The syntax of aspectual deixis in Mandarin Chinese

Wei-Min Wu

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University of York

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Abstract

This thesis investigates the aspectual use of the deictic verbs in Mandarin Chinese, such as *lai* 'come' in *wo lai kai men* 'I'll open the door' and *jing xia xin lai* 'calm down'. Deictic verbs are usually used to indicate movement in space, the location of which is related to the speaker. In addition to physical movement, deictic verbs can also be used in a metaphorical way, where abstract motion takes place. I argue that in Mandarin Chinese, when the deictic verb appears before and after a verb phrase, it functions as a viewpoint aspect. The preverbal aspectual deictic verb refers to the state prior to the occurrence of the event. Both the pre-VP *lai* 'come' and the pre-VP *qu* 'go' signify the state before the event, yet they view the event from different angles. On the other hand, the deictic verb following the verb phrase indicates some part of the event. In this usage, *lai* 'come' refers to the result state of the event and *qu* 'go' designates the early part of the event. I propose two Deictic Phrases between ModP and AspP for the aspectual deictic verb. When the aspect is associated with the speaker's physical location, the deictic verb is in the Spatial Deictic head; when the aspect is related to the speaker's perspective, the deictic verb is in the Nonspatial Deictic head. These Deictic heads inherit [+/-realize] features from C. When the feature is [-realize], it refers to the state prior to the occurrence of the event and agrees with the event in situ. When the feature is [+realize], it refers to some part of the event and triggers the event to move to the Spec,DeicP, making the deictic verb appear after the verb phrase.

Contents

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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.

Chapter 1

Preparing the ground

1.1 Introduction

Speaking of motion, what comes to our mind first is movement in space. This movement can be further divided into whether or not the speaker's location is involved. When it is not involved, the movement is non-deictic; when it is taken into consideration, the movement is deictic, and the deictic verbs *come* and *go* are used. In (1), if the subject, *John*, moves toward the speaker, we utter (1a); if the subject does not move toward the speaker, we say (1b).

(1)   a.   John came to the supermarket.
        b.   John went to the supermarket.

In addition to movement in space, the deictic verb can also be used in non-physical movement. One of the examples is 'be going to' in English, which indicates something happening in the near future:

(2)   He is going to open the door.   (Shen, 1996:532)

Example (2) can have two interpretations. When *go* does not involve movement in space, it means that 'the subject will open the door in the imminent future'; when *go* signifies movement in space, it means that 'the subject is following a spatial path at the end of which he will initiate the process of opening the door' (Shen, 1996:532).

Apart from *go* in 'be going to' referring to the near future, the deictic verb can

also extend to non-physical movement in the following ways:

(3)   a.   The milk went sour.
          b.   Simon came to realize that farming was not his forte.
              (Clark, 1974:323,325)

In Mandarin Chinese, the deictic verb can be used in a context which is irrelevant with physical movement in space as well. However, when the deictic verb does not mean spatial movement in Mandarin Chinese, it co-occurs with a verb phrase, unlike in English, where the deictic verb is used as the main verb.

Consider the following example:

(4)   a.   wo lai   xiang banfa.
              I   come think way
              'I'll think of a way (to handle something).'
          b.   Laowang fang xia   wan lai.
              Laowang put descend bowl come
              'Laowang put down the bowl.'

In (4a), the deictic verb *lai* 'come' precedes the verb phrase *xiang banfa* 'think of a way'; in (4b), the deictic verb *lai* 'come' follows the verb phrase *fang xia wan* 'put down the bowl'. As can be seen by the English translation, *lai* 'come' in both sentences does not have the meaning of spatial movement, which shows that it does not indicate physical movement toward the speaker. In both sentences, the meanings seem to be the same with or without the deictic verb *lai* 'come'. What is more, in (4a), *lai* 'come' can be replaced by *qu* 'go' without changing the core meaning, but in (4b), *lai* 'come' cannot be replaced by *qu* 'go':

(5)   a.   wo qu xiang banfa.
              I   go think way
              'I'll think of a way (to handle something).'
          b. *Laowang fang xia   wan qu.
              Laowang put descend bowl go
              'Laowang put down the bowl.'

Apart from the asymmetries between *lai* 'come' and *qu* 'go', when the deictic verbs appear before and after a verb phrase, they can also contain the meaning related to movement in space:

(6)   a.   Laowang lai   kan dianying.
               Laowang come see movie
               'Laowang came to see the movie.'

        b.   Laowang pao jin   fangjian lai.
               Laowang run enter room   come
               'Laowang ran into the room toward me.'

In this thesis, I am going to investigate the meaning and the function of the deictic verb when it co-occurs with a verb phrase, especially the deictic verb which does not seem to carry any meaning, as in (4). My research question is: what is the function and the meaning of the deictic verb when it co-occurs with a verb phrase and does not have a clear spatial reading? Before we start investigation, let us first review the notion of deixis and the theories that are used in this thesis.

The chapter is organized as follows. Section 1.2 examines deictic and non-deictic uses of motion, followed by the metaphorical uses of the deictic verbs in Section 1.3. Section 1.4 addresses the classifications of how deictic verbs are used in Mandarin Chinese by Tang (1979). Section 1.5 introduces Chomsky's (2000; 2001; 2008) phase theory, which is adopted in the analyses. Section 1.6 looks at the syntactic configuration proposed by Travis (2010). Section 1.7 summarizes this chapter.

1.2   Deictic vs. non-deictic

Talmy (1978) applies the terms 'Figure' and 'Ground' from Gestalt psychology to linguistic semantics. He states that '[t]he Figure object is a moving or *conceptually* mov*able* point whose path or site is conceived as a variable the particular value of which is the salient issue; [t]he Ground object is a reference-point, having a stationary setting within a reference-frame, with respect to which the Figure's path or site receives characterization' (Talmy, 1978:627). For example, in (7), *the pen* is the Figure and *the table* is the Ground:

(7)   a.   The pen lay on the table.
        b.   The pen fell off the table.   (Talmy, 1978:627)

Within the reference-frame, the Ground *the table* does not move and serves as a reference point to the Figure *the pen*. In (7a), the pen is located in a position related to the table. When the pen is on top of the reference point, we use the preposition *on*. In (7b), the pen undergoes movement. The description of the

moving direction depends on the position of the reference point. When the pen moves downward from the reference point, we can use the verb *fall*.

The Figure and Ground relation can also be seen in the following example:

(8) a. The bike is near the house.
     b. The house is near the bike.   (Talmy, 1978:628)

Talmy (1978) claims that the two sentences are symmetric with respect to the distance between the bike and the house; however, they differ in the roles of the two objects. In (8a), the bike is the Figure and the house is the Ground. The house has a set location within the framework (e.g., the neighborhood, world, and so on, implicitly) and is treated as the reference point, whereas the bike's location is a variable as the bike can appear in different places on different locations. By contrast, in (8b), the bike is regarded as the Ground and the house as the Figure. Therefore, the bike is viewed as the reference point and the house's location is the variable, which does not really conform to our knowledge about the real world and thus makes (8b) more distinct from (8a).

The concept of Figure and Ground can extend to the non-physical situations, such as the motion-like sentences below:

(9) a. She grew to resemble him.
     b. He grew to resemble her.   (Talmy, 1978:630)

In (9a), the female is the Figure and the male is the Ground. The female's growing can be viewed as a moving path of the female, and the male is the reference point, which is stationary in the reference-frame. By contrast, in (9b), the male's growing is a moving path of the male and the female is the reference point. Despite the fact that the results of the two sentences in (9) are that the male and the female look alike, their meanings are not the same in that the reference points differ, making the paths of the objects distinct as well.

In the above examples, it looks like the first object is always the Figure and the second object the Ground. However, Talmy (1978) states in a footnote that in some cases, the semantic roles remain the same even though the surface positions of the objects change:

(10) a. Smoke (F) slowly filled the room (G).

b. The room (G) slowly filled with smoke (F). (Talmy, 1978:629)

In (10), *smoke* is the Figure and *the room* is the Ground in both sentences. One of the factors to cause differences between the two sentences is 'perspectival viewpoint', 'where one places one's mental eyes to look out over the rest of the scene' (Talmy, 1978:629). In (10a), the author describes the event by positioning himself on the smoke wave; in (10b), the author locates himself in the room watching the event happening.

In addition to Figure and Ground, Talmy (1975, 1978) argues that two other components need to be considered with respect to motion/location events as well: the Path, represented by the adposition, and the State-of-Motion, represented by the verb. The representation of (7) can be shown as follows (adapted from Talmy, 1978:642):

(11)
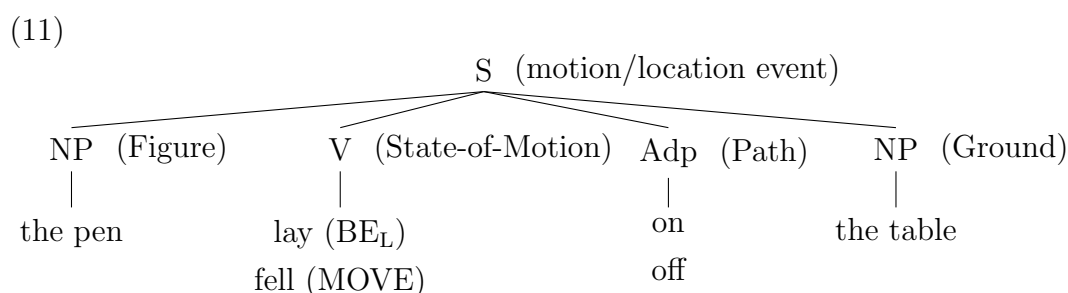
The Paths in (7) are represented by the prepositions *on* and *off*. The State-of-Motion may be represented by either of the two deep verbs: *MOVE* and *BE-Located*. When the Figure moves, the State-of-Motion is MOVE, such as *fall*; when it does not move, the State-of-Motion is BE-Located, like *lay*.

From the above, we can see that in order to describe motion or location of a certain object, a reference point is needed. When the reference point is not an object but the speaker's location, motion becomes related to deixis. Fillmore (1966) examines the semantics of *come*. When uttering this verb, the location of the participants, including the speaker *I* and the hearer *you*, must be taken into consideration. When the speech time and the reference time are different, the location may be either the speaker's or the hearer's location at the speech time or at the reference time. Therefore, in (12), there are four possibilities. It may be that the speaker is at the shop now, the hearer is at the shop now, the speaker will be at the shop tonight, or the hearer will be at the shop tonight.

(12)   He will come to the shop tonight.   (Fillmore, 1966:220)

When the subject includes the participant, this participant cannot be present at the location at the reference time. In (13a), the subject is the speaker. There are thus three possibilities. It may be that the speaker is at the shop now, the hearer is at the shop now, or the hearer will be at the shop tonight. The speaker cannot already be at the shop when he himself comes. Similarly, in (13b), the subject is the hearer, which makes the sentence have three possibilities: the speaker is at the shop now, the hearer is at the shop now, or the speaker will be at the shop tonight when the hearer comes. The hearer cannot already be present at the shop when he himself comes tonight.

(13)   a.   I will come to the shop tonight.
         b.   You will come to the shop tonight.   (Fillmore, 1966:219)

When the subject is *we*, what is important is that the speaker cannot already be at the shop at the reference time. Therefore, when *we* is exclusive *we* (i.e., the hearer is not included), in (14), it is possible that the speaker is at the shop now, the hearer is at the shop now, or the hearer will be at the shop tonight when the speaker and his accompany come to the shop. The speaker cannot already be at the shop when he himself comes tonight with others. When *we* is inclusive *we* (i.e., the hearer is included), in (14), both the speaker and the hearer are at the shop now. They cannot already be at the shop when they themselves come tonight.

(14)   We will come to the shop tonight.   (Fillmore, 1966:220)

When the location is not neutral (e.g., the shop) but a deictic adverb like *there*, the speaker cannot be at the location now, given that *there* means away from the speaker. Consequently, differing from (12), (15) cannot mean that the speaker is there now. It can only mean that the hearer is at the location now, the hearer will be at the location tonight, or the speaker will be at the location tonight.

(15)   He will come there tonight.   (Fillmore, 1966:220)

Similarly, in the case of the location represented by the deictic adverb *there* and the subject being the speaker or the hearer, in addition to the subject not being able to appear at the location at the reference time, the speaker cannot be at the location now. Thus, unlike (13), (16) cannot mean that the speaker is at the location now. Example (16a) can only mean that the hearer is at the location

now or will be tonight. Example (16b) cannot mean that the speaker is at the location now either. It can only mean either that the hearer is at the location now or that the speaker will be at the location tonight.

(16)   a.   I will come there tonight.
          b.   You will come there again tonight.   (Fillmore, 1966:219)

With respect to the subject being *we* with the deictic adverb *there*, the same rule applies. Therefore, unlike (14), (17) can only be exclusive *we*, and the speaker cannot be at the location now. It can only mean that the hearer is at the location now or will be tonight.

(17)   We will come there tonight.   (Fillmore, 1966:220)

In terms of the speech time and the reference time being the same and the location being neutral (e.g., the shop), if the subject does not include the participant, it may be that either the speaker or the hearer is at the location now. However, if the subject is the speaker, the supposition can only be that the hearer is at the location now, given that the speaker cannot come to a location where he himself is already there. Similarly, if the subject is the hearer, the supposition can only be that the speaker is at the location now, for the hearer cannot already be at a location where he is coming.

Huang (1978) observes that Mandarin Chinese differs from English in the use of the deictic verb 'come'. While the hearer's location at the reference time is a possible deictic center for *come* in English, it is not possible for *lai* 'come' in Mandarin Chinese. When the speaker and the hearer are together at the speech time, and the hearer will be at a certain location at the reference time, as in (18a), the deictic verb in Mandarin Chinese cannot be *lai* 'come' and can only be *qu* 'go', as in (18b):

(18)   a.   I'll come there at dawn.
          b.   wo mingtian zaoshang hui *lai/qu nabian.
              I tomorrow morning will come/go there
              'I'll go there at dawn.'   (adapted from Huang, 1978:56)

Apart from Huang (1978), Shen (1996) also observes differences between *come* in English and *lai* 'come' in Mandarin Chinese. He analyzes *lai* 'come' in the framework of Cognitive Grammar. In Cognitive Grammar, '[a]n expression's

profile is some facet of its domain that is singled out and accorded a special type of prominence. Intuitively, the profile defines the focus of attention within the domain; it can also be described as that substructure which the expression *designates*' (Langacker, 1986:458). For example, the domain for *orphan* is the relationship between parent and child, in which parents are both dead, and the profiled entity is the child. In addition to *profiling*, Shen explains two more terms in Langacker's terminology in a footnote: *trajector*, which refers to 'the most prominent participant of an activity/process', and *landmarks*, which are 'other salient participants/locations' (Shen, 1996:537). In the case of subject/object distinction, the subject is the trajector and the object is the landmark.

Shen (1996) lists three types of *lai* 'come' with a theme subject: prototype, 'start-to-come', and 'come-arrive'. In the prototype *lai* 'come', the subject moves toward the speaker, which is almost the same as *come* in English, as in (19):

(19)   ta yijing   lai-le.[1]
        he already come-Perf
        'He has come already.'   (Shen, 1996:509)

In (19), the profiled trajector is the subject *ta* 'he'. The destination landmark (i.e., the speaker's or the hearer's location) and the trajectory of the theme (i.e., the path) are also profiled, but the source landmark (i.e., the departure location) is not.

In the 'start-to-come' *lai* 'come', which Shen (1996) treats as a variant of the prototype *lai* 'come', the final stage of the trajectory is not salient, as in (20):

(20)   ta yijing   lai-le,   xianzai zheng zai lu-shang ne.
        he already come-Perf now   right at way-on Prt
        'He has left for here already, and he is on the way right now.'
        (Lit. '*He has come already, and he is on the way right now.')
        (Shen, 1996:510)

In (20), like the prototype *lai* 'come', the trajector *ta* 'he' and the destination landmark are profiled but the source landmark is not. However, in terms of the trajectory of the theme, only part of it is profiled. The final stage of the trajectory (i.e., the theme's arriving at the destination) is not profiled. This makes *lai* 'come' differ from *come* in English. While the second clause in (20)

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[1]For consistency, the glosses in the Chinese examples cited from others have all been modified wherever necessary.

does not contradict the first one in Mandarin Chinese, it does in English, as the literal translation shows.

In contrast to the 'start-to-come' *lai* 'come', in the 'come-arrive' *lai* 'come', which Shen (1996) treats as another variant of the prototype *lai* 'come', the speaker focuses on the final stage of the trajectory. He claims that the meaning of 'come-arrive' *lai* 'come' is like 'arrive', as in (21):

(21) na-feng xin   yijing lai-le,   #xianzai zheng zai lu-shang ne.
      that-CL letter already come-Perf   now   right at way-on Prt
      'The letter has come/arrived already, #and it is on the way right now.'
      (adapted from Shen, 1996:511)

Shen (1996) states that the theme subject of the 'come-arrive' *lai* 'come' is usually inanimate, such as *na-feng xin* 'that letter' in (21). Contrary to the 'start-to-come' *lai* 'come', the final stage of the trajectory in the 'come-arrive' *lai* 'come' is profiled but the rest of the trajectory is nonsalient. Therefore, the endpoint of the motion event has to be entailed. This can be seen by the contradiction of the second clause in (21). According to him, the nonsalience in the rest of the trajectory especially applies to the initial stage of the trajectory. As a consequence, an overt source phrase is not preferred:

(22) a. na-ge   ren cong Shanghai lai-le.
          that-CL man from Shanghai come-Perf
          'That man has come from Shanghai.'
      b. ?na-feng xin   cong Shanghai lai-le.
          that-CL letter from Shanghai come-Perf
          '?/*That letter has come/arrived from Shanghai.' (Shen, 1996:512)

In (22a), the verb is the prototype *lai* 'come', where the whole path is profiled, including the initial stage of the trajectory. Thus, the sentence sounds natural with a source phrase. By contrast, in (22b), the verb is the 'come-arrive' *lai* 'come', where the initial stage of the trajectory is not profiled. Consequently, adding a source phrase makes the sentence sound marginal.

With respect to the destination landmark, when it is overtly realized, the final stage of the trajectory has to be salient and thus profiled. This makes the 'start-to-come' *lai* 'come', where the final stage of the trajectory is not profiled, incompatible with an overt destination landmark:

(23) ??ta yijing lai wo jia le, banlu you hui-qu-le.
     he already come my home Perf halfway again return-go-Perf
     '*He had come to my place already, but he went back halfway.'
     (Shen, 1996:514)

Shen (1996) claims that when the subject is the agent and the object is the theme, the theme object is usually inanimate and does not have the ability to move by itself. In such a case, there is energy transfer from the trajector (i.e., the agent) to the landmark (i.e., the theme), as in (24):

(24)   ta lai-le   yi-feng xin.
        he come-Perf one-CL letter
        'He sent me/us a letter.'   (Shen, 1996:521)

In (24), *lai* 'come' is the prototype *lai* 'come'; the trajectory and the destination landmark are profiled. Since the agent subject is in the departure point, the initial part of the path is the most salient in the trajectory; thus, Shen (1996) claims that *lai* 'come' in (24) can also be the 'start-to-come' *lai* 'come':

(25)   ta yijing lai   xin   le, xianzai dagai   zheng zai banlu-shang.
        he already come letter Perf now   perhaps right at halfway-on
        'He has sent me/us a letter already, and it is perhaps halfway now.'
        (Shen, 1996:522)

Shen's (1996) energy transfer is in fact causatives. That is, the subject is the person to cause the letter to come in (24) and (25). In terms of the 'start-to-come' *lai* 'come' reading, as we will see in Section 1.6, it stems from Mandarin Chinese being a nontelic language. The endpoint of the event is implied but not entailed. When it is implied, the meaning is prototype *lai* 'come', which is on a par with the English *come*. When it is not entailed, it is 'start-to-come' *lai* 'come', which differs from English *come*.

