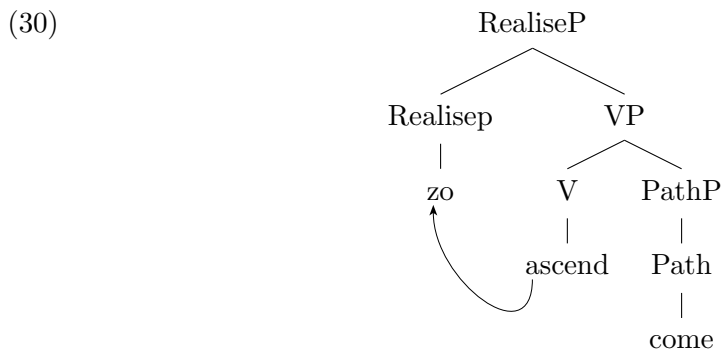
⁵Note: $V_{\text{deic}}\text{s}$ in Mandarin are under DeicP which can be an adjunct to PathP.

verbs directly following the co-event verb are analysed as under Res. Hence in those cases, *le* ends up following the directional verb(s), as (29) shows.



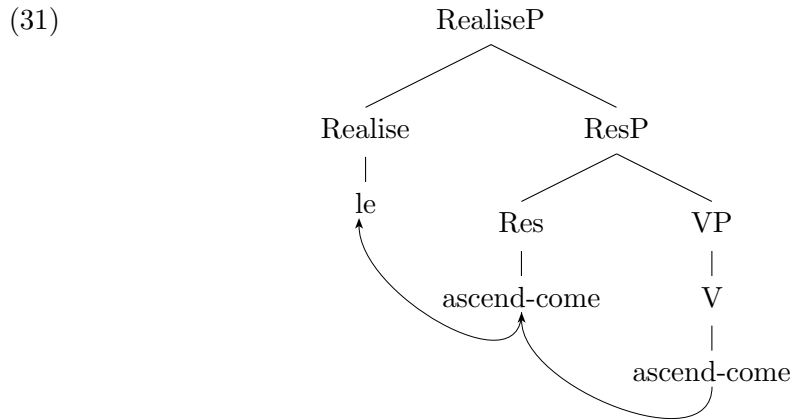
We also argued in Section 4.2.2 that in the pattern $V_m V_{gen} V_{deic}$, the cluster $V_{gen}-V_{deic}$ can be under Res or Path, therefore *le* has two possible positions in this case.

A slightly special case is the $V_{gen} V_{deic}$ pattern. In this case, there is no co-event verb. What happens in Cantonese is that V_{gen} is treated as the co-event verb (the main action verb), and hence is inserted under V.⁶ According to the parameter, V_{deic} would be under Path. After the head movement, *zo* ends up being in the middle of V_{gen} and V_{deic} . The tree is represented in (30).

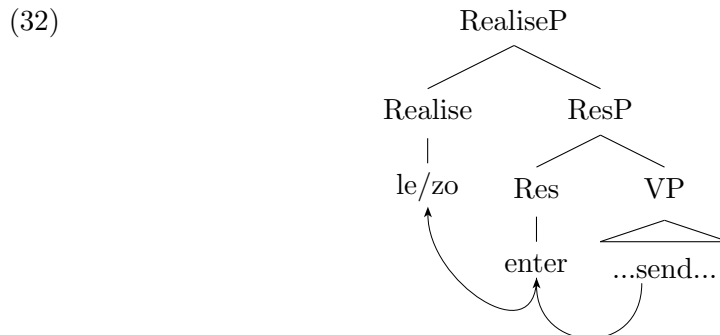


⁶This is not new in our theory and analysis. We have proposed in Chapter 3 and Chapter 4 that the directional verbs can be inserted under V, apart from being inserted under Res or Path. For example, when directional verbs are used alone, we analysed them as being under both V and Res (see Section 4.1.1).

Mandarin, however, incorporates V_{gen} and V_{deic} into the X^0 level item $V_{\text{gen-}V_{\text{deic}}}$ first. This readily formed cluster is inserted under both V and Res (see Section 4.1.2). After the head movement, le ends up following V_{deic} . The tree is shown in (31).



In the case of the serialising pattern $V_{\text{dis}} V_{\text{gen}}$, since both Mandarin and Cantonese can insert V_{gen} under Res , after the head movement, both zo and le end up following the whole verb string:



In this section, we have seen that the position of zo in the Cantonese DSVCs can also be captured by our theory. And the distributional difference between zo and le follows from the Insertion Rules proposed in Section 5.1.