1.3   Metaphorical uses of the deictic verbs

As we have just seen, the basic meaning of the deictic verb is spatial motion. When the domain has shifted from spatial to temporal or mental, that is, the speaker 'conceptualize[s] similar content in different cognitive domains' (Shen,

1996:508), the meaning becomes abstract motion, which we usually regard as metaphorical uses of the deictic verbs.

Clark (1974) argues that the uses of *come* and *go* are extensions of EGO and NON-EGO. In the literal meaning, the deictic center is the speaker's location. Therefore, *come* means movement toward the speaker's location while *go* means movement away from the speaker's location toward somewhere else. In idiomatic uses, the deictic center can be normal states. The distinction between *come* and *go* then becomes entry into the normal state vs. departure from the normal state to the non-normal state destination.

Consider the following example:

(26)   a.   Duncan's temperature went up today.
          b.   Duncan's temperature came down today.
          c.   Duncan's temperature went down today.
          d.   Duncan's temperature came up today.   (Clark, 1974:318)

The normal body temperature is regarded as the normal state. In (26a), Duncan's temperature is higher than the normal body temperature; therefore, 'went up' is used. By contrast, in (26b), his temperature returns downward to 37ºC, the normal body temperature; thus, 'came down' is used. Similarly, in (26c), his temperature is lower than the normal body temperature, hence 'went down', whereas in (26d), his temperature returns upward to 37ºC, the normal body temperature, therefore 'came up'.[2]

According to Clark (1974:319), the normal states as deictic centers could be consciousness, calm, realism, wakefulness, non-use of drugs, normal functioning, normal complexion, etc.

Consider another example:

(27)   a.   John went into a coma yesterday.
          b. *John came into a coma yesterday.
          c.   John came out of the coma yesterday.
          d. *John went out of the coma yesterday.   (Clark, 1974:319)

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[2]Clark (1974) states in a footnote that some of the speakers that she has consulted accept the meanings that the normal state is not the deictic center in (26c). For example, the patient's temperature lowers from 40ºC to 38ºC. However, the same speakers treat the normal body temperature as the deictic center in (26d).

In (27), 'being in a coma' is the non-normal state, which is the destination of *go*. In the case of 'into a coma', the result state of the event is the non-normal state; therefore, *go* rather than *come* is used, as shown in (27a-b). In the case of 'out of the coma', the result state of the event is the normal state; consequently, *come* as opposed to *go* is used, as illustrated in (27c-d).

Clark (1974) distinguishes two types of usages related to the normal state. In the one type, the event can recur in time, as we have seen above. In the other type, the event cannot recur. In other words, once entered or exited the normal state, the state cannot be reverse. She states that '[t]he irreversible nature of the change of state in these instances may be regarded as the result of inevitable progression from one state to the next through time. In each case, the resultant state might be regarded as permanent' (Clark, 1974:323). This means that only one boundary is specified. When it is the entrance boundary that is specified, she terms this subtype 'entrance boundary states', as in (28a-b); when it is the exit boundary that is specified, she calls it 'exit boundary states', as in (28c-d).

(28)   a.   Martin came/*went of age in 1937.
            b.   Simon came/*went to realize that farming was not his forte.
            c.   The milk went/*came sour.
            d.   Josephine went/*came blind after the accident.
               (Clark, 1974:323,325-326)

In (28a), the deictic center is legal adulthood. A person will always be an adult once he becomes one since we can only become older but not younger. It is impossible to return to an age younger than an adult. Therefore, only the entrance boundary is specified. Similarly, in (28b), realization is regarded as the deictic center. Once a person realizes something, it is not possible to return to the state where he has not realized it yet. The two sentences in (28a-b) represent permanent entry into the normal state. In such cases, *come* but not *go* is used. By contrast, in (28c), freshness or edibility is the normal state. Once the milk becomes sour, it can never be reversible. Thus, only the exit boundary is specified. Similarly, in (28d), the normal state is the physical well-being. When one becomes blind, it is unlikely that he can see again. The sentences in (28c-d) represent permanent departure from the normal state. In these situations, *go* rather than *come* is used.

In addition to the normal state, the idiomatic uses of *come* and *go* can also refer to the speaker's point of view, which Clark (1974) terms 'evaluative viewpoints'. In

this use, *come* shows positive connotation while *go* indicates neutral or negative connotation:

(29)　　a.　The tomatoes are coming along nicely this year.

　　　　b.　The tomatoes are going along nicely this year.　　(Clark, 1974:327)

In (29), the difference comes from the speaker's perspective. The grower is more likely to utter (29a) than (29b), as *come* implies more involvement. The speaker who utters (29b) is more likely to be the neutral observer, who does not gain merits of tomato-growing.

Consider another example:

(30)　　a.　The plane came down near the lake.

　　　　b.　The plane went down near the lake.

　　　　c.　The plane came down safely near the lake.

　　　　d.　*The plane went down safely near the lake.　　(Clark, 1974:327-328)

In (30a), the outcome is positive, and in (30b), the outcome is negative. This can be seen by the modification of the adverb *safely*, as in (30c-d). While *come down* can be modified by *safely*, as in (30c), *go down* cannot, as in (30d).

The choice of *come* or *go* thus reflects the speaker's attitude toward the event. When *come* is used, the speaker is more involved with the event; when *go* is used, the speaker is neutral about the event. The destination of *come* is interpreted as 'some favorable viewpoint on the event or some generally acceptable attitude' (Clark, 1974:328), which makes the statement positive with *come* and non-positive with *go*.

In the case of the metaphorical uses of the deictic verbs in Mandarin Chinese, Huang (1978) also mentions about the normal state. When a state-changing verb co-occurs with a postverbal *lai* 'come', it indicates entry into the normal state; when it appears with a postverbal *qu* 'go', it signifies departure from the normal state. Therefore, the verb *xing* 'wake' is only compatible with *lai* 'come' but not *qu* 'go', and the verb *hun* 'faint' can only be used with *qu* 'go' but not *lai* 'come':

(31)　　a.　xing　guo-lai/*qu
　　　　　　wake pass-come/go
　　　　　　'wake up'

b. hun guo-*lai/qu
faint pass-come/go
'pass out, become unconscious' (Huang, 1978:60)

However, when the verb is not a state-changing verb but an activity verb, such as *zu* 'rent', we cannot define the state of renting as normal and the state of de-renting as not normal. According to Huang (1978), in such cases, *lai* 'come' and *qu* 'go' are not deictic, as the verb *zu* 'rent' does not show any movement. To him, *xia-lai* 'descend-come' indicates 'an entry into the speaker's realm, where realm has to do with the speaker's sphere of ethos and object of concern' while *xia-qu* 'descend-go' has the 'continuative' reading (Huang, 1978:61), as shown below:

(32) a. zu xia-lai
         rent descend-come
         'rent'

     b. zu xia-qu
         rent descend-go
         'continue renting' (Huang, 1978:61)

It seems to me that *lai* 'come' and *qu* 'go' in (32) are used in different domains. In (32a), the use of *lai* 'come' shows the speaker's point of view, as we saw in Clark (1974). In contrast to *lai* 'come', when *qu* 'go' is used, the speaker has neutral or negative feeling about the event, such as (33). In this example, *xia-qu* 'descend-down' does not mean continuation, unlike (32b).

(33) suiran   fangzu hen gui,   hai shi jueding gei ta zu   xia-qu.
      although rent   very expensive still be decide give it rent descend-go
      'Although the rent is expensive, I've still decided to rent it.'

By contrast, in (32b), it seems to me that movement takes place in the temporal domain, and the deictic center is the speech time *now*. The renting state extends from now to sometime in the future, hence the continuative reading.

In addition to the deictic verb following the main verb, another example where the deictic verb is considered as losing the spatial meaning in Mandarin Chinese is when the deictic verb takes a verbal complement, as in (34):

(34)   ta lai   mai liwu.
        he come buy gift
        'He came to buy a gift.'
        'He's gonna buy a/the gift.'   (Shen, 1996:527)

There are two meanings in (34): the subject arrives at a certain location to buy a gift or the subject is going to buy a gift. Shen (1996) states that a context to have the first interpretation may be answering a question like 'Why did he come here?' and a context to have the second interpretation may be to ask the hearer to take care of something else. He argues that in the first interpretation, *lai* 'come' refers to spatial movement while in the second interpretation, it expresses mental intention with immediate futurity. In the meaning 'He came to buy a gift', *lai* 'come' is followed by another process. The destination landmark of *lai* 'come' is the spatial domain for the second process. By contrast, in the meaning 'He's gonna buy a/the gift', the domain has shifted from spatial to mental. The position where the speaker mentally views the event has changed from the present time (i.e., the source landmark) to the future time (i.e., the destination landmark). That is, the speaker 'views the theme progressing toward the future process' in the destination landmark (Shen, 1996:532).

Shen (1996) argues that in the spatial domain with the theme subject, the reading is objective. The theme, the path, and the locations are all concrete. By contrast, in the mental domain, the reading is subjective. The theme, the motion, and the locations may be conceptualized. The speaker 'conceptually takes the subject's intended activity as a "destination", and subjectively views the process as the subject progressing along a path traced mentally by the speaker' (Shen, 1996:528). The source landmark is the theme's current status (i.e., the status before the subject starts doing the intended process), the trajector is the non-mover theme, which is the subject *ta* 'he' in (34), and the destination landmark is another process as a non-concrete location, which is the gift-buying event in (34). In addition, the speaker changes his vantage point from the source landmark to the destination landmark, that is, from the present time to the future time.

While I agree with him that in the mental domain, the event is regarded as a destination, it is not clear how the subject can move along the path conceptually. Therefore, rather than treating the subject's current status as the source landmark and the subject as the trajector undergoing movement, I argue that, in (34), the source landmark is the time of utterance and what moves along the trajectory is time.

1.4 Deictic verbs in Mandarin Chinese

Tang (1979) distinguishes eight uses of the deictic verbs in Mandarin Chinese, including deictic, transitive, causative, auxiliary, non-deictic, complement, metaphorical, and temporal. According to him, the deictic verb is originally an intransitive verb, as in (35). The source and the goal are introduced by the prepositions *cong* 'from' and *dao* 'to' respectively. However, later the deictic verb is able to be used like a transitive verb, with the goal being the object, as in (36). When the deictic verb is causative, Tang states that the DP follows the deictic verb is the object syntactically but the subject semantically, as in (37).[3]

(35)   Ahua cong jiali   dao zheli lai.   (deictic)
         Ahua from home to   here come
         'Ahua came here from home.'

(36)   Ahua lai   taibei le.   (transitive)
         Ahua come Taipei Prt
         'Ahua has come to Taipei.'

(37)   lai   yi-ping pijiu.   (causative)
         come one-CL beer
         'Give me a bottle of beer.'

When the deictic verb is used with another verb, Tang (1979) claims that it functions as an auxiliary and can appear before a verb phrase, after a verb phrase, or even in both positions simultaneously, as shown in (38). We will examine the positions of these deictic verbs in Chapters 2 and 3.

(38)   a.   Ahua lai   tanwang ni   le.   (auxiliary)
            Ahua come visit   you Prt

       b.   Ahua tanwang ni   lai   le.
            Ahua visit   you come Prt

       c.   Ahua lai   tanwang ni   lai   le.
            Ahua come visit   you come Prt
            'Ahua has come to visit you.'

The four uses of the deictic verbs mentioned above all involve movement in space. In addition to spatial movement, the deictic verb can also be used not in association with physical movement toward the speaker or the hearer. In this kind of

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[3]It seems to me that in (37), there is a null subject, and this subject refers to the hearer. Therefore, it is more appropriate to treat beer as the object both syntactically and semantically.

use, the deictic verb cannot be directly translated in English, and Tang (1979) terms it non-deictic:

(39) a. ni   bu xing de-hua, wo lai.   (non-deictic)
          you not work if   I   come
          'If you can't do it, I will.'

      b. ni   lai   zuo cai,   wo lai   xi   wan.
          you come do vegetable I   come wash dish
          'You cook, and I do the dishes.'

      c. Zhangsan shao shui   lai   xi   zao.
          Zhangsan boil water come wash bath
          'Zhangsan boiled water in order to take a bath.'

In (39a), *lai* 'come' replaces an action verb; it is similar to *zuo* 'do', like the dummy *do* in English. In (39b), the non-deictic *lai* 'come' precedes another verb, functioning as an auxiliary indicating suggestion or persuasion. In (39c), *lai* 'come' connects two related verb phrases, *shao shui* 'boil water' and *xi zao* 'take a bath'.

When the deictic verb encodes the deictic meaning and appears postverbally, Tang (1979) names this use complement and claims that it can appear in three positions:

(40) a. na-zhi   xiao gou pao lai   le.   (complement)
          that-CL little dog run come Prt
          'That puppy has run toward us.'

      b. Ahua xia   lai   le   ma?
          Ahua descend come Prt Q
          'Has Ahua come down?'

      c. na-zhi   mao turan   tiao xia   lai.
          that-CL cat   suddenly jump descend come
          'That cat suddenly jumped down.'

As we will see in Chapters 4 and 5, the complement use of the deictic verb is one of the verbs in directional serial verbs, which include a main verb, a directional verb, and a deictic verb. The deictic verb can directly follow a main verb, as in (40a); it can follow the directional verb which does not follow another verb as a main verb, as in (40b); and it can follow the directional verb which follows a main verb, as in (40c). In the first case (40a), the deictic verb indicates that the action of the subject is related to the speaker's location. In (40a), the puppy ran and the direction it ran to was toward the speaker. In the second case (40b),

the directional verb shows the direction the subject moves to, and the deictic verb signifies the direction related to the speaker. In (40b), *xia* 'descend' shows that Ahua moves from a higher position to a lower position, say, from the second floor to the first floor, and *lai* 'come' shows that Ahua moves toward the speaker. Then, the speaker was in the first floor rather than the second floor. In the third case (40c), the meanings of the directional verb and the deictic verb are the same as those in (40b). In (40c), *xia* 'descend' shows that the cat moves from a higher position to a lower position, for example, from a tree down to the ground, and *lai* 'come' shows that the cat moves toward the speaker. Then, the speaker was standing on the ground rather than sitting in the tree. Consider an opposite situation when the cat was in a lower position and jumped up to a higher position. For instance, the cat jumped up to the sofa from the floor. If the speaker sat on the sofa, he would say *tiao shang lai* 'jump up (toward me)'. Compared the two situations, *shang* 'up' and *xia* 'down' simply refer to the direction where the cat moves regardless of the location of the speaker. It is the complement *lai* 'come' that shows where the speaker is.

In addition to movement in space, Tang (1979) states that uses of the deictic verbs can extend to the temporal, the mental, and the distant sense, which he categorizes as metaphorical:

(41)   a.   Xiaoming zhongyu xing guo lai   le.   (metaphorical)
                Xiaoming finally   wake pass come Prt
                'Xiaoming has finally woken up.'

        b.   gankuai xie   xia   lai.
                quickly write descend come
                'Quickly write it down.'

        c.   na-jian   chenshan cong yuan chu   kan lai   xiang zhi mao.
                that-CL shirt   from far   place look come like   CL cat
                'That shirt is like a cat when looking from a far distance.'

In the temporal sense, *lai* 'come' means from the past to now while *qu* 'go' means from now to the future. In (41a), Xiaoming might have been sleeping for a long time or been unconscious and has finally woken up. Since time moves from the past to now, *lai* 'come' is used. This metaphorical use is what Huang (1978) treats as related to the normal state. In the mental sense, *lai* 'come' indicates the occurrence of the event, such as generating, starting, increasing, etc. (however, in some situations, it can have the opposite concept, like hiding); *qu* 'go' signifies a state fading away. In (41b), when we write down something, the words appear on the paper, which is a concept of generation. Consequently, *lai* 'come' is used.

In the distant sense, the deictic verb concerns the location of both the subject and the speaker. When the conceptual movement is from far to near, *lai* 'come' is used; when it is from near to far, *qu* 'go' is used. In (41c), *kan lai* 'look come' does not mean the subject keeps looking while moving toward the speaker, as the subject *na-jian chenshan* 'that shirt' does not have the ability to look. Thus, *lai* 'come' here differs from complement *lai* 'come' since the verb *kan* 'look' is not an event verb. What (41c) means is that the speaker looks from a far distance, the location of the shirt, to the near distance, the location of the speaker, and thinks that the shirt looks like a cat.

The last use of the deictic verb in Tang's (1979) classifications is temporal. In this use, *lai* 'come' shows a time in the future while *qu* 'go' shows a time in the past. In addition, unlike other uses, which are related to verb, the temporal use only occurs within noun phrases, as in (42):

(42)   a.   jiang lai   (temporal)
            will come
            'future'

        b.   lai   shi
            come life
            'next life'

In (42a), both *jiang* 'will' and *lai* 'come' refer to a time in the future; when they combine together as a word, it means 'future'. In (42b), *lai* 'come' also refers to a time in the future; when it precedes a noun like *shi* 'life', its meaning is similar to *next* in English, such as *next month*.

We have seen that the deictic verb in Mandarin Chinese has many uses. Apart from the temporal use, which appears within a noun phrase, others are related to verbs. Some function as main verbs, some appear preverbally, and some postverbally. In this thesis, I only focus on the cases where the deictic verb appears preverbally and postverbally, which are auxiliary and complement uses in Tang's (1979) terminology. However, auxiliary and complement uses can extend to non-deictic and metaphorical uses to some extent. Therefore, some of these concepts will also be discussed.

1.5 Chomsky's (2000, 2001, 2008) phase theory

Chomsky (2000) proposes the notion of phases in order to solve the problem arising from the Merge over Move principle. According to this principle, when everything is equal, Merge is preferred to Move. For instance, consider the following example:

(43)   a.   There is likely to be a proof discovered.
       b.   *There is likely a proof to be discovered.   (Chomsky, 2000:104)

When the derivation is at the stage where the EPP feature on the embedded T needs to be satisfied, as shown in (44), there are two options: either Merge the expletive *there* or Move the DP *a proof.* In the former, the sentence will become (43a); in the latter, the sentence will become (43b). The contrast between (43a) and (43b) suggests that Merge is preferred to Move.

(44)   [T [be a proof discovered]]   (Chomsky, 2000:104)

However, the following example seems to violate the Merge over Move principle:

(45)   a.   There is a strong likelihood that many parrots will be at the clay
            lick right now.
       b.   *There$_i$ is a strong likelihood that t$_i$ will be many parrots at the clay
            lick right now.   (Citko, 2014:27-28)

To satisfy the EPP feature on the embedded T during the derivation, as shown in (46), we can either Merge the expletive *there* or Move the DP *many parrots.* If *there* is merged, the ungrammatical (45b) is derived; if *many parrots* is moved, the grammatical (45a) is derived. The contrast in (45) seems to show that Move is preferred to Merge, which is against the Merge over Move principle.

(46)   [T [will be many parrots at the clay right now]]

To solve this problem, Chomsky (2000) stipulates that only part of lexical array (LA) is accessible at each stage of the derivation, and the Merge over Move principle applies to each stage. He states that:

> Suppose we select LA as before... Suppose further that at each stage

of the derivation a subset LA_i is extracted, placed in active memory (the "workspace"), and submitted to the procedure L. When LA_i is exhausted, the computation may proceed if possible; or it may return to LA and extract LA_j, proceeding as before. The process continues until it terminates. Operative complexity in some natural sense is reduced, with each stage of the derivation accessing only part of LA. If the subarray in active memory does not contain Expl, then Move can take place in the corresponding stage; if it does, Merge of Expl preempts Move. (Chomsky, 2000:106)

The stage for deriving the subarray is the concept of phase. According to him, CP and transitive/unergative vP are phases while TP and unaccusative/passive vP are not. In (45), the expletive *there* and the DP *many parrots* are in different subarrays. In other words, *there* is not available when the EPP feature on the embedded T needs to be satisfied. As a consequence, *many parrots* moves to the Sepc,TP.

In order to conform to the locality conditions, where movement takes place successively, Chomsky (2000) proposes a 'phase-impenetrability condition' (PIC):

(47)   *Phase-Impenetrability Condition*
        In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations. (Chomsky, 2000:108)

The domain of the phase head is its complement and its edge is its specifier (or specifiers if there is more than one). According to PIC, once HP is completed, only the phase head and its edge are accessible to the probes higher than HP. Its complement is spelled-out and is thus not accessible. The only way for elements within the complement to be able to move out of the Spell-Out domain is by moving to the edge. Chomsky (2000) postulates as follows:

(48)   The head H of phase Ph may be assigned an EPP-feature.
        (Chomsky, 2000:109)

He claims that 'once Ph is completed, exhausting the lexical subarray from which it is derived, [(48)] may optionally apply, assigning an EPP-feature to H' (Chomsky, 2000:109).

In Chomsky (2001), he restates the PIC. The complement of a phase head is

not spelled-out once HP is completed; rather, it remains accessible until the next phase head is merged. Citko (2014) refers to the old PIC as strong PIC and the new one as weak PIC. The two versions of PICs are stated as below (assuming Z and H are phase heads):

(49)   a. $[_{ZP}$ Z ... $[_{HP}$ α [H YP]]]
       b.   The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations.   (strong PIC)
       c.   The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.   (weak PIC)
            (Chomsky, 2001:13-14)

According to Citko (2014), the two versions of PICs have different predictions in terms of whether T and the object DP can Agree or not. In the strong PIC, once vP is completed, VP is spelled-out. When T is merged, VP is already inaccessible, hence disallowing agreement between T and the object DP. By contrast, in the weak PIC, VP becomes inaccessible only when C is merged. In other words, when T is merged, VP is still accessible. As a consequence, the agreement between T and the object DP is possible. Examining languages with quirky nominative objects, under the assumption that the object gets nominative case by agreeing with a finite T, Citko states that this shows that the weak PIC is preferred.

In Chomsky (2008), he argues that 'along with Transfer, all other operations will also apply at the phase level, as determined by the label/probe. That implies that IM [(internal merge)] should be driven only by phase heads' (Chomsky, 2008:143). However, if internal merge (i.e., movement) is driven by phase heads, it seems odd why T is not a phase head, given that on the surface T is the position with ϕ-features. This leads Chomsky to propose that Agree and Tense features on T are in fact inherited from C, and A- and A'-movement are both triggered by C.[4]

Consider the following example, the base structure of which can be represented as (51) (Chomsky, 2008:147):

(50)   a.   It was the CAR (not the TRUCK) of which [the (driver, picture) was found]

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[4]However, if the feature on T is inherited from C, once C is merged, the object should be inaccessible and T should not be able to assign the nominative case to the object in quirky nominative objects. Chomsky states that '[it] may be, then, that PIC holds only for the mappings to the interface, with the effects for narrow syntax automatic' (Chomsky, 2008:143).

b. Of which car was [the (driver, picture) awarded a prize]

(51) C [T [v [V [the (driver, picture) of which]]]]

In (50), the sentences are passive, so v is not a phase head. According to Chomsky, the probe for *wh*-word in C raises *of-which* to the Spec,CP whereas the Agree features on C, inherited by T, raises the DP *the (driver, picture) of which* to the Spec,TP. The two operations take place in parallel.

Consider another example:

(52) a. C [T [who [$v*$ [see John]]]]
      b. Who$_i$ [C [who$_j$ [T [who$_k$ $v*$ [see John]]]]]
      c. Who saw John   (Chomsky, 2008:149)

In the C phase, the edge feature raises the *wh*-word (e.g., who$_k$ in (52b)) to the Spec,CP while the Agree feature, inherited by T, raises the DP (e.g., who$_k$ in (52b)) to the Spec,TP. Chomsky argues that in (52b), '[t]here is a direct relation between who$_i$ and who$_k$, and between who$_j$ and who$_k$, but none between who$_i$ and who$_j$' (Chomsky, 2008:149). In other words, in (50), it is not the case that *the (driver, picture) of which* first moves from its base position to the Spec,TP and then *of-which* is extracted from the Spec,TP to the Spec,CP; in (52), *who* does not first move from the Spec,vP to the Spec,TP and then to the Spec,CP. Rather, in both cases, two different probes target the goals to raise in parallel. In (50), the goals are *of-which* and *the (driver, picture) of which* respectively, and in (52), the goals are both *who*. Chomsky argues that in (52), there are two A-chains, (who$_j$, who$_k$) and (who$_k$), both of which are invisible. In terms of (50), a question arises: why is *of-which* not pronounced both in the Spec,CP and within the DP *the (driver, picture) of which* but only pronounced in the Spec,CP? Chomsky claims that 'the edge and Agree features of the probe can apply in either order, or simultaneously, with only certain choices converging' (Chomsky, 2008:151).

Consider the following example:

(53) a. It is the CAR (not the TRUCK) of which [the (driver, picture) is likely [t to [t cause a scandal]]]
      b. Of which car is [the (driver, picture) likely [t to [t cause a scandal]]] (Chomsky, 2008:153)

In (53), Chomsky assumes that 'the Agree feature of C-T raises EA step by step to its final position, and along the way, the edge feature of C extracts the PP complement and raises it to Spec-C, with no deep search required because no phase boundaries are crossed' (Chomsky, 2008:153). We may thus assume that in (50), the edge feature probes the goal prior to the Agree feature. After the edge feature raises *of-which* from its base position to the Spec,CP, the Agree feature raises the remnant DP to the Spec,TP. As a consequence, in (50), *of-which* is only pronounced in the Spec,CP but not within the DP *the (driver, picture) of which.* In the case of VP-preposing, such as (54), we may assume that the Agree feature on T, inherited from C, first raises the subject to the Spec,TP and then the edge feature raises the remnant *v*P to the Spec,CP.

(54)   Put a book on your desk, this girl will.

So far in the examples to address the notion that the nonphase head inherits features from the phase head, we only see T, which is between two phase heads, C and *v*. However, there are more projections between the two phase heads, such as AspP. In these cases, how do feature inheritance work? When Aboh and Dyakonova (2009) propose the analysis for predicate doubling in Gungbe, as we will see in Chapter 2, they state in a footnote that '[u]nder the split-C and the split-I hypotheses... T and Asp, arguably, belong to the same domain such that the tense-aspect features inherited from C can be transmitted to T and Asp' (Aboh and Dyakonova, 2009:1054). Apart from Aboh and Dyakonova, Branigan (2016) investigates how phase theory and cartographic structures work together and proposes that the features of the phase head are inherited by multiple nonphase heads. Take (55) as an example:

(55)   Prudence insisted that never before had she *t* enjoyed karaoke.
         (Branigan, 2016:2)

In (55), under Rizzi's (1997) cartographic analysis, *that* is in Force, *never before* is in the Spec,FocP, and *had* is in Foc. Branigan (2016) assumes that the Force head is the phase head C and claims that if the nonphase head to inherit features has to be the complement of the phase head, it should be impossible for T to inherit features from Force due to the intervening Foc. Since T can still inherit features from the phase head, he argues that 'Feature Inheritance can apply multiple times, transferring feature complexes to successively more remote phrasal heads' (Branigan, 2016:5), which can be illustrated as below:

(56)   multiple FI
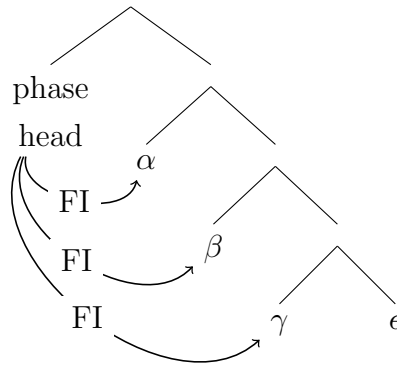
<div align="right">(Branigan, 2016:5)</div>

Following Aboh and Dyakonova (2009) and Branigan (2016), I assume that the features on the phase head can transfer to the relevant nonphase heads and that the feature on Asp is inherited from C, which raises the verb to Asp.

1.6   Travis's (2010) inner aspect

Travis (2010) proposes an inner aspect phrase between the VP shells in the sense of Larson (1988). This inner aspect calculates situation aspect, that is, *Aktionsart* or aspectual verb classes, such as state, activity, accomplishment, and achievement. By contrast, viewpoint aspect, like perfective and imperfective, is calculated by the outer aspect. While the outer aspect is a functional category in the functional domain, Travis argues that the inner aspect is a functional category in the lexical domain. The structure of a sentence can be represented as below (Travis, 2010:5):

(57)

```
                CP
              /    \
           Spec     C'
                   /  \
                  C    TP
                     /    \
                  Spec     T'
                         /    \
                        T     OAspP
                            /      \
                         Spec      OAsp'
                                 /      \
                              OAsp       EP
                                       /    \
                                    Spec     E'
                                           /    \
                                          E     V₁P
                                              /     \
                                           Spec      V₁'
                                                   /     \
                                                  V₁     AspP
                                                       /     \
                                                    Spec      Asp'
                                                            /      \
                                                          Asp      V₂P
                                                                 /     \
                                                              Spec      V₂'
                                                                       /   \
                                                                      V₂    XP
```
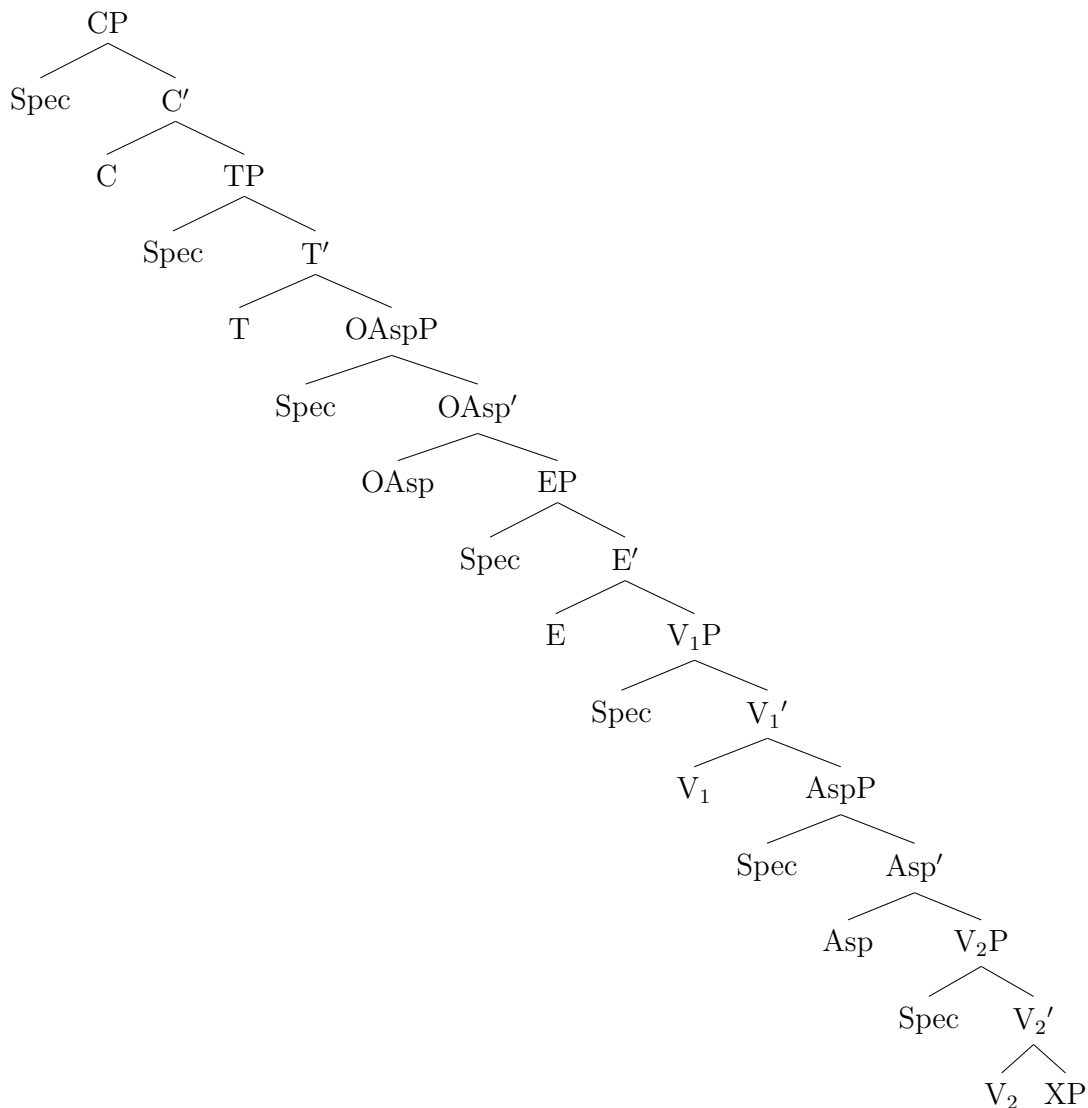
In (57), OAsp is the outer aspect and Asp is the inner aspect. The outer aspect is between TP and V_1P, which is the position where we normally assume the aspect would be. NegP is then above OAspP and below TP. The inner aspect is between the VP shells, V_1P and V_2P.

In addition to the aspects, there is another functional category, E(vent), between OAspP and V_1P. According to Travis (2010), this category is a boundary between L-syntax and S-syntax. She states that it has been argued that there exists a functional category between T and V ever since Pollock (1989). This functional category is Agr in the split Infl in Pollock for short verb movement of the infinitive in French and is Agr_O in Chomsky (1991) for object agreement. Travis claims that since she has proposed an inner aspect to agree with the object, in her system, this category should have a different function. She proposes that, in the verbal domain, a marker in this head is tense-related, distinguishing irrealis from

realis.

For example, in French, infinitival verbs do not undergo V-to-T movement as finite verbs do; rather, they can optionally move to this position. This can be seen from the relative position of the infinitival verb with negation and adverb (adapted from Pollock, 1989:374,377,378):

(58) a. Ne pas sembler heureux est une condition pour écrire des
          Ne not seem   happy   is a   condition for   write of the
          romans.
          novels
          '*Ne* not to seem happy is a prerequisite for writing novels.'
      b. *Ne sembler pas heureux est une condition pour écrire des
          Ne seem   not happy   is a   condition for   write of the
          romans.
          novels
          '*Ne* to seem not happy...'

(59) a. Complètement perdre la   tête pour les belles étudiantes, c'est
          completely   lose   the head for the pretty students   that's
          dangereux!
          dangerous
          'To completely lose one's head over pretty students is dangerous.'
      b. Perdre complètement la   tête pour les belles étudiantes, c'est
          lose   completely   the head for the pretty students   that's
          dangereux!
          dangerous
          'To lose completely one's head...'

Examples (58) and (59) show that the infinitival verb *sembler* 'seem' cannot move across negation *pas* but it can move to a position that is higher than the adverb *complètement* 'completely'. In other words, the infinitival verbs in French can optionally move to a position between negation and adverb. This position is what Travis (2010) labels E.[5]

Travis (2010) states that E is also observed in the future tense and the conditional in French (adapted from Travis, 2010:77-78):

---

[5]In contrast to French, Pollock (1989) argues that infinitival verbs in English do not move. However, Travis interprets the data in a different way. Rather than arguing for the lack of movement for infinitival verbs in English, she proposes that the infinitival *to* occupies the E head, which is only one of the positions for the infinitival *to* to appear.

(60)

	V		E		T/agreement	
FUTURE:	parl	+	er	+	a	's/he will speak'
CONDITIONAL:	parl	+	er	+	ait	's/he would speak'

infinitive	**parler**	**partir**	**prendre**
FUTURE	parler-ons	partir-ons	prendr-ons
CONDITIONAL	parler-ions	partir-ions	prendre-ions

In (60), both the future and the conditional include the infinitival marker *-er*, *-ir*, or *-r*. Travis (2010) argues that these markers occupy the E head, making the verb irrealis. Apart from tense-related characteristics, E can be reference-related in other languages, like Malagasy. Since it is beyond the scope of this thesis, I will not discuss it here.

With respect to V_1 and V_2, Travis (2010) argues that they are both lexical categories. V_1 may introduce an external argument. When it does, its meaning is similar to CAUSE. V_2 introduces the theme argument, which is merged in the Spec,V_2P, and the endpoint of the event, XP, which is merged in the complement position. Travis assumes that V_1 is a lexical category, which differs from Chomsky (1995). She states in a footnote that:

> Chomsky (1995:232) has theory-internal reasons for supposing that v (V_1 for me) is functional. In the early Minimalist Program, strong features can only appear on nonsubstantive (functional) heads. In doing away with Agr$_O$, Chomsky assumes that v is responsible for checking the relevant D feature of the object and therefore is not a substantive (lexical) category. As I assume that Asp checks this feature (is responsible for accusative case), I am not forced to assume that v/V_1 has uninterpretable features that need to be checked. (Travis, 2010:11)

However, since I am using Minimalist Program to analyze in this thesis, including the concept of phases, v, one of the phase heads, has to be functional. Thus, following Chomsky (1995), I treat v/V_1 as a functional head.

According to Travis (2010), V_1 encodes the process or duration, which distinguishes state and achievement from activity and accomplishment. She states that intransitive state may lack V_1, thus no process; alternatively, intransitive state may have V_1 meaning BE. Considering morphology in languages like Tagalog and Malagasy, Travis adopts the latter. On the other hand, intransitive achievement has V_1, but it simply shows that the event is dynamic. In terms

of transitive state and achievement, following Noonan (1993), she proposes that there is V_1, yet it is stative (HAVE).