5.3 The Merge Position of the Locative Object

Now we move on to the third difference between Mandarin and Cantonese DSVCs, which is about the position of the locative object. Remember that in Mandarin, locative objects should follow a general directional verb. However,

in Cantonese, locative objects should follow the deictic directional verb if both V_{gen} and V_{deic} are present. For example, if a verb string $V_{\text{gen}} V_{\text{deic}}$ involves a locative object, Mandarin adopts the $V_{\text{gen}} \text{LocO} V_{\text{deic}}$ order while Cantonese adopts the $V_{\text{gen}} V_{\text{deic}} \text{LocO}$ order. The examples are shown in (33) and (34).

Mandarin: $V_{\text{gen}} \text{LocO} V_{\text{deic}}$

- (33) a. Ta **shang** le shan **lai**.
3sg ascend ASP mountain come
b. *Ta **shang lai** shan.
3sg ascend come mountain
'S/He came up the mountain.'

Cantonese: $V_{\text{gen}} V_{\text{deic}} \text{LocO}$

- (34) a. Keoi **soeng** zo **lai** saam lau.
3sg ascend ASP come third floor
b. *Keoi **soeng** saam lau **lai**.
3sg ascend third floor come
'S/he ascended here (the third floor).'

Similarly, while in Cantonese the sequence $V_{\text{m}} V_{\text{deic}} \text{LocO}$ is perfectly grammatical, Mandarin tends to add a V_{gen} and allocate the locative NP between the V_{gen} and V_{deic} , namely using the $V_{\text{m}} V_{\text{gen}} \text{LocO} V_{\text{deic}}$ order (also see Section 4.2.1.2), which is not allowed in Cantonese. The examples (35) and (36) show how the two languages introduce a locative DP into the verb string $V_{\text{m}} V_{\text{deic}}$.

Mandarin

- (35) a. ?Ta **fei lai** le Beijing.
he fly come ASP Beijing
b. Ta **fei dao** Beijing **lai** le.
he fly arrive Beijing come ASP
'He fled to Beijing.'

Cantonese

- (36) a. Keoi **paau** zo **lai** zungdim.
S/he run ASP come finishing-line

- b. *Keoi **paau dou** zungdim **lai**.
 S/he run arrive finishing-line come
 ‘S/he ran here to the finishing line.’

The distributional difference of the locative object actually follows the Insertion Rules. The Insertion Rules state that the V_{deicS} in Cantonese should be inserted below Path. Then the locative object must be inserted under the complement node of Path, as is shown in Example (37).



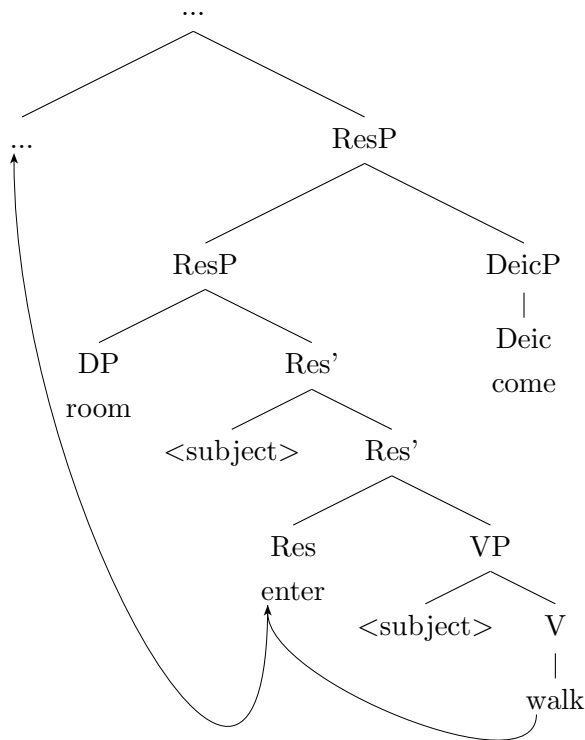
Therefore, the locative object in Cantonese always follows the V_{deic} , not the V_{gen} .

In Mandarin DSVCs, single V_{deicS} can be merged under Res or Deic. Specifically, we analysed the V_{deicS} directly following the co-event verb (e.g. the V_{deic} in the $V_{\text{dis}}/V_{\text{m}} V_{\text{deic}} O$ patterns) as being inserted under Res. We argued in Section 4.2.1.2 that V_{deicS} under Res do not need a locative object in its specifier because the semantics of V_{deicS} entails an endpoint such as ‘here’ or ‘there’.⁷ Therefore, adding a locative DP after the V_{deic} inserted under Res is less favoured, as in (35-a), compared with (35-b).

The other single V_{deicS} in Mandarin DSVCs, including the ones which are separated from the co-event verb by an object (e.g. the V_{deic} in $V_{\text{dis}} O V_{\text{deic}}$) and the ones which are separated from a V_{gen} by a locative object (e.g. the V_{deic} in $(V_{\text{m}}) V_{\text{gen}} \text{LocO} V_{\text{deic}}$), are analysed as being inserted under Deic, which projects an adjunct phrase attaching to ResP or PathP. When the DeicP adjoins to a ResP, the locative object is inserted as the second specifier of Res, as in (38).

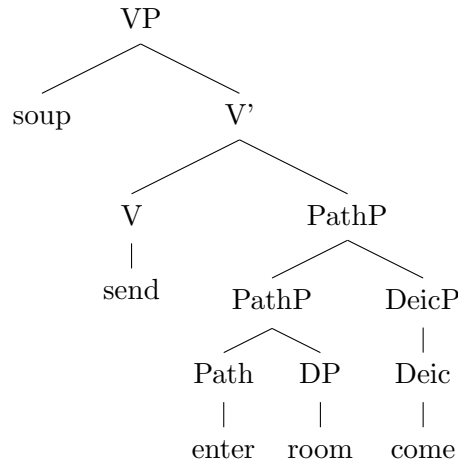
⁷Note that in Cantonese, V_{deicS} are never under Res, hence, the fact that the locative object follows V_{deic} in Cantonese does not challenge this argument.

(38)



When the DeicP adjoins to PathP, the locative object is inserted under the complement node of Path, as in (39).

(39)



In both cases, the locative object ends up following the V_{gen} but preceding the V_{deic} .

In summary, the different positions of the locative object in the Cantonese and Mandarin DSVCs are a natural consequence of the Insertion Rules as well.

5.4 The Insertion Rules and Microparameter

In the previous sections, I have shown the potentiality of the proposed theory in analysing the difference between the DSVCs in Cantonese and Mandarin. We have generalised a set of Insertion Rules for each type of directional verbs in Mandarin and Cantonese, which determine the surface difference. The Insertion Rules are repeated in (40)⁸.

(40) Insertion Rules in Mandarin and Cantonese

1. Insertion rule for $V_{\text{deic}}\text{S}$: In Mandarin, $V_{\text{deic}}\text{S}$ can be inserted under the node Res, or the node Deic, which itself projects a DeicP adjunct adjoined to ResP or PathP. In Cantonese, $V_{\text{deic}}\text{S}$ can be inserted under the node Path, but not under Res or Deic.
2. Insertion rule for $V_{\text{gen}}\text{S}$: In both Mandarin and Cantonese, $V_{\text{gen}}\text{S}$ can be inserted under Res or Path.
3. Insertion rule for the syntactically formed cluster $V_{\text{gen}}\text{-}V_{\text{deic}}$: In Mandarin, $V_{\text{gen}}\text{-}V_{\text{deic}}\text{S}$ can be inserted under Res or Path. In Cantonese, $V_{\text{gen}}\text{-}V_{\text{deic}}\text{S}$ can be under Path, but not under Res.

The rules can be simplified in Table 5.4.

Table 5.4: Insertion Rules

Directional verb type	Insertion position in Mandarin	Insertion position in Cantonese
V_{deic}	Res/Deic	Path
V_{gen}	Res/Path	Res/Path
$V_{\text{gen}}\text{-}V_{\text{deic}}$	Res/Path	Path

These insertion rules are still pretty descriptive, although they indeed capture the three surface differences between the Mandarin and Cantonese DSVCs identified in the beginning of this chapter. Then what is behind these rules? More precisely, is there a parameter that determines the difference in insertion rules?

⁸Since all the directional verbs can be inserted under the V node in both languages, we do not specially specify it in the rules.

A wide spread idea about syntactic parameters is that they are limited to being features of functional elements (Kayne 2005: 4). In a projectionist model, this means that syntactic parameters are features of elements of the lexicon because in the projectionist models functional elements are part of the lexicon. In a neo-constructionist model, however, the lexicon is devoid to the maximal extent (although proposals vary from each other). Therefore, in such models, it is more reasonable to assume that the parameters reside in syntax. More specifically, parameters are possibly features/properties of the functional terminal nodes generated by syntax.

It has also occasionally been thought (such as Baker (1996)) that parameters must compactly characterize a significant group of (historically not necessarily related) languages, such as the so-called polysynthetic ones, and that the term “parameter” itself should only be used when there is a notable, or dramatic, range of effects. For example, the pro-drop parameter has multiple effects such as: expression or non-expression of unstressed pronominal subjects, the possibility of having postverbal subjects and whether or not they allowed “that”-trace violations (Kayne 2005: 5,7). However, Kayne (2005) argues that not every parameter needs to have an equally wide range of effects and postulates the term ‘microparameter’ to refer to the parameters that at least in some cases differentiate two very closely related languages (e.g. dialects), contrasting with the ‘macroparameters’. The benefit of investigating microparameters in sets of very closely related languages, languages that differ from one another in only a relatively small number of syntactic ways, is that it would be more likely for us to find out which syntactic properties are parametrically linked to which others, as Kayne points out:

“we can take one language or dialect, then look for another very similar one that differs with respect to a property we are interested in. The closeness of the languages or dialects in question will make it relatively more likely that any other syntactic property that we discover to vary between the two will be parametrically related to the first.”