With respect to Asp, Travis (2010) stipulates that it encodes the [+/-telic] feature, which distinguishes achievement and accomplishment from state and activity. The Asp head may have a meaning similar to BECOME/BE, depending on its feature. The four aspectual verb classes can be represented as follows (Travis, 2010:119-120):[6]
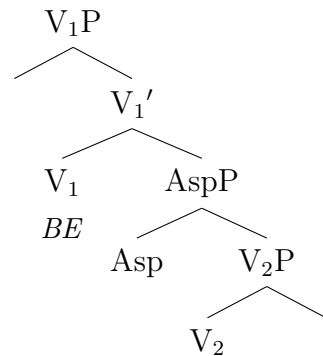
(61)   a. STATE   b. TRANSITIVE STATE
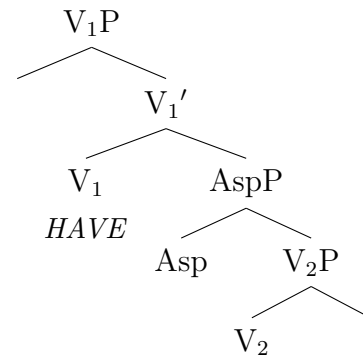
(62)   a. (UNACCUSATIVE) ACHIEVEMENT   b. TRANSITIVE ACHIEVEMENT
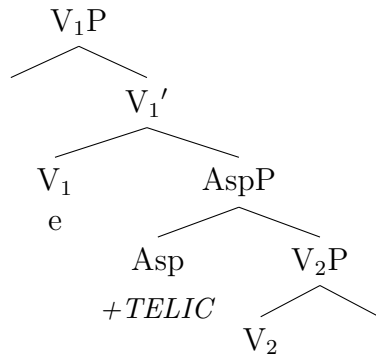
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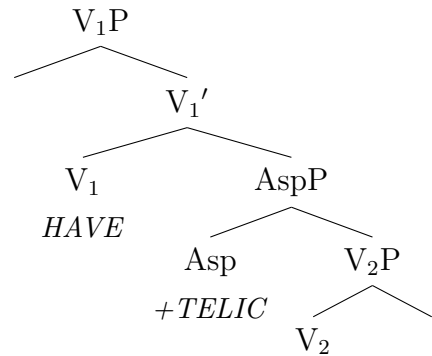
[6]The structure for state (61a) in Travis (2010:119) contains only V_2P. Since later she argues that all four classes have two VPs, I modify the structure in (61a).

(63) a. ACCOMPLISHMENT   b. ACTIVITY

```
        V₁P                                    V₁P
       /   \                                  /   \
          V₁′                                    V₁′
         /    \                                 /    \
       V₁      AspP                           V₁      AspP
     CAUSE, e  /   \                        CAUSE, e  /   \
            Asp    V₂P                             Asp    V₂P
          +TELIC   /  \                                    /  \
                  V₂                                      V₂
```
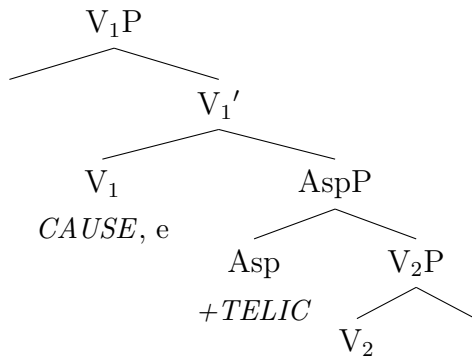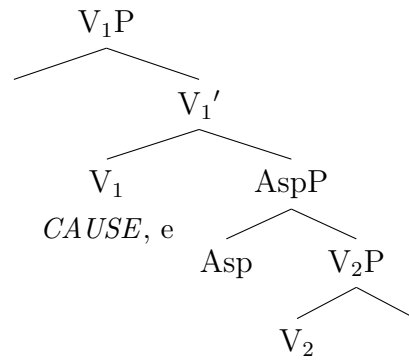
The difference between accomplishment and activity in (63) is that accomplishment has a [+telic] feature on the Asp head while activity does not. The telicity of an event can be affected by the object, which Verkuyl (1972) labels as [+/-SQA] (Specified Quantity of A) (Travis, 2010:109).[7] When the object is [+SQA], the event is accomplishment; when it is [-SQA], the event is activity:

(64)   a. Mary built a cart ($\sqrt{}$in 3 hours/*for 3 hours).
       b. Mary built carts (*in 3 hours/$\sqrt{}$for 3 hours).   (Travis, 2010:121)

In (64a), the object is [+SQA], which makes the event telic; therefore, it can only be modified by the frame adverbial 'in 3 hours'. By contrast, in (64b), the object is [-SQA], which makes the event atelic; thus, it can only be modified by the duration adverbial 'for 3 hours'.

Travis (2010) claims that the merge position for the object is the Spec,V₂P. This position is not visible for computing telicity. As a consequence, the object that measures out the event must move to the Spec,AspP for computation, or perhaps have the AGREE relationship with Asp. If an object is not an event-measuring DP, it remains in the Spec,V₂P. She argues that the derived object in the Spec,AspP may affect the meaning (Travis, 2010:123):

(65)   Double-object constructions

       a. Mary taught French to the students (but they didn't learn it).
       b. Mary taught the students French (*but they didn't learn it).

---

[7]Note that Travis only uses [+/-SQA] to show that the object affects telicity. She does not encode [+/-SQA] as features in her structure.

(66)   Benefactive constructions

     a.   Mary baked a cake for the children/holidays.

     b.   Mary baked the children/*the holidays a cake.

(67)   *Spray/load* constructions

     a.   Mary loaded the cookies into the box (but the box wasn't full).

     b.   Mary loaded the box with cookies (*but the box wasn't full).

The event-measuring DP in the Spec,AspP concerns the endpoint of the event. In (65b), the event-measuring DP is *the students*: the event is finished when the students have acquired French. In (66b), *the children* is the event-measuring DP, but not *the holidays*: the event is finished when the children got the cake, but the holidays cannot receive a cake. In (67b), *the box* is the event-measuring DP: the event is finished when the box is full of cookies.

In many languages, such as Japanese and Mandarin Chinese, the endpoint of the event is implied but not entailed. For example, Japanese accomplishment behaves like either achievement or activity. This is seen when it interacts with *te-iru*, which has the result state reading with achievement but progressive reading with activity (Travis, 2010:124-125, taken from Uesaka, 1996:5-6,17):

(68) a. ki-ga   taore-te-i-ru.   (achievement)
         tree-NOM fall-*te-i*-PRES
         'Trees have fallen down (and they are on the ground now).'

      b. John-ga   asob-te-i-ru.   (activity)
         John-NOM play-*te-i*-PRES
         'John is playing.'

      c. John-ga   hon-o   yom-te-i-ru.   (accomplishment)
         John-NOM book-ACC read-*te-i*-PRES
         'John is reading the book/John has read the book.'

Travis (2010) proposes that the two readings in Japanese accomplishment are related to the [+/-telic] feature on the Asp head. Japanese accomplishment may have an optional endpoint. When the endpoint is present, the feature on the Asp head is [+telic], which makes accomplishment behave like achievement. When the endpoint is absent, the feature on the Asp head is [-telic], which makes accomplishment behave like activity.

Similarly, in Mandarin Chinese, the endpoint is implied but not entailed. Therefore, the endpoint can be canceled, as we saw in Shen's (1996) 'start-to-come' *lai*

'come'. In order to assure the endpoint, the resultative verb compound needs to be used (adapted from Tai, 1984:291, cited in Travis, 2010:128):

(69) a. Zhangsan sha-le Lisi liangci, Lisi dou mei si.
    Zhangsan kill-Perf Lisi twice Lisi all not die
    'Zhangsan killed Lisi twice but Lisi didn't die.'

   b. *Zhangsan sha-si-le Lisi liangci, Lisi dou mei si.
    Zhangsan kill-die-Perf Lisi twice Lisi all not die
    'Zhangsan killed Lisi twice but Lisi didn't die.'

There are more to say about the inner aspect and the endpoint. Specifically, the inner aspect can introduce an additional argument, and the endpoint can be encoded in three positions: V_1, Asp, and X. I will leave the details to Chapter 5.

1.7 Chapter summary

We have seen that a reference point is needed when talking about movement. When movement takes place in space, the reference point may be either an object, in the case of non-deictic movement, or the speaker or the hearer, in the case of deictic movement. When deixis extends to non-spatial domain, such as temporal or mental, the deictic center is no longer the speaker's physical location. Rather, the deictic center becomes an abstract location where the speaker views the moving process. The concept of the abstract motion will be important for my analysis in the following chapters.

In terms of Travis's (2010) proposal for the syntactic structure, she proposes an inner aspect between the VP-shells and distinguishes it from the outer aspect. The inner aspect concerns the situation aspect, which is *Aktionsart* or aspectual verb classes, whereas the outer aspect regards perfective or imperfective of the event. The inner aspect encodes telicity, and the object that measures out the event has to move to the specifier of the inner aspect head or perhaps have the AGREE relationship with this head. This inner aspect will play an important role for my analysis in Chapter 5.

This thesis is analyzed in the Minimalist Program framework, including phases. Following Chomsky (2008), Aboh and Dyakonova (2009), and Branigan (2016), I assume that movement is triggered by the features on the phase heads, the complement of the first phase head is inaccessible once the second phase head is merged (i.e, the weak PIC), and the features on the phase head can be inherited

by multiple nonphase heads.

The data and judgments of this thesis are based on Taiwan Mandarin. The thesis is organized as follows. Chapter 2 examines previous analyses on the deictic verb co-occuring with a verb phrase, which is Tang's (1979) auxiliary use of the deictic verbs. Chapter 3 investigates this construction and proposes analyses for the deictic verb when it appears before a verb phrase, after a verb phrase, and in both positions simultaneously. Chapter 4 examines previous analyses on directional serial verbs in Mandarin Chinese, which is Tang's complement use and to some extent metaphorical use, where the deictic verb appears postverbally. The behavior of the directional complements when used as main verbs is also investigated in this chapter. Chapter 5 proposes the syntactic configurations for directional serial verbs. Chapter 6 concludes the thesis.

Chapter 2

Deictic verbs with VP

2.1 Introduction

Deictic verbs, including *lai* 'come' and *qu* 'go', are verbs that take the speaker as the reference point.[1] While *lai* 'come' means moving toward the speaker, *qu* 'go' means moving away from the speaker. Deictic verbs are usually assumed to function as lexical verbs. When they are used this way, a locative argument is optional:

(1)   a.   Laowang lai   (taibei) le.
             Laowang come Taipei Prt
             'Laowang has come (to Taipei).'

        b.   Laowang qu (taibei) le.
             Laowang go Taipei Prt
             'Laowang has gone (to Taipei).'

In (1), the locative argument *taibei* 'Taipei' is the goal of the movement, that is, the endpoint. In (1a), the deictic verb *lai* 'come' indicates movement toward the speaker. Since not knowing the exact ending location does not affect understanding the sentence, the goal argument is optional. The optional *taibei* 'Taipei' simply signifies the endpoint of the movement, which is also the speaker's location. By contrast, in (1b), the speaker is at the beginning point of the movement as *qu* 'go' designates movement away from the speaker. Not knowing the endpoint of the movement does not affect understanding the sentence either. Thus,

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[1]As we saw in Chapter 1, the hearer may also be the reference point. For simplicity, in the rest of this thesis, when I refer to spatial movement of the deictic verbs, I only mention the speaker.

the goal argument is also optional. The optional *taibei* 'Taipei' only gives the information about the endpoint of the movement. In other words, in (1b), the endpoint is Taipei and the beginning point is the speaker's location.

In addition to a locative argument, we have seen that deictic verbs can co-occur with a verb phrase, either before or after it:

(2)   a.   Laowang lai   tanwang Ahua le.
           Laowang come visit   Ahua Prt

      b.   Laowang tanwang Ahua lai   le.
           Laowang visit   Ahua come Prt
           'Laowang has come to visit Ahua.'

In (2a), the deictic verb *lai* 'come' precedes the verb phrase *tanwang Ahua* 'visit Ahua'; in (2b), it follows the verb phrase. The two sentences are regarded to have the same meaning despite *lai* 'come' being in different positions. However, it is not always possible for the two word orders to be interchangeable without changing the meaning:

(3)   a.   Laowang lai   qi   jiaotache.
           Laowang come ride bicycle
           'Laowang came to ride a bicycle.'

      b.   Laowang qi   jiaotache lai.
           Laowang ride bicycle   come
           'Laowang came by bicycle.'

The deictic verb *lai* 'come' appears before and after the verb phrase in (3), the same as in (2). However, the meanings of the two sentences in (3) are distinct. In (3a), the verb phrase *qi jiaotache* 'ride a bicycle' is the purpose of Laowang's coming whereas in (3b), *qi jiaotache* 'ride a bicycle' is the means of Laowang's coming.

Lu (1985) divides the meanings of 'VP + *qu* "go"' into six uses, as shown in (4), and argues that only when the verb phrase denotes purpose, as in (4f), can the two word orders be interchanged.

(4)   a.   Laowang hui ji   dian lingshi qu.
           Laowang will send some snack   go
           'Laowang will send some snacks (to somewhere).'

b. Laowang ba qiu reng dao dong-li qu.
Laowang BA ball throw arrive hole-in go
'Laowang threw the ball into the hole.'

c. Laowang jiao Ahua qu.
Laowang ask Ahua go
'Laowang asked Ahua to go.'

d. Laowang zoulu qu.
Laowang walk go
'Laowang went on foot.'

e. Laowang xi-wan zao qu.
Laowang wash-finish shower go
'Laowang will go after taking a shower.'

f. Laowang zhao Ahua qu le.
Laowang find Ahua go Prt
'Laowang has gone to look for Ahua.'

In (4), the subject of the first verb is Laowang in all the sentences. The subject of *qu* 'go' may be either Laowang or the object of the first verb, depending on the uses. In (4a-c), the subject of *qu* 'go' is the object of the first verb. In (4a), what moves is *lingshi* 'snack' rather than Laowang. In (4b), the phrase *dong-li* 'in the hole' is the endpoint of the movement. In this sentence, it is the endpoint of the object *qiu* 'ball'. Thus, what moves is the ball.[2] In (4c), Ahua is the person to go. In (4d-f), by contrast, the subject of *qu* 'go' is Laowang. In (4d), the verb phrase *zoulu* 'walk' is the means of Laowang's going, the structure of which is the same as that in (3b). In (4e), there are two actions, taking a shower and going. The first action, taking a shower, must take place prior to the second one, going. In (4f), the verb phrase *zhao Ahua* 'look for Ahua' is the purpose of Laowang's going.

On the other hand, when the deictic verb precedes the verb phrase, Lu (1985) argues that the sentence only has the purpose reading. Taking (2a) as an example, visiting Ahua is the purpose of Laowang's coming. Laowang is the subject of both *lai* 'come' and the verb phrase *tanwang Ahua* 'visit Ahua'. Among the uses where Laowang is the subject of *qu* 'go', in (4d), *zoulu* 'walk' is the means of his coming; in (4e), *xi-wan zao* 'finish taking a shower' is an action prior to going; and in (4f), *zhao Ahua* 'look for Ahua' is the purpose of his going. According to Lu, 'VP + *qu* "go"' can change to '*qu* "go" + VP' only in the use of (4f), that is, when the verb phrase indicates the purpose.

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[2]Lu (1985) argues that when there is a goal argument in the sentence, it could be the endpoint of the movement of the subject, the object, or both of them, depending on the sentences. For simplicity, we will assume that the subject of *qu* 'go' is not the subject of the first verb in this use for the time being.

Apart from the purpose reading and the relative position with the verb phrase, the pre-VP and the post-VP deictic verb can co-occur, as we saw in Chapter 1:

(5) Laowang lai   tanwang Ahua lai   le.
     Laowang come visit   Ahua come Prt
     'Laowang has come to visit Ahua.'

The meaning in (5) is regarded to be the same as that in (2). In other words, for the meaning 'Laowang has come to visit Ahua', the deictic verb *lai* 'come' can appear in the pre-VP position, the post-VP position, or both positions simultaneously. In this chapter, I am going to examine previous analyses on the deictic verb in these positions.

The chapter is organized as follows. Section 2.2 reviews Zhou's (1988) permutation analysis, followed by Zhang's (2003) chain analysis in Section 2.3 and Hsu's (2009) parallel chains in Section 2.4. Section 2.5 examines Ke's (1991) main verb vs. clitic distinction for the deictic verbs in two different positions. Section 2.6 summarizes this chapter.

2.2 Zhou's (1988) *qu* permutation

Zhou (1988) examines *qu* 'go' in Tang's (1979) auxiliary use of the deictic verbs and treats the pre-VP *qu* 'go' and the post-VP *qu* 'go' to be the same verb with different copies. He argues that the interchangeability of the two word orders, which he terms '*qu* permutation', results from head movement of the deictic verb. According to him, the deictic verb in the post-VP position is base-generated. To account for cases where 'VP + *qu* "go"' cannot be replaced by '*qu* "go" + VP', as we saw in (4), he proposes that '*qu* raising is possible only if the preceding VP is a unitary predicate of an argument, which *qu* is also predicated to' (Zhou, 1988:188). In other words, *qu* permutation takes place only when both the verb phrase and the deictic verb have the same argument, which is the subject of the sentence. The generalization is as below:

(6) A post-VP *qu* can raise to a pre-VP position if it is **linked** in predication
     to the external argument of that VP.   (Zhou, 1988:188)
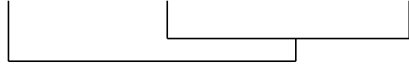
Take (4) as an example. Permutation is possible only in (4f). In (4a-c), the subject of *qu* 'go' is not the external argument of the verb phrase, thereby per-

mutation not being allowed. In (4d-e), the verb phrase in both cases is an adjunct. Zhou (1988) argues that the subject of the adjunct is a PRO, which is co-indexed with the subject in the matrix clause. Permutation is illicit due to *qu* 'go' and the verb phrase not linking to the same external argument despite the fact that they happen to have the same referent, as illustrated below (Zhou, 1988:188-189):

(7) a. wo [chi-le   fan] qu.
         I   eat-Perf meal go

     b. *wo qu$_i$ [chi-le   fan] e$_i$.
         I   go   eat-Perf meal
         'I will go after eating the meal.'

(8) a. [$_{IP}$ wo$_i$ [$_{IP}$ PRO$_i$ [$_{VP}$ chi-le   fan]] [$_{VP}$ [$_{V^0}$ qu]]]
         I   eat-Perf meal   go

     b. *qu*-raising:
         *wo [qu$_i$ chi-le fan t$_i$]

In (8a), the verb phrase *chi-le fan* 'have eaten the meal' is an adjunct clause. The subject of this clause is PRO, which is co-indexed with the matrix subject *wo* 'I'. As the lines show, in spite of the subjects of both clauses being the same referent, *wo* 'I', the subject of the verb *chi* 'eat' is PRO whereas that of the verb *qu* 'go' is *wo* 'I'. Since the two verbs do not have the same external argument, permutation is not allowed.

By contrast, when permutation is licit, the verb phrase and the deictic verb form a complex VP, which takes the subject as its argument. Both of them thus link to the same argument, as shown below (Zhou, 1988:186,189):

(9) a. wo [kan dianying] qu.
         I   see movie   go

     b. wo qu$_i$ [kan dianying] e$_i$.
         I   go see   movie
         'I am going to see the movie.'

(10) a. [$_{IP}$ wo [$_{VP}$ [$_{V'}$ kan dianying] [$_{V^0}$ qu]]]
          I   see movie   go

b. *qu*-raising:

[$_{IP}$ wo [[$_{V^0}$ qu$_i$] [$_{VP}$ [$_{V^0}$ kan] dianying] t$_i$]]

In (10a), the verb phrase *kan dianying* 'see the movie' and *qu* 'go' first form a complex VP, which then takes an external argument, *wo* 'I'. As the lines show, the external argument is the shared subject of both *qu* 'go' and the verb phrase *kan dianying* 'see the movie'. Therefore, permutation is allowed.