(Kayne 2005: 8)

The parameters in play here, with regard to the different insertion rules observed in Mandarin and Cantonese DSVCs, belong to ‘microparameters’. To cover the insertion rules, I suggest that the parameter lies in the features born on the functional terminal nodes Res and Path. Recall that in Section 3.3.1.3 I postulate that the mechanism behind the lexical item insertion in our sys-

tem hinges on whether the terminal nodes share or identify a certain feature with the selected lexical item in the **numeration**. Now we can specifically assume that apart from the [res] and [path] features, the terminal nodes Res and Path also bear other features that regulate lexical item insertion. The ones that are related to our puzzle are [+/- deic] and [+/- (gen&deic)]. Specifically, the Mandarin Res node is specified with [+deic, +(gen&deic)] while the Cantonese Res is specified with [-deic, -(gen&deic)]; the Mandarin Path node is specified with [-deic] whereas the Cantonese Path is specified with [+deic]. Table 5.5 illustrates the features specified on the Res and Path nodes in these two languages, i.e. their parametric differences.

Table 5.5: The parametric difference between Mandarin and Cantonese

	Mandarin	Cantonese
Res	[res, +deic, +(gen&deic)]	[res, -deic, -(gen&deic)]
Path	[path, -deic, +(gen&deic)]	[path, +deic, +(gen&deic)]

How do these two parameters lead to the insertion rules we have concluded in Table 5.4? First, the [-deic] and [-(gen&deic)] on the Cantonese Res determine that $V_{\text{deic}}\text{S}$ and the compound $V_{\text{gen}}\text{-}V_{\text{deic}}\text{S}$ cannot be identified by Path, hence $V_{\text{deic}}\text{S}$ and $V_{\text{gen}}\text{-}V_{\text{deic}}\text{S}$ cannot be inserted under Res. Instead, they are inserted under Path, which bears the identifying features [+deic] and [+ (gen&deic)]. Secondly, the [+deic] and [+ (gen&deic)] on the Mandarin Res enable Res to identify V_{deic} and $V_{\text{gen}}\text{-}V_{\text{deic}}$, therefore, $V_{\text{deic}}\text{S}$ and $V_{\text{gen}}\text{-}V_{\text{deic}}\text{S}$ in Mandarin can be inserted under Res. The [-deic] on the Mandarin Path results in the fact that $V_{\text{deic}}\text{S}$ cannot be under Mandarin Path. As a result, Mandarin has to introduce another functional head Deic to accommodate $V_{\text{deic}}\text{S}$, which is not needed in Cantonese. Thirdly, if we observe the insertion rules (Table 5.4), we can see that the rule for the $V_{\text{gen}}\text{S}$ is the same between the two languages: $V_{\text{gen}}\text{S}$ are allowed to be under Res or Path. This can be captured by our theory as well. I have illustrated in Section 3.3.1.3 that the insertion of $V_{\text{gen}}\text{S}$ is licensed by Res and Path because $V_{\text{gen}}\text{S}$ bear semantic features [track] and [goal], which can be identified by the categorial [res] feature on Res and [path] feature on Path respectively. In other words, the insertion of $V_{\text{gen}}\text{S}$ is not influenced by the two identifying features [+/-deic] and [+/- (gen&deic)], but by the categorial features [res] and [path] on the functional terminal nodes. Of course, an alternative way to account for the insertion of $V_{\text{gen}}\text{S}$ is to say

that in both languages, Res and Path both bear the [+gen] feature. However, postulating a new feature is less economical than just utilising the existing features to achieve our goal. Therefore, I adopt the first hypothesis. At least it suffices to account for the difference between Mandarin and Cantonese.

The investigation and analysis of the Cantonese DSVC data as well as the comparison with the Mandarin counterpart in this chapter only aims to show to what extent our theory can be extended to languages other than Mandarin, presenting a snapshot of possible future research direction. For example, the difference between Mandarin and other dialects of Chinese may also be captured by proposing similar microparameters as such, which regulate specific insertion rules for each dialect. However, the investigation and argument in this chapter is by no means exhaustive. To achieve a more profound comparative syntactic study and work out a more precise parameter, we need future research with a wider range of data.

Chapter 6

Concluding Remarks

The main topic of this thesis has been the directional serial verb construction (abbreviated as DSVC) in Mandarin Chinese. There are two objectives to be achieved, which are set out in the beginning of Chapter 1. One objective is to carry out a thorough investigation on the Mandarin DSVCs, with a particular interest in the word order alternations. The other objective is to put to the test the constructionist approach, exploring its potential explanatory power in accounting for the human language faculty. To achieve these goals, I have followed the roadmap provided at the end of Chapter 1. The findings and proposal are summarised below.

Chapter 2 provides the main data and research questions. The Mandarin DSVCs is divided into seven serialising patterns, repeated below:

- a. $V_{\text{gen}} + V_{\text{deic}}$
- b. $V_{\text{m}} + V_{\text{deic}}$
- c. $V_{\text{m}} + V_{\text{gen}}$
- d. $V_{\text{m}} + V_{\text{gen}} + V_{\text{deic}}$
- e. $V_{\text{dis}} + V_{\text{deic}}$
- f. $V_{\text{dis}} + V_{\text{gen}}$
- g. $V_{\text{dis}} + V_{\text{gen}} + V_{\text{deic}}$

We have two major findings. The first finding centres around word order alternations. Specifically, pattern (e) and (g) allow the object of V_{dis} to appear respectively after each verb in the string, thus resulting in several word order

variants. Pattern (f), although also involving a V_{dis} , does not sanction such alternations. And we have found that the VVO types of variants behave differently from the VOV types of variants in terms of their telicity value, and their interaction with the aspect marker *le*, negation and potential morphemes. The findings are summarised in Table 6.1.

Table 6.1: The syntactic and semantic characteristics of the word order variants observed in patterns (e) to (g)

word orders	telicity	position of <i>le</i>	with negation	with <i>de/bu</i>
$V_{\text{dis}} V_{\text{deic}} O$	telic	$V_{\text{dis}} V_{\text{deic}} le O$	*bu, mei	YES
$V_{\text{dis}} O V_{\text{deic}}$	atelic	$V_{\text{dis}} le O V_{\text{deic}}$	bu, mei	NO
$V_{\text{dis}} V_{\text{gen}} O$	telic	$V_{\text{dis}} V_{\text{gen}} le O$	*bu, mei	Yes
* $V_{\text{dis}} O V_{\text{gen}}$	–	–	–	–
$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$	telic	$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} le O$	*bu, mei	YES
$V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$	atelic	$V_{\text{dis}} le O V_{\text{gen}} V_{\text{deic}}$	bu, mei	NO
$V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$	telic	$V_{\text{dis}} V_{\text{gen}} le O V_{\text{deic}}$	*bu, mei	YES

Besides, we have found that directional verbs directly following the co-event verb are often interpreted metaphorically. This interpretation is not observed with the VOV type of variants.

The second finding is about the distribution of the locative object and the aspect marker *le*. The generalization for the distribution of the locative object is that in Mandarin DSVCs the locative object tends to occur after the V_{gen} rather than V_{deic} when both of them present. Beside, when the V_{gen} is at the end of the sentence, it must be followed by a locative object.

The distribution of *le* in all the DSVC patterns is summarised in Table 6.2. The generalization is that *le* follows the directional verb(s) which themselves directly follow the co-event verb; if the directional verb(s) are separated from the co-event verb, *le* follows the co-event verb. The only exception is the $V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$ pattern, which allows both positions for *le*.

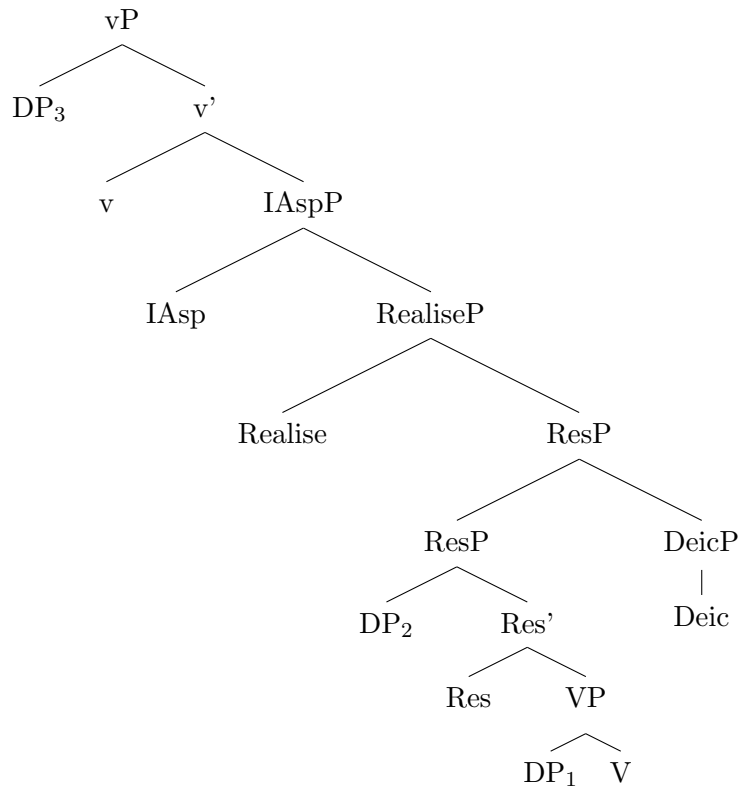
Table 6.2: The position of *le* in Mandarin DSVCs