Zhou (1988), following Larson (1988), proposes the following configuration for the complex VP:

(11)
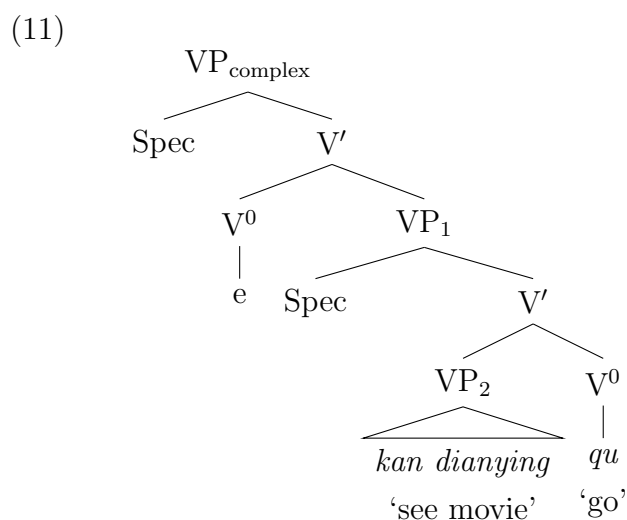
According to him, the optional head movement may be due to stylistic inversion. When *qu* 'go' in the lower V head raises to the empty head, which is e in the higher V head in (11), the word order '*qu* "go" + VP' is derived.

However, Ke (1991) argues against Zhou (1988) for the following reasons. First, as we have seen, the deictic verb in the pre-VP and the post-VP position can co-occur:

(12)   Laowang qu kan dianying qu le.
        Laowang go see movie   go Prt
        'Laowang has gone to see the movie.'

If *qu* permutation stems from head movement of the post-VP *qu* 'go' to the pre-VP *qu* 'go' position, it means that in (12), the deep *qu* 'go' and the surface *qu* 'go' both appear in the surface structure, which cannot be explained.[3] To Ke (1991),

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[3]This, however, does not seem to be a problem for Zhang (2003). Rather, to her, it is a piece of evidence that suggests the two deictic verbs form a chain. She argues that there are cases

since both deictic verbs can appear simultaneously, stipulating the permutation rule to connect their relationship is not reasonable.

Second, permutation is not always possible:

(13) a. *Laowang qu shang lou   le.
          Laowang go ascend stair Prt

      b. Laowang shang lou   qu le.
          Laowang ascend stair go Prt
          'Laowang has gone upstairs.'

According to Zhou (1988), *qu* permutation is stylistic inversion. If that is the case, it should not cause ungrammaticality, contrary to fact.[4]

What is more, *qu* permutation cannot account for the following contrast:

(14) a. Laowang qu kan-le   dianying.
          Laowang go see-Perf movie

      b. *Laowang kan-le   dianying qu.
          Laowang see-Perf movie   go
          'Laowang went to see the movie.'

If the post-VP *qu* 'go' is base-generated and movement to the pre-VP position is due to stylistic inversion, how is it possible that an ungrammatical sentence becomes grammatical after stylistic inversion, as illustrated in (14)? Ke (1991) states that instead of the post-VP deictic verb being base-generated, examples like (14) further suggest that the base position of the deictic verb should be in the pre-VP position, if the two word orders stem from head movement.

Finally, the pre-VP and the post-VP deictic verb differ in their tones. The pre-

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where both copies are pronounced in other languages, such as Hindi relative clauses (ia), child English (ib), and wh-movement in American Sign Language. The examples are from Zhang (2003:192), taken from Mahajan (2000:208) and Radford (1997:265) respectively.

(i) a. [jo aːdmiː siːtaː-ko pasand hɛ]   mujhe vo   aːdmiː accʰaː nahĩː
         REL man Sita-DAT like   be-PRES I-DAT DEM man nice   not
         lagtaː
         seem-IMP
         'I do not like the man who Sita likes.'
     b. Is the clock is working?

We will see more arguments for the movement approach by Zhang (2003) in the following section.

[4]However, to Zhang (2003), (13) suggests that the pre-VP deictic verb, which she proposes to be a functional head, retains some semantic features and interacts with the directional verbs.

51

VP *qu* 'go' has a falling tone while the post-VP *qu* 'go' has a neutral tone. Ke (1991) argues that content words in Mandarin Chinese have a stressed lexical tone; since the post-VP *qu* 'go' is a neutral tone, it should not be analyzed as a lexical verb.

2.3 Zhang's (2003) functional head in a chain

Similar to Zhou's (1988) analysis, Zhang (2003) also proposes that the interchangeability of the two word orders results from head movement. However, unlike Zhou, she argues that the deictic verb is base-generated in the pre-VP position; in addition, it is a functional head as opposed to a lexical verb. One of the arguments for it being a functional head is that an aspectual marker does not affix to the pre-VP deictic verb but rather to the verb following it:

(15)   a. *Laowang lai-le   kan dianying.
            Laowang come-Perf see movie

    b. Laowang lai   kan-le   dianying.
          Laowang come see-Perf movie
          'Laowang came to see the movie.'

Zhang (2003) stipulates that the merge position of the deictic verb is in a functional head higher than AspP and lower than NegP. The pre-VP deictic verb forms a chain via head movement with the post-VP deictic verb, which adjoins to the sentence-final particle *le* in T.[5] In other words, she assumes that the post-VP deictic verb is higher than the pre-VP deictic verb. When head movement takes place, whether the tail of the chain (i.e., the pre-VP deictic verb) is phonologically realized is optional. When it is pronounced, the sentence has both the pre-VP and the post-VP deictic verb; when it is not pronounced, the sentence only has the post-VP deictic verb. However, it is not always legitimate to raise the pre-VP deictic verb, as we saw in Ke's (1991) argument against Zhou (1988) in (14). When the aspectual marker affixes to the verb in the verb phrase, the post-VP deictic verb cannot co-occur:

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[5]Following Sybesma (1997), she assumes that the sentence-final particle *le* is base-generated in T and later raises to C.

(16) a. Laowang qu kan-le   dianying le.
          Laowang go see-Perf movie   Prt

     b. *Laowang (qu) kan-le   dianying qu le.
          Laowang go   see-Perf movie   go Prt
          'Laowang has gone to see the movie.'

Zhang (2003) states the constraint that the pre-VP deictic verb cannot raise to the position for the post-VP deictic verb as follows:

(17) *Lai/Qu* cannot raise to T if it c-commands an aspect suffix.
      (Zhang, 2003:198)

Apart from the constraint, raising is optional as movement of the pre-VP deictic verb is not obligatory in the absence of the aspectual marker. Therefore, when head movement does not happen, the sentence only has the pre-VP deictic verb (18a). When it does, the tail of the movement can be optionally phonologically realized. In the case of it not being pronounced, the sentence only has the post-VP deictic verb (18b); in the case of it being pronounced, the sentence has both the pre-VP and the post-VP deictic verb (18c).

(18) a. Laowang qu kan dianying le.   (no raising)
          Laowang go see movie   Prt

     b. Laowang kan dianying qu le.   (raising + tail unpronounced)
          Laowang see movie   go Prt

     c. Laowang qu kan dianying qu le.   (raising + tail pronounced)
          Laowang go see movie   go Prt
          'Laowang has gone to see the movie.'

According to her analysis, the tree diagram would look like (19):[6]

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[6]Zhang (2003), adopting Kayne (1994), assumes that head-final phrases are derived from the complement raising to the left of the head. However, another possibility is that C is head-final in Mandarin Chinese. She states that both approaches are compatible with her analysis. I adopt the latter here.

(19)
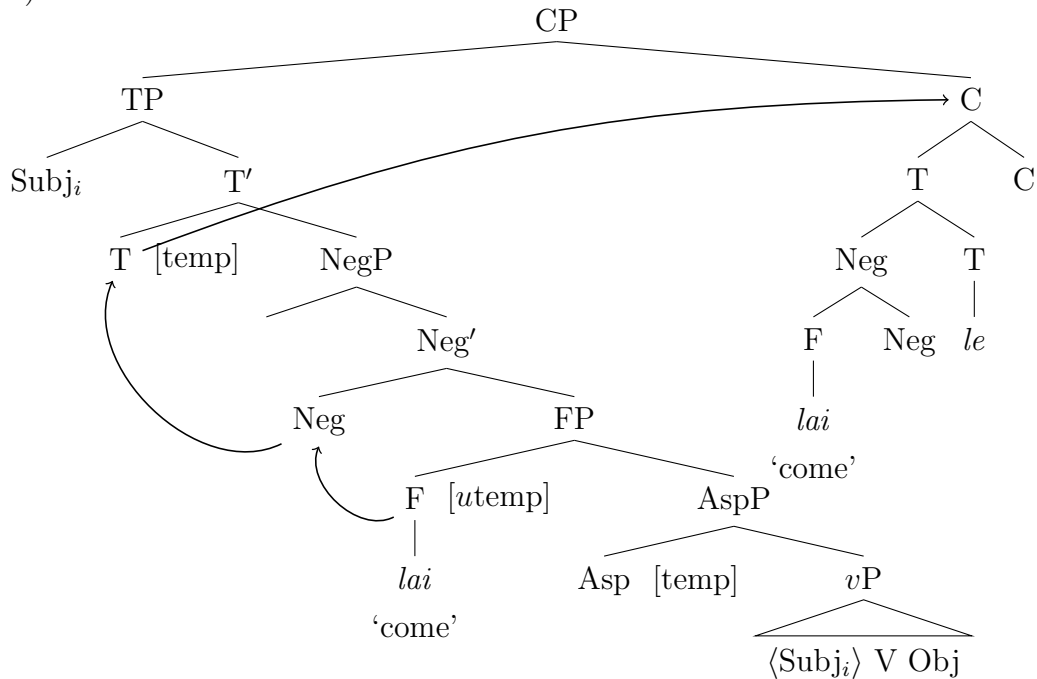
The pre-VP deictic verb is in a functional head higher than AspP and lower than NegP, which I label F in (19). Zhang (2003) assumes that there is a temporal formal feature [temp] on F that needs to be valued. Both T and Asp have the [temp] feature. When the aspectual marker appears in the sentence, as in (16a), the [temp] feature on Asp agrees with that on F. After the feature is valued, the pre-VP deictic verb is frozen in this position, disallowing further movement. When the aspectual marker does not occur in the sentence, as in (18), the feature on F is valued by the [temp] feature on T. Valuation can take place either by movement or in situ. In the former, we have the word order in (18b) or (18c); in the latter, we have the word order in (18a).[7]

As evidence to support the hypothesis that movement takes place, Zhang (2003) argues that sentences with a post-VP deictic verb are sensitive to the Coordinate Structure Constraint, according to which extraction out of coordination must equally affect all the constituents linked by the coordinator. In other words, extracting out of only one constituent results in ungrammaticality.

(20)   a. *What$_i$ did John kiss [Mary and t$_i$]?
        b. *Is$_i$ [John has come] and [he t$_i$ going to dance]?   (Zhang, 2003:190)

Zhang (2003) claims that (20) violates the Coordinate Structure Constraint. The

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[7]Zhang argues that negation element is in the Spec,NegP rather than in Neg; therefore, head movement is not blocked in negation.

sentences are ungrammatical in that extraction only takes place in the second conjunct. Using the constraint as a test, she argues that, under the situation that both conjuncts contain a post-VP deictic verb, as long as one conjunct has the aspectual marker on the verb, sentences with Across-the-Board extraction of the post-VP deictic verb are ungrammatical (Zhang, 2003:191):

(21)   a.   [Lao Li bujin   <u>lai</u>   kan ni], [hai <u>lai</u>   chang ge] <u>lai</u>   le.
               Lao Li not-only come see you also come sing   song come Prt
               'Lao Li comes not only to see you, but also to sing songs.'

        b.   *[Lao Li bujin   <u>lai</u>   kan ni], [ta hai chang-le na   shou ge]
               Lao Li not-only come see you he also sing-Perf that CL   song
               <u>lai</u>   le.
               come Prt

        c.   [Lao Li bujin   <u>lai</u>   kan ni] <u>lai</u>   le, [ta hai chang-le na
               Lao Li not-only come see you come Prt he also sing-Perf that
               shou ge].
               CL   song
               'Lao Li not only came to see you, but also sang that song.'

To Zhang (2003), the post-VP deictic verb is extracted from both conjuncts in (21a) and (21b). She claims that (21b) is ungrammatical due to the post-VP deictic verb being incompatible with the aspectual marker on the verb, which is *-le* with *chang* 'sing' in the second conjunct. By contrast, the post-VP deictic verb in (21c) is only associated with the first conjunct. Since the post-VP deictic verb does not appear in the second conjunct, the sentence is grammatical. The ungrammaticality of (21b) indicates that movement takes place.

However, her argument cannot account for the following example:

(22)   [Lisi bujin   chang-le na shou ge], [ta hai <u>lai</u> kan ni] <u>lai</u>   le.
        Lisi not-only sing-Perf that CL   song he also come see you come Prt
        'Lisi not only sang that song, but also came to see you.'

According to Zhang (2003), the post-VP *lai* 'come' in (22) should be extracted from both conjuncts; in addition, the sentence should be ungrammatical due to the existence of an aspectual marker in the first conjunct. However, the sentence is grammatical, contrary to her prediction. This shows that the post-VP *lai* 'come' in (22) is only related to the second conjunct; that is to say, extraction out of two conjuncts does not happen. Then, in (21b), the post-VP *lai* 'come' should only belong to the second conjunct as opposed to extracting from both conjuncts. As a consequence, (21) cannot be an argument to support the movement analysis.

The second argument that Zhang (2003) provides is that nothing can appear between the post-VP deictic verb and the sentence-final particle *le*, suggesting that the post-VP deictic verb adjoins to the sentence-final particle *le*, which is base-generated in T. Furthermore, she claims that the fact that the post-VP deictic verb has to precede the sentence-final particle *le* at the surface structure designates the occurrence of head movement:

(23) a. Lao Li [kan luxiang] lai/qu   le.
          Lao Li see   video   come/go Prt

      b. *Lao Li [kan luxiang] le   lai/qu.
          Lao Li see   video   Prt come/go
          'Lao Li has come/gone to watch a video.'   (Zhang, 2003:193)

However, while no element can be inserted in between in the constituent derived by head movement, it does not mean that when nothing can appear between the two elements, they must form a constituent by head movement. In addition, the fact that the post-VP deictic verb cannot occur to the right of the sentence-final particle *le* only shows that the position of the particle is higher than the post-VP deictic verb, given that C is head-final in Mandarin Chinese. Consequently, I argue that it is also not a piece of evidence to support the occurrence of head movement.

Another argument that Zhang (2003) gives is that when the pre-VP and the post-VP deictic verb co-occur, the sentence is sensitive to the Head Movement Constraint and the clause-bound condition:

(24) a. [$_{TP}$ wo qu [zhunbei youyong] qu].
              I   go prepare swim   go
          'I will go to prepare for swimming.' $\neq$ b

      b. wo zhunbei [$_{TP}$ qu youyong qu].
          I   prepare   go swim   go
          'I will prepare to go for swimming.' $\neq$ a

      c. wo zhunbei youyong qu.
          I   prepare swim   go
          'I will go to prepare for swimming.' $=$ a
          'I will prepare to go for swimming.' $=$ b

      d. *wo qu zhunbei qu youyong qu.
          I   go prepare go swim   go   (Zhang, 2003:194)
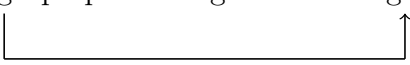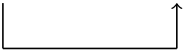
In (24a), both the pre-VP and the post-VP deictic verb are in the matrix clause. The pre-VP *qu* 'go' is the tail of the chain and the post-VP *qu* 'go' is the

head of it. The deictic verb scopes over the matrix verb *zhunbei* 'prepare', hence the interpretation 'go to prepare'. In (24b), the two deictic verbs form a chain in the embedded clause. The pre-VP *qu* 'go' scopes over the embedded verb *youyong* 'swim', therefore the interpretation 'go for swimming'. In (24c), when the pre-VP *qu* 'go', the tail of the chain, is not phonologically realized, the sentence is ambiguous between the meanings in (24a) and (24b), depending on which clause the post-VP *qu* 'go' belongs to. When the post-VP *qu* 'go' is in the matrix clause, the meaning of the sentence is 'go to prepare'; when it is in the embedded clause, the sentence means 'go for swimming'. In (24d), however, when the two pre-VP deictic verbs and the post-VP deictic verb appear simultaneously, the sentence becomes ungrammatical. Zhang (2003) claims that the ungrammaticality of (24d) can be accounted for by the Head Movement Constraint or the clause-bound condition, as illustrated below:

(25)   a. *wo qu zhunbei [$_{TP}$ qu youyong] qu.
            I   go prepare   go swim   go

    b. *wo qu zhunbei [$_{TP}$ qu youyong qu].
        I   go prepare   go swim   go
                                                        (Zhang, 2003:195)

In (25a), the post-VP *qu* 'go' is in the matrix clause. The embedded pre-VP *qu* 'go' first raises to the matrix pre-VP *qu* 'go' position, and then to the matrix post-VP *qu* 'go' position. The first movement violates the Head Movement Constraint as it moves across the matrix verb *zhunbei* 'prepare'. It also violates the clause-bound condition since it moves from the embedded clause to the matrix clause. In (25b), the post-VP *qu* 'go' is in the embedded clause. The embedded pre-VP *qu* 'go' first raises to the embedded post-VP *qu* 'go' position, and then to the matrix pre-VP *qu* 'go' position. The second movement violates both constraints for the same reason. To Zhang (2003), the ungrammaticality of (24d) indicates that head movement exists in this construction.

However, according to her own analysis, the pre-VP deictic verb is base-generated. In other words, the pre-VP deictic verb in the matrix clause should be base-generated rather than being derived by movement. Therefore, the Head Movement Constraint and the clause-bound condition are not violated in (24d), the representation of which should be as (26):

(26)   a. *wo qu zhunbei [$_{TP}$ qu youyong] qu.
       I go prepare   go swim   go

     b. *wo qu zhunbei [$_{TP}$ qu youyong qu].
       I go prepare   go swim   go

In addition, consider the following example:

(27)   *wo qu zhunbei [$_{TP}$ qu youyong].
    I go prepare   go swim
    'I will go to prepare to go for swimming.'

In the ungrammatical (27), the post-VP *qu* 'go' does not appear in the sentence and the pre-VP *qu* 'go' appears in both the matrix and the embedded clause. This shows that (24d) is ungrammatical because of neither the Head Movement Constraint nor the clause-bound condition but some independent reason. We will leave the reason for future research since our purpose here is only to examine the movement hypothesis, which, from the example, seems problematic.

2.4   Hsu's (2009) parallel chains

Like Zhang (2003), Hsu (2009) also proposes that the merge position of *lai* 'come' and *qu* 'go' is higher than AspP and lower than NegP, which he stipulates to be in F. Therefore, the F head in Hsu's analysis is the same as the one we saw in (19). He compares two approaches to accounting for sentences with the deictic verb appearing in different positions (i.e., the pre-VP, the post-VP, and both of them simultaneously). In the first approach, the pre-VP and the post-VP deictic verb form a chain, which is similar to Zhang's analysis. In this approach, as his points out, movement is random. That is, movement of the deictic verb from F to I (or T in Zhang's analysis) is unpredictable. Zhang herself also notices this problem and leaves it for future research. In the second approach, there are two chains in parallel. In one chain, the deictic verb moves from F to I, which is the pre-VP deictic verb; in the other chain, the deictic verb moves from F to C, which is the post-VP deictic verb. In other words, the pre-VP deictic verb and the post-VP deictic verb do not form a chain, yet they have the same tail.