Serialising pattern	Position of <i>le</i>
$V_{\text{gen}} V_{\text{deic}}$	$V_{\text{gen}} V_{\text{deic}} le$
$V_{\text{m}} V_{\text{deic}}$	$V_{\text{m}} V_{\text{deic}} le$
$V_{\text{m}} V_{\text{gen}}$	$V_{\text{m}} V_{\text{gen}} le$
$V_{\text{m}} V_{\text{gen}} V_{\text{deic}}$	$V_{\text{m}} (le) V_{\text{gen}} V_{\text{deic}} (le)$
$V_{\text{dis}} V_{\text{deic}} O$	$V_{\text{dis}} V_{\text{deic}} le O$
$V_{\text{dis}} O V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{deic}}$
$V_{\text{dis}} V_{\text{gen}} O$	$V_{\text{dis}} V_{\text{gen}} le O$
$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$	$V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} le O$
$V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$	$V_{\text{dis}} le O V_{\text{gen}} V_{\text{deic}}$
$V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$	$V_{\text{dis}} V_{\text{gen}} le O V_{\text{deic}}$

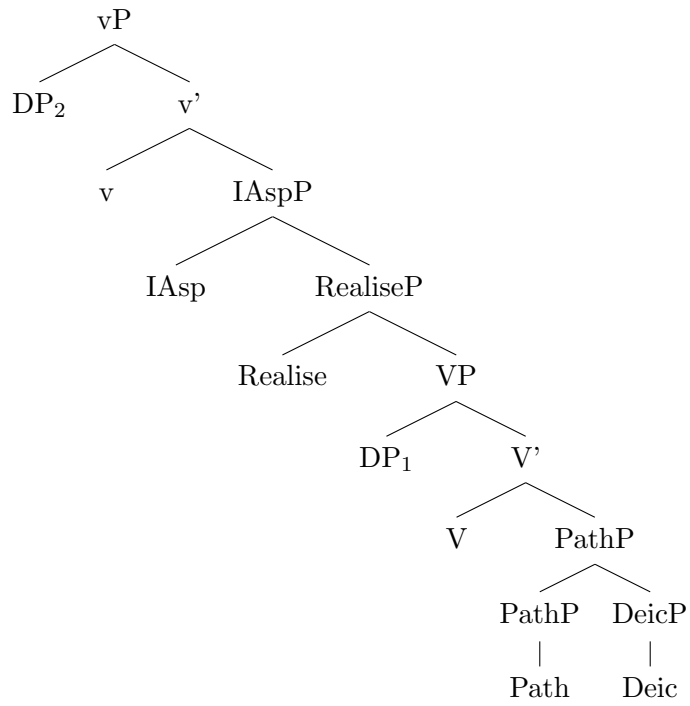
These findings constitute the main empirical puzzles of this thesis.

Chapter 3 develops a neo-constructionist theory, inspired by various constructionist proposals in the literature. In our model, syntax first generates the structure which is an event structure in essence. The lexical items are then inserted under the nodes in this structure according to the syntactically related features specified on the nodes as well as the categorial and semantic features specified on the lexical item. The structures underlying DSVCs involve a VP and a series of functional projections, which form a hierarchy of vP-IAsP-RealiseP-ResP-VP-PathP. Specifically, VP is the core of the structure, representing the process of the event; ResP expresses the result state; PathP describes a moving track; RealiseP accommodates the aspect marker *le*; IAspP is for telicity value calculation. Among these projections, vP, VP and ResP are similar in terms of function to the initP, procP and resP in Ramchand's first phrase syntax. I have also postulated a DeicP which can be adjunct to ResP or PathP. By hypothesis, ResP and PathP cannot appear in the same structure, hence, we have two types of structures to represent DSVCs, repeated in (1) and (2) respectively.

(1) ResP structure



(2) PathP structure



I have argued that the word order alternations are consequences of inserting directional verbs under different functional heads. In specific, inserting directional verbs under Res (structure (1)) results in the VVO type of word orders whilst inserting directional verbs under Path (structure (2)) results in the VOV types of word orders.

In Chapter 4 I have applied this model to the puzzling data illustrated in Chapter 2 and have shown that apart from the surface word orders, the syntactic and semantic differences between the word order variants as well as the distribution of *le* and the locative object in all the Mandarin DSVCs can all be captured with such a model.