Hsu (2009) argues that this construction should be better analyzed in two parallel chains. He adopts Aboh and Dyakonova's (2009) analysis on predicate fronting with doubling in Russian and Gungbe to account for the co-occurrence of the pre-VP and the post-VP deictic verb. Aboh and Dyakonova extend Chomsky's (2008) A- vs. A'-chain to head movement.[8] They argue that predicate fronting with doubling is due to the same copy being checked by two different probes. While the fronted predicate is checked by the Discourse features on Foc or Top, in the sense of Rizzi's (1997) split-C hypothesis, the other predicate is checked by Agree-Tense-Aspect features on Fin through V-to-Asp movement.

Take a Russian example, as in (28), which can be schematized as (29) (Aboh and Dyakonova, 2009:1053):

(28)   Lečit'sja(-to)   ja   lečus',...
       take.medication.INF(-PTCL) I.NOM take.medication.1s
       'As for taking medication, I do take it,...'

(29)
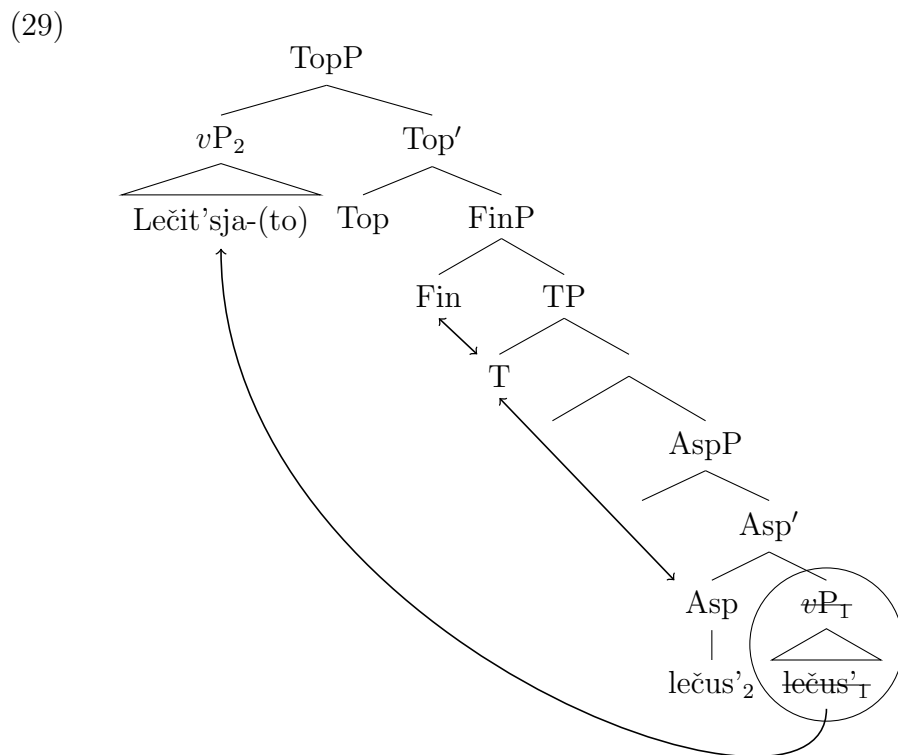
There are two chains in (29), (V_1, V_2) and (vP_1, vP_2). In the (V_1, V_2) chain, the verb *lečus'* moves to Asp for aspect licensing. Assuming that the Agree-Tense-Aspect features are on Fin, they claim that these features are checked under long distance agreement via T, as shown in the lines with arrows on both sides. In

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[8]Aboh and Dyakonova cite the manuscript version in 2005 while Hsu cites the published version in 2008. I follow Hsu here.

the (vP$_1$, vP$_2$) chain, vP is attracted to the Spec,TopP by the [Top] feature on Top.[9] The tail of the two chains, which is the same copy, is deleted at PF.

Similarly, predicate fronting with doubling in Gungbe also involves parallel chains. However, differing from Russian, the fronted predicate is V rather than vP, as shown in the following example (Aboh and Dyakonova, 2009:1054):

(30)   a.   Xíá Sɛ́ná nɔ̀   xíá wémà ná   Kòfí.
             read Sena HAB read book PREP Kofi
             'Sena habitually reads books to Kofi.'

       b.   [$_{FocP}$ [$_{Foc}$ **xíá**$_{[F]}$ [$_{TP}$ Sɛ́ná [$_T$ [$_{AspP1}$ [$_{Asp1}$ nɔ̀ [$_{AspP2}$ [$_{Asp2}$ **xíá**$_{[Asp]}$ [$_{vP}$ [$_{VP}$ x̶íá̶ wémà ná Kòfí]]]]]]]]]]

The two parallel chains are (xíá, xíá$_{[Asp]}$) and (xíá, xíá$_{[F]}$). In the former, the verb is attracted to Asp2 by the Agree-Tense-Aspect features on Asp2, which are inherited from Fin; in the latter, the verb is attracted to Foc by the discourse-related Focus features. In other words, there are two V-chains. The heads of both chains do not have direct relation while the tails of the chains, the crossed-out *xíá* within VP in (30b), are the same copy, which is deleted at PF.

When the two probes do not aim at the same target, doubling does not take place. This is the case when an intervening element (e.g., auxiliary, restructuring verb, or aspectual verb) appears in the sentence. According to Aboh and Dyakonova (2009), in Russian, the auxiliary is merged in T, the modal in Mood, and the restructuring verb in Asp, all of which are heads of functional projections between FinP and VP. The Agree-Tense-Aspect features on Fin are checked by the intervening element due to Minimality. The [Top] feature on Top is checked by the verb, making vP move to the Spec,TopP. The tail of the chain is deleted at PF. Due to the predicate being the goal of only one probe, doubling does not occur.

Take (31) as an example, in which the intervening element is an auxiliary, with the irrelevant projections being omitted (Aboh and Dyakonova, 2009:1057):

(31)   a.   Kupat'sja(-to)   my   budem,...
             swim.INF(-PTCL) we.NOM AUX.FUT.1P
             'As for swimming, we will swim,...'

       b.   [$_{TopP}$ Kupat'sja(-to) [$_{Top}$ [$_{FinP}$ my [$_{TP}$ [$_T$ budem [$_{VP}$ k̶u̶p̶a̶t̶'s̶j̶a̶]]]]]]

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[9]They argue that this chain is an instance of Generalized Pied-piping, in the sense of Chomsky (1995). While the goal is only V, the whole VP is interpreted.

In (31), the Agree-Tense-Aspect features on Fin agree with the auxiliary *budem* in T. At the same time, the [Top] feature on Top agrees with the verb and attracts *v*P to the Spec,TopP. The lower copy of the chain is deleted at PF. Doubling does not arise, for the two probes do not target the same goal.

Return to the deictic verbs with VP in Mandarin Chinese. Hsu (2009) assumes that the sentence-final particle *le* is base-generated in C, differing from the proposal in Zhang (2003) and also in his first approach. He proposes that the sentence-final particle *le* expresses the realis mood and contains a [+realis] feature. When *le* appears in C, the deictic verb is attracted to C to check the [+realis] feature. At the same time, the Agree-Tense-Aspect features on I, inherited from C, attract the deictic verb to raise. The representation of (32) can be illustrated as (33) (Hsu, 2009:71):

(32)   Zhangsan lai   shouming zhe-qi   shijian   lai   le.
         Zhangsan come illustrate   this-CL   accident come Prt
         'Zhangsan comes to illustrate this accident.'

(33)
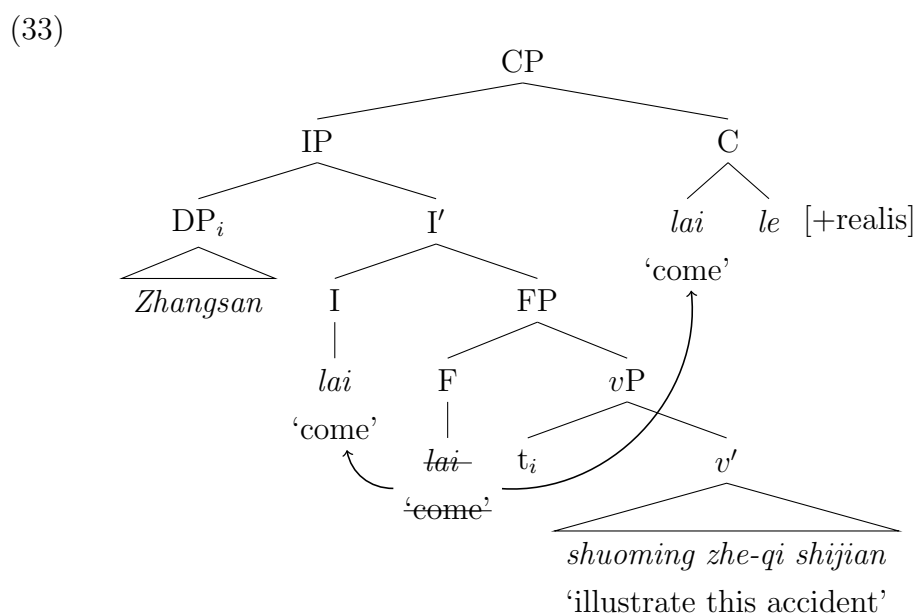
According to Hsu (2009), doubling occurs when there are two chains. The F-I chain stems from checking the Agree-Tense-Aspect features on I whereas the F-C chain is due to checking the [+realis] feature on C. The lower copy of both chains, that is, *lai* 'come' in F, is deleted at PF.

In the case of non-doubling sentences, following Aboh and Dyakonova (2009), Hsu (2009) argues that doubling is absent when there is an intervening element blocking F-to-I movement. For example, when the modal *yinggai* 'should' appears

in the sentence, it satisfies the checking requirement. As a consequence, the deictic verb in F cannot raise to I, as shown below:

(34)   *ta qu$_i$ yinggai t$_i$ kefu   kunnan le.
        he go   should   overcome difficulty Prt
        'He should go to overcome the difficulties.'   (Hsu, 2009:70)

Hsu (2009) stipulates that when only the post-VP deictic verb appears in the sentence, as in (35), there is an invisible intervening element between I and F, which blocks F-to-I movement. Accordingly, doubling does not happen.

(35)   Zhangsan shouming zhe-qi   shijian   lai   le.
        Zhangsan illustrate this-CL accident come Prt
        'Zhangsan comes to illustrate this accident.'   (Hsu, 2009:70)

As far as the pre-VP deictic verb is concerned, it can occur with either the appearance or the absence of the sentence-final particle *le*, as shown in (36). This differs from the case with the post-VP deictic verb, where the sentence-final *le* is obligatory, as illustrated in (37) (Hsu, 2009:72-73):

(36)   a.   Zhangsan lai   shuoming zhe-qi   shijian   le.
              Zhangsan come illustrate this-CL accident Prt

        b.   Zhangsan lai   shuoming zhe-qi   shijian.
              Zhangsan come illustrate this-CL accident
              'Zhangsan came to illustrate this accident.'

(37)   a.   Zhangsan shuoming zhe-qi   shijian   lai   le.
              Zhangsan illustrate this-CL accident come Prt

        b.   *Zhangsan shuoming zhe-qi   shijian   lai.
              Zhangsan illustrate this-CL accident come
              'Zhangsan came to illustrate this accident.'

Hsu (2009) argues that the sentence-final particle *le* in (36a) and in (37a) are different. In (36a), *le* is optional and does not contain the [+realis] feature whereas in (37a), it is obligatory and contains the [+realis] feature. Due to the lack of the [+realis] feature in the optional *le*, the deictic verb in F does not raise to C. He declares that the optionality of movement is similar to wh-movement vs. wh-in situ. In other words, in his analysis, in the case of the appearance of doubling, both F-I and F-C chains take place. After the tail of the chains is deleted at PF, the sentence has both the pre-VP and the post-VP

deictic verb. In the case of the absence of doubling, the sentence has only the pre-VP or the post-VP deictic verb. In the former, the optional sentence-final particle *le* does not have a [+realis] feature, thereby lacking the F-C chain. In the latter, the sentence-final particle *le* has a [+realis] feature, thus triggering F-to-C movement; in addition, an invisible intervening element between F and I blocks F-to-I movement.

While Hsu (2009) proposes a new and interesting approach for this construction, the parallel chain analysis is problematic. If F-to-I movement does exist, we would expect to see the manner adverb always follow the deictic verb. However, the manner adverb can precede the pre-VP deictic verb, as shown in (38), suggesting that the deictic verb does not raise to I.

(38)   Laowang kaixinde lai   da   diandong.
        Laowang happily come play video-game
        'Laowang happily came to play video games.'

Furthermore, his analysis cannot account for the following example:

(39)   Laowang yinggai qu chi fan qu le.
        Laowang should go eat rice go Prt
        'Laowang should have gone to have a meal.'

According to Hsu (2009), the modal *yinggai* 'should' blocks F-to-I movement. The deictic verb in F raises to C to check the [+realis] feature. When the lower copy, *qu* 'go' in F, is deleted at PF, there should be only one chain, the F-C chain. Therefore, doubling should not arise. However, as we can see in (39), doubling is possible even when a modal appears in the sentence, which clearly argues against his proposal. In addition, apart from the overt intervening element such as modals, he does not give further evidence to show the existence of a covert intervening element in sentences like (35) but rather leaves it for future research, which seems not convincing. Moreover, he stipulates two types of sentence-final particle *le*, one with the [+realis] feature and one without it, yet he does not give examples to support the existence of two of them. Accordingly, the parallel chains analysis also appears problematic.

2.5 Ke's (1991) main verb vs. clitic

Unlike the previous three analyses, which treat the merge position of the pre-VP and the post-VP deictic verb to be the same, Ke (1991) argues that the pre-VP deictic verb is a main verb and the post-VP deictic verb is a clitic. She compares both deictic verbs and argues that they are distinct in terms of the ability of taking a locative argument. While the pre-VP deictic verb can take a locative argument, the post-VP deictic verb cannot:

(40)   a.   ta qu taibei mai dongxi qu le.
              he go Taipei buy thing go Prt

        b.   *ta qu mai dongxi qu taibei le.
              he go buy thing go Taipei Prt
              'He went to Taipei to buy things.'   (Ke, 1991:13)

Furthermore, the pre-VP deictic verb can be negated by the negation element (i.e., *bu* 'not' and *meiyou* 'not have') and form an A-not-A question, yet the post-VP deictic verb cannot do so (Ke, 1991:37,46):

(41)   a.   ta bu qu zhao gongzuo.
              he not go find job
              'He will not go and look for a job.'

        b.   ta zuotian meiyou hui jia qu.
              he yesterday not-have return home go

        c.   *ta zuotian hui jia meiyou qu.
              he yesterday return home not-have go
              'He did not go home yesterday.'

(42)   a.   ni daodi qu-bu-qu zhao gongzuo?
              you on-earth go-not-go find job
              'Will you go and look for a job?'

        b.   ta hui-bu-hui jia qu?
              he return-not-return home go

        c.   *ta hui jia qu-bu-qu?
              he return home go-not-go
              'Will he go home?'

In (41), when negation precedes the first verb, the sentence is grammatical. In (41a), the first verb is the pre-VP *qu* 'go'; in (41b), the first verb is *hui* 'return'. When negation appears directly before the second verb, like the post-VP *qu* 'go' in (41c), the sentence becomes ungrammatical. Similarly, the A-not-A form can

only apply to the first verb, which is the pre-VP *qu* 'go' and *hui* 'return' in (42a) and (42b) respectively. When the A-not-A form applies to the second verb, like the post-VP *qu* 'go' in (42c), the sentence becomes ungrammatical.

Comparing the pre-VP deictic verb with the deictic verb functioning as a main predicate, Ke (1991) proposes that the pre-VP deictic verb is a main verb in that it can take a locative argument, be negated, and have the A-not-A form, the characteristics of which are on a par with a lexical deictic verb. In other words, to Ke, the deictic verb can take not only a locative argument but also a VP complement. When the deictic verb appears in a pre-VP position, this lexical verb takes only a VP complement.

However, as Zhang (2003) observes, the pre-VP deictic verb cannot be affixed by an aspectual marker:

(43)   a. Laowang lai-le   dianyingyuan.
            Laowang come-Perf movie theater
            'Laowang came to the movie theater.'

    b. *Laowang lai-le   kan dianying.
            Laowang come-Perf see movie

    c. Laowang lai   kan-le dianying.
            Laowang come see-Perf movie
            'Laowang came to see the movie.'

When the deictic verb takes a locative argument as its complement, the aspectual marker affixes to the deictic verb, as in (43a). When the deictic verb takes a VP complement, the aspectual marker cannot be the affix of the deictic verb, as in (43b); rather, it can only affix to the verb in the verb phrase, as in (43c). If the pre-VP deictic verb is the main verb, the aspectual marker should be able to affix to it, contrary to fact.

Compare (43c) with cases where a locative argument and a VP complement co-occur, as in (44). In this example, the aspectual marker can affix to the pre-VP deictic verb:

(44)   Laowang lai-le   dianyingyuan kan dianying.
        Laowang come-Perf movie theater see movie
        'Laowang came to the movie theater to see the movie.'

As can be seen, the two deictic verbs in (43c) and (44) behave differently. In (44), the deictic verb can take a locative argment as well as be affixed by the

aspectual marker, but in (43c), it cannot. This indicates that while *lai* 'come' in (44) is a lexical verb, that in (43c) is not.

With respect to negation and the A-not-A form, lexical verbs are not the only elements that can be applied to. Modals can be negated and form an A-not-A question as well:

(45)   a.   Laowang bu yinggai kan dianying.
              Laowang not should see movie
              'Laowang should not see the movie.'

        b.   Laowang ying(gai)-bu-yinggai kan dianying?
              Laowang should-not-should   see movie
              'Should Laowang see the movie or not?'

In (45), *yinggai* 'should' is not a lexical verb, yet negation and the A-not-A form can still apply to it. This shows that the abilities to be negated and to form the A-not-A question cannot be tests for lexical verbs. From the above examples, I argue that the pre-VP deictic verb is not a lexical verb.

As far as the post-VP deictic verb is concerned, according to Ke (1991), it does not have the properties of a lexical verb: apart from being unable to take a locative argument, it can neither be negated by *bu* 'not' nor form the A-not-A question:[10]

(46)   a. *ta kan dianying bu qu.
            he see movie   not go
            'He won't go to see the movie.'

        b. *ta kan dianying qu-bu-qu?
            he see movie   go-not-go
            'Will he go to see the movie or not?'   (Ke, 1991:5)

Ke (1991) examines the post-VP deictic verb by Zwicky's (1985) definition of clitics, in which clitics are neither words nor affixes, and argues that the post-VP deictic verb is a clitic. Some tests proposed by Zwicky are employed by Ke to test whether the post-VP deictic verb is a word, including phonological, morpho-syntactic, and syntactic tests.

In the phonological test, clitics do not have their own accent as full words do. Ke (1991) argues that the post-VP *qu* 'go' has a neutral tone and cannot be stressed.

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[10]Both sentences in (46) are grammatical to the native speakers I have consulted. While it is the case, I argue that the grammatical interpretation should be analyzed as the verb phrase being a known topic rather than a purpose.

However, the post-VP *qu* 'go' can also be pronounced in a falling tone, which is the tone of the lexical verb *qu* 'go'. Therefore, this argument cannot support for the post-VP deictic verb being a clitic rather than a word.