In Chapter 5, I further applied the theory to Cantonese DSVCs which utilise the same types of verbs. I have posited three different characteristics between Mandarin and Cantonese DSVCs, including the availability of word order alternations, the distribution of the aspect marker *le* and *zo* and the distribution of the locative object. We generalised a set of insertion rules to account for the divergence between Mandarin and Cantonese DSVCs. The idea is that languages have different rules regulating the insertion of the directional verbs. A particular type of directional verbs can be sanctioned under different nodes in different languages. And we further reduce the insertion rules to a few microparameters, which in essence are features specified on the functional terminal nodes Res and Path, repeated in Table 6.3.

Table 6.3: The parametric difference between Mandarin and Cantonese

	Mandarin	Cantonese
Res	[res, +deic, +(gen&deic)]	[res, -deic, -(gen&deic)]
Path	[path,-deic, +(gen&deic)]	[path, +deic, +(gen&deic)]

The analysis of the DSVC data shows that the instantiation of the multi-argument realization phenomenon in the Mandarin DSVCs can be properly handled within a constructionist approach. Such a model has obvious advantages. It allows the semantics of event structure and the event participants to be built up compositionally in syntax, which means that we have more flexibility in dealing with argument alternation issues, instantiated by the word order variation in our thesis. Within a constructionist framework, we can propose a fine-grained structure, in which lexical items have relatively free insertion

options. This, on the one hand, helps us to capture the word order variation. On the other hand, if there is any interpretational difference among the variants, we can compose each interpretation by looking at the exact merging position of that lexical item in the decompositional structure. Imagine that if we follow a projectionist approach, which constructs the syntactic structure based on a bunch of lexical entries of the lexical item, we will probably assume a basic structure which is projected from the verb, and then derive the other variants by moving the arguments in the tree, following certain syntactic rules, constraints, etc. Then we have to answer questions such as ‘what is the ultimate reason for the movement?’ or ‘what consequence can the movement bring about?’. If movement does not change meaning or anything else, it seems to be mysterious why languages need different word orders to express exactly the same meaning. However, it is not trivial to answer such questions, namely, to find a reasonable motivation for the movement. Moreover, if the variants are not completely equivalent to each other in semantics, it is not so straightforward for a projectionist approach to capture this meaning change with a few syntactic movements in a tree, compared with the constructionist approach. And this is indeed why the constructionist precursors tend to argue for their proposals on the basis of empirical data instantiating some sort of argument alternation. The other type of multi argument realization is event composition. The advantages of a constructionist approach in dealing with cases involving event composition is also exciting. Projectionists have to assume polysemy or come up with lots of lexical rules to explain the unselected material in a phrase. In our DSVC data, the directional verbs are not selected by the motion/displacement verbs. What licenses them there construes a big question in a projectionist model. Whereas with a constructionist approach, we can just postulate some functional projections relating to event composition, such as result phrase, and then insert the lexical item, because by hypothesis, it is the syntax module, rather than the lexical item, that licenses these functional projections. And in this way we also guarantee that syntax is the only computing module, which, in my view, is a preferable and more economical theoretical assumption than the claim that both syntax and lexicon are involved in the computation work of generating sentences. All in all, we have managed to put to the test the constructionist approach in this thesis. Of course, as a theoretical framework to explain the nature of UG, the constructionist approach still has a long way to go. For example, one may ask questions such as ‘what are the fundamental elements shared among languages? Are they functional

heads or even more primitive features that compose the heads?'. These are not questions we can answer now. I am also not claiming that the projectionist approaches can never solve the problems illustrated in this thesis in a neater way, nor that the constructionist models always beat the projectionist ones. Although we have made a few projectionist style attempts in the thesis and they do not seem to be able to account for the data satisfactorily, we need to make a more detailed and systematic comparison between the two frameworks in order to tell which camp is more advantageous.

The thesis has brought about a number of contributions. Obviously, the two objectives that have been achieved constitute the two major contributions. First and foremost, the proposed theory, which absorbs the core spirit of many other constructionist syntactic models, successfully covers the observed empirical puzzles. Although the theory so far has been concentrating on a specific domain in Mandarin (with some extension to Cantonese), the application of the theory does show its flexibility and explanatory power. The theory shows sympathy to a bunch of beliefs shared among the constructionists, such as the belief of an impoverished lexicon, the idea that syntactic structure is basically event structure and semantics reads off the syntax, and the decompositional approach that spans one item to different heads. Hence, this study provides a decent experimental support for the promising constructionist approaches in explaining the human language faculty. Secondly, the data presented in the thesis, which centres around the Mandarin DSVCs, is more thorough in breadth and depth than the previous generative literature working on similar topics. The thesis adopts an exhaustive approach to investigate the word order issue of the Mandarin DSVCs, taking into consideration all the possible combinations of motion/displacement verbs and directional verbs. More importantly, the thesis digs into the semantic and syntactic differences between the word order variants. This angle is novel and may constitute a basis for future studies to explore more subtle differences among the word order variants in Mandarin DSVCs. And because of this systematic examination of the data, we manage to develop an articulated syntactic structure, which reflects more syntactic and semantic information than the earlier transformation proposals in the literature, which simply show how the word orders are derived.

Of course, a piece of work on a particular area in a particular language is far from enough to reveal the 'truth' behind human languages. Besides, the theory must have holes, and may be challenged by counter examples. However, the

value of a theory should be measured by the insights it stimulates and the subsequent research it promotes. To close the thesis, I note down the following perspectives/questions for future exploration.

The study can hopefully inspire the analysis of resultatives and the study of spacial Ps. I have mentioned in the theory that the Mandarin resultatives also take the form of serial verbs and they can also fit into the structure containing a ResP. But Mandarin resultatives have been observed with more dynamic argument structure. For instance, in *da si lang* ‘hit die wolf’ *lang* is the theme of *da* and *si*, but in *kan dun dao* ‘cut blunt knife’, *dao* is the theme of *dun* but not the theme of *kan*. Then how to enrich the model in order to account for such dynamism would be an interesting topic. In the area of spatial Ps, most studies have focused on languages with an uncontroversial P category and proposed fine-grained PathPs and PlacePs. The languages that do not possess an uncontroversial category P, however, cannot directly fit into these models. This study opens a window to look at the Path structure of Mandarin, an example of Equipollently-framed languages, which utilises serial verbs to express motion and direction. It contributes a tentative representation of the Path structure in these languages. From a cross-linguistic point of view, we hope the proposed theory can be developed to suit more languages, ranging from serial verb languages, such as other dialects of Chinese, to languages that do not permit serial verbs, such as English.

Within Mandarin itself, the theory can be experimented on a broader range of linguistic phenomenon. One possible direction is to apply the theory to the transition between double object and dative constructions illustrated in (3).

- (3) a. Ta mai gei le wo yi ge biao.
 3sg buy give ASP 1sg one CL watch
 b. Ta mai le yi ge biao gei wo.
 3sg buy ASP one CL watch give 1sg
 ‘S/He bought me a watch.’

It would also be interesting to connect the model with the study of the *ba* construction because DSVCs are often used with the *ba* construction. And the data below seems to suggest that the word order variants observed in the V_{dis} (V_{gen}) V_{deic} patterns do not equally allow co-occurrence with *ba*.

Specifically, (4), (5) and (6) show that the $V_{\text{dis}} V_{\text{deic}} O$, $V_{\text{dis}} V_{\text{gen}} V_{\text{deic}} O$ and $V_{\text{dis}} O V_{\text{gen}} V_{\text{deic}}$ orders can be transformed into a *ba* construction.

- (4) Xiaoming ba tang **song lai** le <tang>.
 Xiaoming BA soup send come ASP <soup>
 ‘Xiaoming brought the soup.’
- (5) Xiaoming ba tang **song jin qu** le <tang>.
 Xiaoming BA soup send enter go ASP <soup>
 ‘Xiaoming sent the soup in (there).’
- (6) Xiaoming ba tang **song** le <tang> **jin qu**.
 Xiaoming BA soup send ASP <soup> enter go
 ‘Xiaoming sent the soup in (there).’

The $V_{\text{dis}} O V_{\text{deic}}$ and $V_{\text{dis}} V_{\text{gen}} O V_{\text{deic}}$ orders cannot be transformed into a *ba* construction, as in (7) and (8).

- (7) *Xiaoming ba tang **song** le <tang> **lai**.
 Xiaoming BA soup send ASP <soup> come
 ‘Xiaoming brought the soup.’
- (8) *Xiaoming ba tang **song jin** le <tang> **lai**.
 Xiaoming BA soup send enter ASP <soup> come
 ‘Xiaoming brought in the soup.’

So far the theory cannot explain these pieces of data. Hopefully further research would be able to integrate the current model with the studies on the higher domain of the clause to reveal the answer.

Apart from the suggested future research directions illustrated above, there are still loads of myths residing in Chinese DSVCs. This thesis mainly looks at DSVCs in the syntactic way. However, some questions may require the assistance of formal semantics. These all await for further research.

Abbreviations

1,2,3	1st, 2nd, 3rd person
ASP	aspect
BA	the function word in <i>ba</i> -construction
CL	classifier
DE	a complementizer in Mandarin (among other uses)
DEF	definite
DUR	durative aspect
EXP	experience aspect
LocO	locative object
NEG	negation
PASS	passive marker
Pl	plural
POSS	possessive marker
POST	postposition
Prt	particle
SFP	sentence final particle
Sg	singular
V _{deic}	deictic directional verb
V _{dis}	displacement verb (transitive)
V _{gen}	general (non-deictic) directional verb
V _m	motion verb (intransitive)

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