The morpho-syntactic tests involve distribution and boundness. In distribution, words to some extent have freedom in ordering with respect to the adjacent words, with or without changing the meaning of the sentence, and their distributions cannot be described by a single rule. Ke (1991) argues that the distribution of the post-VP *qu* 'go' is limited: it must appear after a verb phrase, and this verb phrase cannot be stative (e.g., **shengbing qu* 'sick go'). In boundness, words are free elements and can appear in isolation. According to Ke, the post-VP *qu* 'go' must co-occur with a verb phrase and cannot appear alone, as shown below:

(47)   A: Xiaoming jiehun qu le   ma?
              Xiaoming marry go Prt Q
              'Did Xiaoming get married?'

        B: *qu le.
            go Prt

        C: jiehun qu le.
            marry go Prt
            'He did.'   (Ke, 1991:48)

However, the judgment differs from some of the native speakers I have consulted, who think both responses are grammatical, in spite of (47c) being preferred. Moreover, consider the following example:

(48)   Q: Xiaoming da   gongche qu de ma?
              Xiaoming take bus   go DE Q
              'Did Xiaoming go by bus?'

        A1:*dui, ta qu de.
            yes he go DE

        A2: dui, ta da   gongche qu de.
            yes he take bus   go DE
            'Yes, he went by bus.'

As we saw in Section 2.1, the verb phrase *da gongche* 'take a bus' is the means of Xiaoming's going. The deictic verb *qu* 'go' is thus the main verb. When answering the question, the deictic verb cannot be used alone as a response without also uttering the means. According to Simpson (2015), this kind of question has narrow focus; that is, the questioner assumes that the event has occurred, so he is not asking whether the event has occurred but whether the event occurs in the

way described by the modifier. If the question in (47a) also has narrow focus, which means that the questioner is not asking whether Xiaoming has gone but whether he has gone to get married, the answer has to include the purpose, as in (47c). If that is the case, (47) cannot be an argument for the post-VP deictic verb not being a word.

With respect to the syntactic test, words can be deleted under identity, replaced by pro-forms, and undergo movement if they are licensed in the contexts. Ke (1991) claims that the post-VP *qu* 'go' disallows deletion under identity, as in (49), does not have pro-forms, and cannot undergo movement, as in (50) (Ke, 1991:49-50):

(49) A: ta paobu   qu le   ma?
          he run-step go Prt Q
          'Did he go jogging?'

      B: shi de, ta paobu   qu le.
          yes DE he run-step go Prt

      C: *shi de, ta paobu   le.
          yes DE he run-step Prt
          'Yes, he went jogging.'

(50) a. ta hui   jia   qu le.
          he return home go Prt
          'He went home.'

      b. *qu$_i$, ta hui   jia   t$_i$ le.
          go   he return home   Prt
          'Yes, he went home.'

However, according to Zhang (2003), the infelicity of (49c) stems from the position of the post-VP deictic verb being higher than the verb phrase. She states that when answering a yes/no question in Mandarin Chinese, the highest verbal element is contained:

(51) Q: Da Bao xiang mai shu   ma?
          Da Bao want buy book Q
          'Does Da Bao want to buy books?'

      A1: dui, ta xiang mai.
          right he want buy
          'Right, he wants to.'

      A2: #dui, ta mai (shu).
            right he buy (book)
            'Right, he buys books.'   (Zhang, 2003:184-185)

In (51), the highest verbal element in the question is the verb *xiang* 'want'; thus, the answer to this question has to contain this verb. The second answer is infelicitous as a response due to it not including the highest verb *xiang* 'want'. Examining the sentence with a post-VP deictic verb, as in (52), the first answer, which contains the post-VP deictic verb, is felicitous while the second answer, which does not contain the post-VP deictic verb, is infelicitous. Since the highest verbal element must be contained in the response, Zhang (2003) claims that (52) suggests that the post-VP deictic verb is higher than the verb phrase.

(52)   Q: Da Bao xia qi   lai   le ma?
            Da Bao play chess come Prt Q
            'Has Da Bao come to play a chess?'

        A1: dui, ta xia qi   lai   le.
            right he play chess come Prt
            'Right, he has come to play a chess.'

        A2: #dui, ta xia qi   le.
             right he play chess Prt
            'Right, he has played a chess.'   (Zhang, 2003:185)

In terms of (50), (50a) does not contain the purpose reading. In other words, it cannot mean 'He went to return home,' showing the purpose of his going is to return home; rather, the sentence simply means his going home.[11] Therefore, (50) should not be considered as a post-VP deictic verb in this construction. Furthermore, consider again the example with the means:

(53)   Q: Xiaoming da   gongche qu de ma?
            Xiaoming take bus   go DE Q
            'Did Xiaoming go by bus?'

        A: *qu, ta da   gongche de.
            go he take bus   DE
            'Yes, he went by bus.'

The deictic verb *qu* 'go' in (53) is the main verb, thus a word, yet it cannot be used as a pro-form to answer the question. Consequently, this cannot be a test for words in Mandarin Chinese either. As can be seen, the tests adopted from Zwicky (1985) cannot capture the characteristics of wordhood in Mandarin Chinese.

In addition to not being a word, following Zwicky's (1985) definition of clitics,

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[11]As we will see in Chapter 4, certain motion verbs, such as *hui* 'return' in this example, have some requirements on its distribution when interacting with the deictic verb.

Ke (1991) claims that the post-VP deictic verb is not an affix either. Regarding selection of the host, affixes select the grammatical categories, but clitics do not. According to Ke, the post-VP *qu* 'go' appears after NP, VP, and PP, indicating that it does not select the grammatical category:

(54)   a.   ta mai dongxi qu le.   (NP + *qu*)
                he buy thing   go Prt
                'He went to buy things.'

        b.   ni   ziji shuo qu.   (VP + *qu*)
                you self say   go
                'You tell (someone) by yourself.'

        c.   ta pao chu qu le.   (PP + *qu*)
                he run out go Prt
                'He ran outside.'   (Ke, 1991:50)

However, if we consider the purpose reading in sentences with a post-VP deictic verb, (54b) and (54c) do not have the purpose reading: (54b) does not mean 'the purpose of your going is to tell (someone) by yourself' whereas (54c) does not mean 'the purpose of his going to run out.'[12] Since not all the sentences in (54) have the purpose reading, (54) cannot support the idea that the post-VP deictic verb does not select the grammatical category.

Apart from selection of the host, Ke (1991) states that arbitrary gaps are often seen in affixes, but not in the clitic-like post-VP *qu* 'go', the incompatibility of which with stative verbs and abstract verbs makes the gaps predictable (Ke, 1991:51):

(55)   *zi*: NP suffix

        a.   ya-zi
                duck-zi
                'duck'

        b.   hao-zi
                mouse-zi
                'mouse'

        c.   *mao-zi
                cat-zi
                'cat'

---

[12]Ke (1991) treats *chu* 'exit, out' in (54c) as a preposition. However, the distinction between a verb and a preposition in Mandarin Chinese is not as clear-cut as that in English. As we will see in Chapter 4, *chu* 'exit, out' in (54c) is regarded as a directional verb. As with the case of *hui* 'return' in (50), *chu* 'exit, out' is another verb that has certain requirements when interacting with the deictic verb.

(56) *qu*

    a. chu guo   qu
        exit country go
        'go abroad'

    b. kan dianying qu
        see movie   go
        'go to see movies'

    c. *shengbing qu
        sick   go
        'go to be ill'

However, while (56) shows that the verb phrase preceding the post-VP deictic verb is predictable, it does not mean that the post-VP *qu* 'go' is a clitic, as selection of many functional and lexical heads are also predictable.

According to Ke (1991), the position of the post-VP deictic verb in a syntactic structure is as below (Ke, 1991:87):

(57)
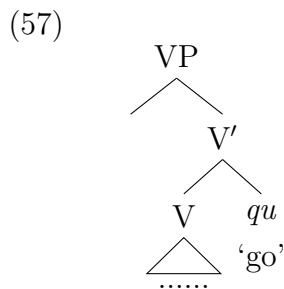
If the post-VP deictic verb is a clitic adjoining to V, the verb should be able to have an aspectual marker. However, as her argument against Zhou (1988) shows, the post-VP deictic verb and the aspectual marker on the main verb cannot co-occur:

(58)   *Laowang kan-le   dianying lai   le.
          Laowang see-Perf movie   come Prt
          'Laowang has come to see the movie.'

Since her arguments cannot support the idea that the post-VP deictic verb is a clitic, I argue that the post-VP deictic verb is not a clitic.

2.6 Chapter summary

We have seen four previous analyses regarding the pre-VP and the post-VP deictic verb. Zhou (1988), Zhang (2003), and Hsu (2009) assume that there is only one merge position for the deictic verbs while Ke (1991) argues that they have different base positions. In addition, Zhou and Ke claim that the pre-VP deictic verb is a main verb whereas Zhang and Hsu propose that it is a functional head. Following Zhang and Hsu, I argue that the pre-VP deictic verb is a functional head rather than a lexical verb. However, I do not agree with them on the movement analysis. In the next chapter, I am going to investigate the deictic verb in the pre-VP and the post-VP position and propose an analysis for this construction.

Chapter 3

Analysis for deictic verbs with VP

This chapter investigates the function of the deictic verbs when they co-occur with a verb phrase. In the previous chapter, we saw that the deictic verb can appear before a verb phrase, after a verb phrase, or in both positions simultaneously. In this chapter, I am going to examine the deictic verb in these positions and propose analyses for them accordingly.

The chapter is organized as follows. Section 3.1 examines the pre-VP deictic verb, followed by the post-VP deictic verb in Section 3.2. Section 3.3 considers sentences with both the pre-VP and the post-VP deictic verb. Section 3.4 concludes this chapter.

3.1   Pre-VP deictic verbs

From the previous analyses we have examined, the pre-VP deictic verb is assumed to be either a lexical verb (e.g., Zhou, 1988; Ke, 1991) or a functional head (e.g., Zhang, 2003; Hsu, 2009). We have seen that the pre-VP deictic verb is not a lexical verb due to the aspectual marker not affixing to the deictic verb but rather to the verb following it. However, it is still possible that the verb series are serial verbs, which, according to Baker (1989), have only one aspectual marker for the series of verbs. Durie (1997) claims that motion serialization exists in all the serializing languages he has encountered, where the motion verb is the first verb and the argument undergoing movement is the agent of the second verb. This is the case of sentences with a pre-VP deictic verb. Durie states that '[i]f

this is serialization, then Baker's theory cannot account for it, because one must presume that the first verb is unaccusative' (Durie, 1997:310). In other words, shared logical arguments should be seen in serial verb constructions, yet there is no such an argument when the first verb is an unaccusative. In our example, the structural subject is the theme of the pre-VP deictic verb (the first verb) and the agent of the verb in the verb phrase (the second verb). Since they do not share the same θ-role, Baker's theory fails to account for it. Baker claims in a footnote that this kind of example should not be analyzed as SVC proper; rather, the deictic verb 'subcategorizes for an infinitival S' complement with a controlled PRO subject' (Baker, 1989:533).

However, Ke (1991) argues that sentences with a pre-VP deictic verb are not a control construction. She employs the adverbs *ziji* 'self' and *qinzi* 'in person' to show that the constituent following the deictic verb is not a clause with a null subject.

According to her, when the adverb *ziji* 'self' appears in the sentence, it suggests the existence of a subject:

(1)   a.   ta zhunbei [PRO zuo zhe-jian shi].
           he try   do   this-CL job
           'He tried to do this job.'

        b.   *Zhangsan zhunbei [ta zuo zhe-jian shi].
           Zhangsan try   he do   this-CL job
           'Zhangsan tried to do this job.'

        c.   ta zhunbei [PRO ziji zuo zhe-jian shi].
           he try   self do   this-CL job
           'He tried to do this job by himself.'   (Ke, 1991:70-71)

In (1), *zhunbei* 'prepare, try' is a subject control verb. The subject of the embedded clause can only be a null subject PRO, as shown in (1a). When the null subject becomes an overt subject, as *ta* 'he' in (1b), the sentence becomes ungrammatical. When the reflexive *ziji* 'self' appears in the embedded clause, as in (1c), it cannot be the subject of the clause, as an overt subject is not allowed. Therefore, *ziji* 'self' in (1c) is an adverb intensifying the verb phrase. When it is an adverb, it implies the existence of a subject in the clause containing it, whether overt or null.

Applying *ziji* 'self' to sentences with a pre-VP deictic verb, the result is as below:

(2) a. ta qu [mai dongxi] le.
    he go buy thing Prt
    'He went to buy things.'

   b. *ta qu [ziji mai dongxi] le.
    he go self buy thing Prt

   c. ta ziji qu [mai dongxi] le.
    he self go buy thing Prt
    'He himself went to buy things.'   (Ke, 1991:71)

If the pre-VP deictic verb is a control verb, there should be a null subject before the verb *mai* 'buy' in (2). Then, adding the adverb *ziji* 'self' directly before *mai* 'buy' should not cause ungrammaticality. However, such a sentence is ungrammatical, as shown in (2b). The adverb *ziji* 'self' can only appear before the deictic verb, as illustrated in (2c). This indicates that the constituent following the deictic verb does not have a PRO as its subject.

Similarly, the subject-oriented adverb *qinzi* 'in person' has to co-occur with the subject and cannot appear alone. While it can appear in the embedded clause in a control construction, as in (3b), it cannot occur between the deictic verb and the verb following it, as in (4c). The examples are from Ke (1991:72-73) with slight modification.

(3) a. ta zhunbei [PRO bangzhu Mali].
    he try   help Mali
    'He tried to help Mali.'

   b. ta zhunbei [PRO qinzi bangzhu Mali].
    he try   in-person help Mali
    'He tried to help Mali in person.'

(4) a. ta qu [mai cai] le.
    he go buy vegetable Prt
    'He went grocery shopping.'

   b. ta qinzi qu [mai cai] le.
    he in-person go buy vegetable Prt

   c. *ta qu [qinzi mai cai] le.
    he go in-person buy vegetable Prt
    'He went grocery shopping in person.'

The fact that the subject-oriented adverb *qinzi* 'in person' cannot appear directly before the verb *mai* 'buy' in (4c) suggests that the constituent following the deictic verb *qu* 'go' does not contain a null subject. Therefore, it is not a control construction.

As we have argued, the pre-VP deictic verb is not a lexical verb. However, it is not a modal either. A similar construction can be found in (American) English, which Shopen (1971) calls the quasi-modal construction and Pullum (1990) the *go get* construction. In this construction, a quasi-modal verb, such as *come* and *go*, is followed by a verb with its base form:

(5)   a.   Go get the paper.
        b.   I told you to go get the paper.
        c.   Every day I go get the paper.   (Pullum, 1990:219)

Similar to the pre-VP deictic verb being unable to have affixation in Mandarin Chinese, in the quasi-modal construction, inflection on the quasi-modal verb is not allowed, including the third person singular *-s*, past tense marker, past participle, and gerund:

(6)   a.   *Mary comes talk to me whenever she has a problem.
        b.   *I/you came talk to him yesterday.
        c.   *I have never gone eat at that restaurant.
        d.   *I am going see(ing) a film.   (Jaeggli and Hyams, 1993:316-317)

Two possible analyses of this construction one might directly assume would be it derived from either infinitive *go to get* or coordination *go and get*. However, these proposals have been rejected by most researchers (e.g., Shopen, 1971; Pullum, 1990; Jaeggli and Hyams, 1993; Cardinaletti and Giusti, 2001). One obvious piece of evidence is that inflection is possible in both infinitive and coordination but not in the quasi-modal construction:

(7)   a.   He came to talk to you yesterday.
        b.   He came and left immediately.   (Jaeggli and Hyams, 1993:321)

In addition, Shopen (1971) observes the semantic differences between the quasi-modal construction and the infinitive:

(8)   a.   They go to buy vegetables every day, but there never are any vegetables.
        b.   *They go buy vegetables every day, but there never are any vegetables. (Shopen, 1971:258)

According to him, the main verb in (8a) is *go* while that in (8b) is *buy*. In the *go to buy* case, the purchase does not assert to take place, thus the two clauses coordinated by *but* not contradicting each other. By contrast, in the *go buy* case, the purchase has taken place, thereby the first clause contradicting the second clause. Since the two structures do not have the same interpretation, the quasi-modal construction should not be derived from the infinitive.

In terms of the coordination analysis, Shopen (1971) also argues against it. He states that *go and eat* differs from *eat and go* in that in the former, either a coordinating or a subordinating (i.e., *go* modifying *eat*) interpretation is possible while in the latter only the coordinating interpretation is acceptable. When *go and eat* with the subordinating interpretation stacks, it cannot stack as how *go eat* does:

(9)   a.   Come go eat with us.

        b.   Come and go eat with us.

        c.   Come go and eat with us.

        d. *Come and go and eat with us.   (Shopen, 1971:258)

Pullum (1990) further supports the stacking test by extracting the complement of the last verb in coordination:

(10)   a.   What would you like to come go eat?

        b. *What would you like to come and go and eat? (Pullum, 1990:226)

Example (10b) violates the Coordinate Structure Constraint in that only the complement of *eat* is extracted. If the *go get* construction is derived from coordination *go and get*, the same constraint should apply. The grammaticality of (10a) suggests that *go get* is not *go and get* with *and*-deletion.

Turning to sentences with the pre-VP deictic verb in Mandarin Chinese, they are derived from neither infinitive nor coordination as well. Due to the lack of markers to show subject-verb agreement, tense, participle, and gerund in Mandarin Chinese, we cannot tell whether the verb phrase after the pre-VP deictic verb is infinitive or bare verb phrase, unlike in English. However, if it is infinitive showing a purpose, it should belong to what Jones (1991) terms purpose constructions. According to him, there are three types of purpose clauses, including in order clause (IOC), subject-gap purpose clause (SPC), and object-gap purpose clause (OPC):

(11) a. Mary brought John along [in order to talk to him]. (IOC)
      b. Mary brought John along [to talk to her]. (SPC)
      c. Mary brought John along [to talk to]. (OPC)   (Jones, 1991:25)

Jones (1991) distinguishes IOC from SPC/OPC by some tests. One of them is that IOC can be preposed whereas SPC/OPC cannot:

(12) a. [In order to talk to him], they brought John along. (IOC)
      b. *[e to talk to them], they brought John along. (SPC)
      c. *[To talk to e], they brought John along. (OPC)   (Jones, 1991:56)

If the verb phrase after the pre-VP deictic verb is an infinitive showing a purpose, it should belong to SPC. Then, preposing the verb phrase should cause ungrammaticality. However, such a sentence is grammatical, as shown in (13), suggesting that the verb phrase after the pre-VP deictic verb is not an infinitive.

(13) a. tamen meitian   lai   [mai hua].
          they   every day come buy flower

      b. [mai hua]   tamen meitian   lai.
          buy flower they   every day come
          'They come to buy flowers every day.'

Sentences with a pre-VP deictic verb are not coordination constructions either, as Ke (1991) argues, in that movement of the object does not violate the Coordinate Structure Constraint, as shown below:

(14) a. tamen meitian   lai   mai hua.
          they   every day come buy flower

      b. hua   tamen meitian   lai   mai.
          flower they   every day come buy
          'They come to buy flowers every day.'

As we can see, like the quasi-modal construction in English, sentences with a pre-VP deictic verb in Mandarin Chinese are also derived from neither infinitive nor coordination. This result conforms to our previous argument; that is, the pre-VP deictic verb is not a lexical verb.

3.1.1 Pre-VP deictic verb as a functional head

In order to examine the properties of the quasi-modal verbs, Cardinaletti and Giusti (2001) list some of the behavior that a functional head shows. Hsu (2009) employs the list of functional behavior to test the pre-VP deictic verbs in Mandarin Chinese. However, he treats both spatial and non-spatial pre-VP deictic verbs as non-deictic (i.e., he categorizes Tang's (1979) auxiliary use and some of the non-deictic uses as the same function), which I argue should be treated differently. Thus, in the following, I am going to examine the pre-VP deictic verb with only the spatial meaning.

The first property of a functional head is that functional categories are closed classes. In the quasi-modal construction, only limited verbs can be the first verb, such as *come* and *go*. Other verbs cannot be used in the same way:

(15)   a.   *Run* hide in the woods! (Also *Hurry*, *Go* or *Come*)
        b.   **Walk* hide in the woods! (**Fly*, **Scoot*, **Sprint*, **Crawl*, **Sneak*, **Swim*, **Rush*)   (Shopen, 1971:255)

In Mandarin Chinese, there are also only limited verbs being able to appear as the first verb, as illustrated in (16). However, Mandarin Chinese seems to allow only the deictic verbs *lai* 'come' and *qu* 'go', unlike English, which allows a few more verbs, such as *run*.

(16)   a.   kuai lai/qu   duo dao shulin li!
            quick come/go hide to   wood in
            'Come/go hide in the woods quickly!'
        b.   *kuai zou/fei/pao duo dao wood in
            quick walk/fly/run hide to   wood in
            'Walk/fly/run hide in the woods quickly!'

The second property is that auxiliaries precede lexical verbs. In the quasi-modal construction, the motion verb has to be the first verb:

(17)   a.   I go buy bread.
        b.   *I buy bread go.   (Cardinaletti and Giusti, 2001:376)

In Mandarin Chinese, as we have seen, the deictic verb can appear either before or after the verb phrase:

(18)   a.   wo qu mai mianbao.
              I   go buy bread

         b.   wo mai mianbao qu.
              I   buy bread   go
              'I go to buy bread.'

We will investigate the distributions of the post-VP deictic verb in the next section. However, leaving this distribution aside, Mandarin Chinese has both head-initial and head-final word orders, depending on the projection. For example, the sentence-final particles are assumed to be in C and they appear at the end of the sentence rather than at the beginning of it. As a consequence, the relative position may not be a suitable test for functional categories in Mandarin Chinese.

Another property of a functional head is that it does not have its own argument, as in (19); in addition, while lexical categories can be modified by adjuncts, functional ones cannot, as in (20) (Cardinaletti and Giusti, 2001:378-379):

(19)   a.   I go all the way there to eat.
         b.   *I go all the way there eat./*I go eat all the way there.

(20)   a.   They go to eat by car.
         b.   They go and eat by car.
         c.   *They go eat by car.

In Mandarin Chinese, we have argued that a pre-VP deictic verb cannot take a locative argument either. Recall that in the case of the deictic verb taking a locative argument, it can be affixed by the aspectual marker, which differs from the pre-VP deictic verb. The contrast is shown below:

(21)   a.   tamen lai-(le)   hua-dian   mai hua.
              they   come-Perf flower-shop buy flower
              'They came to the flower shop to buy flowers.'

         b.   tamen lai-(*le)   mai hua.
              they   come-Perf buy flower
              'They came to buy flowers.'

In (21a), *lai* 'come' is a lexical verb due to it being able to take a locative argument and be affixed by the aspectual marker. By contrast, in (21b), *lai* 'come' is not a lexical verb as it cannot be affixed by the aspectual marker. Since the two deictic

verbs behave differently, they should not be regarded as the same. Therefore, (21a) cannot be an argument to support the assumption that the pre-VP deictic verb can take a locative argument.

With respect to adjunction, consider the following example:

(22)   tamen xunsude lai   mai hua.
        they   rapidly   come buy flower
        'They rapidly came to buy flowers.'

In (22), the deictic verb can be modified by the adverb *xunsude* 'rapidly'. Thus, unlike the quasi-modal construction, the pre-VP deictic verb in Mandarin Chinese can be modified by the adjunct. However, according to Cardinaletti and Giusti (2001), the quasi-modal verb in English cannot be modified by the adjunct not due to its position but for an independent reason.[1] If that is the case, disallowing adjunction should not be regarded as functional behavior.

Finally, there are morphological restrictions. As we have already seen, the quasi-modal verb has to be in its base form. In Mandarin Chinese, similarly, the pre-VP deictic verb cannot have an aspectual marker.

Apart from functional behavior, the quasi-modal verbs in English are believed to display some lexical properties as well. First, they assign the secondary agentive θ-role to the subject, thus disallowing a non-volitional subject (Shopen, 1971:259):

(23)   a.   Pieces of driftwood come and wash up on the shore.
        b.   *Pieces of driftwood come wash up on the shore.

(24)   a.   Our sewage might go and pollute the town water supply.
        b.   *Our sewage might go pollute the town water supply.

With respect to the pre-VP deictic verb in Mandarin Chinese, the selectional restriction does not hold, as shown in (25). That is to say, the pre-VP deictic verb in Mandarin Chinese does not have this lexical property.

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[1]They propose that in (20), the adjunct that the deictic verb selects has to follow the lexical verb. The word order is from moving the projection of the lexical verb across the adjunct. While movement is allowed for bigger XPs like *to eat* and *and eat*, it is not possible for the bare verb *eat*.

(25) tamen de wushui hui lai   wuran chengzhen de gong   shui.
      they DE sewage will come pollute town   DE supply water
      'Their sewage will come pollute the town water supply.'

Another lexical property of the quasi-modal verbs is that they must be deleted
and preposed under VP-deletion and VP-fronting respectively, which are in con-
trast to modals (Jaeggli and Hyams, 1993:318):

(26)   a.   I come talk to my advisor every week and you do/*come, too.
       b.   John may be late for the appointment and Mary may too.

(27)   a.   John arranged to come fix the roof and come fix the roof he did.
       b.   *Mary said that she would write and would write she did.

In Mandarin Chinese, the pre-VP deictic verb seems to act like a modal at first
glance:

(28)   a.   wo yinggai yundong, ni   ye   yinggai.
            I   should exercise   you also should
            'I should exercise and you should, too.'

       b.   wo lai   yundong, tamen ye   lai.
            I   come exercise   they   also come
            'I come to exercise and they do, too.'

However, note that in Mandarin Chinese, in addition to modals, verbs can also
be retained:

(29)   wo ti   zuqiu, ta ye   ti.
       I   kick football he also kick
       'I play football and he does, too.'

Despite the fact that the two types of ellipsis are regarded to be different (e.g.,
see Li and Wei, 2014 and Wu, 2016), both modals and verbs can be retained.[2]
Examples (28a) and (29) show that VP-deletion cannot be a test to distinguish
modals and lexical verbs in Mandarin Chinese.

Quasi-modal verbs are also distinct from modals and auxiliaries in the ability of
undergoing subject-auxiliary inversion (30a), the relative position with negation
(30b) as well as sentential adverbs (31) (Jaeggli and Hyams, 1993:319):

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[2]The differences will be addressed on pp.90-91.

(30) a. *Go you see a movie every day?
          (cf. May I go see a movie?)
      b. *I come not talk to my advisor as often as I should.
          (cf. I should not talk to my advisor at this point.)

(31) a. I have seldom mentioned that matter to him.
      b. I seldom/often come discuss this issue with you.
      c. *I come seldom/often discuss this issue with you.

In Mandarin Chinese, negation can appear either before or after the modal, depending on the scope:

(32) a. ni   yinggai bu mai hua.
          you should not buy flower
          'You should not buy flowers.'
      b. ni   bu yinggai mai hua.
          you not should buy flower
          'You shouldn't buy flowers.'

In (32a), negation only scopes over the verb phrase *mai hua* 'buy flowers'. The interpretation is 'What you should do is not buy flowers.' By contrast, in (32b), negation scopes over the modal. The meaning is 'What you shouldn't do is buy flowers.' In other words, *bu* 'not' in (32b) is sentential negation while that in (32a) is not. If we only consider the position of sentential negation, the distribution differs from English, where sentential negation follows the modal and the auxiliary.

In the case of the pre-VP deictic verb, sentential negation can only precede it:

(33) a. *ni   lai   bu mai hua.
          you come not buy flower
      b. ni bu lai   mai hua.
          you not come buy flower
          'You don't come to buy flowers.'

Since sentential negation always precedes modals and lexical verbs in Mandarin Chinese, in contrast to in English, the position of sentential negation cannot be a test to distinguish functional heads and lexical verbs in Mandarin Chinese.

As far as the sentential adverb is concerned, like in English, it follows the modal and precedes the pre-VP deictic verb:

(34)   a.   ni   yiding changchang ting   yinyue.
            you must   often   listen music

       b.   *ni   changchang yiding ting   yinyue.
            you often   must   listen music
            'You must often listen to music.'

(35)   a.   *ni   lai   changchang mai hua.[3]
            you come often   buy flower

       b.   ni   changchang lai   mai hua.
            you often   come buy flower
            'You often come to buy flowers.'

However, note that Mandarin Chinese uses affixation on the verb to show aspect:
-le is a perfective marker, *-guo* is an experiential marker, and *-zhe* is a durative
marker. By contrast, English employs free morphemes to indicate aspect, such
as *have* for perfective and *be* for progressive, which raise to T from their base
position when being the highest auxiliary, with a corresponding verb ending.
If verbs in Mandarin Chinese obtain the aspectual marker by raising to Asp,
as Zhang (2003) argues, the landing site of the aspect morphemes in the two
languages clearly differ.[4]

Consider the following example:

(36)   Laowang congmei mai-guo hua.
       Laowang never   buy-Exp flower
       'Laowang has never bought flowers before.'

In (36), the sentential adverb *congmei* 'never' precedes the experiential marker
-guo. If verbs obtain the aspectual marker by raising to Asp, (36) shows that the
sentential adverb is higher than AspP, which is a functional projection. Then,
(35) cannot be an argument for the deictic verb being lexical, as the functional
projection AspP also follows the sentential adverb.

After examining the pre-VP deictic verb by employing the list of functional be-

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[3]The sentence is grammatical under the interpretation 'When you come, you often buy
flowers.'

[4]There is another aspectual marker, *zai*, which shows progressive. This aspectual marker
does not affix to the verb; rather, it precedes the main verb and follows the sentential adverb,
as in (i), suggesting that the progressive *zai* does not move to T, unlike the English case.

(i)   Laowang zongshi zai   baoyuan.
       Laowang always Prog complain
       'Laowang is always complaining.'

havior from Cardinaletti and Giusti (2001), excluding the problematic tests for Mandarin Chinese, the pre-VP deictic verb behaves like a functional head: there are limited elements to be in the pre-VP position and the pre-VP deictic verb cannot take a locative argument. With respect to the lexical behavior, unlike English, the pre-VP deictic verb does not select an agentive subject. The rest of the tests are not suitable for Mandarin Chinese due to modals and auxiliaries raising to T in English but not in Mandarin Chinese; additionally, the lexical verb can be stranded under ellipsis in Mandarin Chinese. To sum up, these tests show that the pre-VP deictic verb in Mandarin Chinese is a functional head and does not have properties of lexical verbs.

3.1.2 Proposal

We have seen that sentences with a pre-VP deictic verb are derived from neither infinitive nor coordination. In addition, the pre-VP deictic verb belongs to the functional categories. Following Zhang (2003) and Hsu (2009), I propose that the pre-VP deictic verb is a functional head between NegP and AspP. However, we can narrow it down to between ModP and AspP, considering that both the modal and the pre-VP deictic verb follow sentential negation. I propose a Deictic Phrase (DeicP) below ModP and above AspP for the pre-VP deictic verb. The representation of (37) can be schematized as (38):

(37)   Laowang yinggai changchang lai   mai hua.
            Laowang should often   come buy flower
            'Laowang should often come to buy flowers.'

(38)

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                        CP
            _____/  _____
          TP                          C
      ___/  \___
    DP_i         T'
   /____\     __/  \__
  Laowang    T        ModP
          _____/  _____
        Mod                         DeicP
         |              _____/  _____
      yinggai         AdvP                        DeicP
      'should'      __/____\              _____/  _____
               changchang             Deic                  vP
                'often'                |            _____/  _____
                                      lai        ⟨DP_i⟩            v'
                                     'come'               _____/  _____
                                                         v                IAspP
                                                              _____/  _____
                                                            IAsp                  VP
                                                           [-telic]          ___/  \___
                                                                           DP          V
                                                                         /____\         |
                                                                         hua           mai
                                                                       'flower'       'buy'
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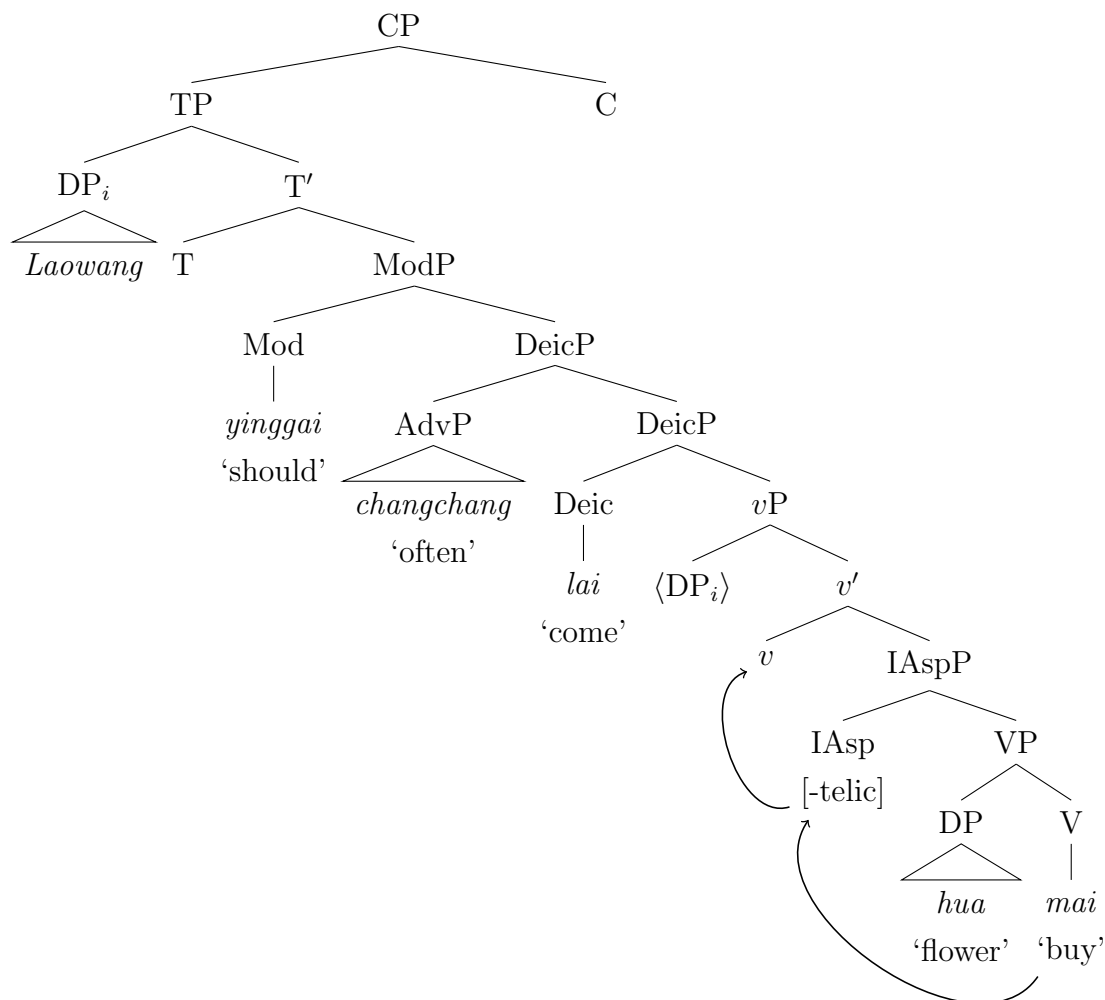
Following Travis (2010), I propose that the object is merged in the Spec,VP.[5] Since whether or not the object moves to the Spec,IAspP does not affect the word order, for simplicity, I assume that in Mandarin Chinese, the object that measures out the event does not move to the Spec,IAspP but rather agrees with and is assigned accusative Case by IAsp in situ. In (38), the IAsp head calculates telicity of the event as atelic, which is marked by the [-telic] feature on IAsp. The verb *mai* 'buy' undergoes cyclic head movement to v. The subject is merged in the Spec,vP and later moves to the Spec,TP. The pre-VP deictic verb *lai* 'come' is in the Deic head. This is a functional head as opposed to a lexical verb; thus, the pre-VP deictic verb cannot take a locative argument.

The position of the pre-VP deictic verb is higher than AspP. Since the verb obtains the aspectual marker by raising to Asp, as Zhang (2003) argues, it is rea-

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[5]In order not to be confused with our terms in the following chapters, I replace Travis's (2010) V1, V2, Asp (for inner aspect), and OAsp (for outer aspect) with v, V, IAsp, and Asp respectively.

sonable that the pre-VP deictic verb cannot be affixed by the aspectual marker. What is more, it further shows that the manner adverb can adjoin to a functional projection higher than vP in Mandarin Chinese:

(39) a. Laowang xunsude mai-le   hua.
         Laowang rapidly   buy-Perf flower

      b. *Laowang mai-le   xunsude hua.
         Laowang buy-Perf rapidly   flower
         'Laowang rapidly bought flowers.'

In (39), the manner adverb *xunsude* 'rapidly' has to precede the main verb *mai* 'buy', which is affixed by the aspectual marker *-le*. If the manner adverb adjoins to vP, we would expect to see the manner adverb follow the verb after the verb raises to Asp. However, as (39b) shows, such a sentence is ungrammatical. Regardless of the absence or the appearance of the aspectual marker, the manner adverb always precedes the verb. This indicates that the manner adverb does not always adjoin to vP; it can sometimes adjoin to a projection higher than vP, such as AspP. Then, it is not surprising to see a manner adverb precede the pre-VP deictic verb as well, which is another functional head:

(40) a. Laowang xunsude lai   mai hua   le.
         Laowang rapidly   come buy flower Prt

      b. Laowang lai   xunsude mai hua   le.
         Laowang come rapidly   buy flower Prt
         'Laowang has rapidly come to buy flowers.'

In fact, in English, the manner adverb can also adjoin to a projection higher than vP, as shown in (41a) and (41b):

(41) a. John will enthusiastically have been eating cake.
      b. John will have enthusiastically been eating cake.
      c. John will have been enthusiastically eating cake.
         (Sportiche, Koopman and Stabler, 2014:197)

We can thus assume that when the manner adverb precedes the pre-VP deictic verb, as in (40a), it adjoins to DeicP; when the manner adverb precedes the main verb without an aspectual marker, as in (40b), it adjoins to vP; and when the manner adverb precedes the main verb with an aspectual marker, as in (39a), it adjoins to AspP.

Regarding comparison between Mandarin Chinese and English, modals in Mandarin Chinese do not raise to T, unlike in English. Therefore, while sentential negation follows modals and auxiliaries and precedes lexical verbs in English, it precedes both of them in Mandarin Chinese. The distribution of the sentential adverb differs in the two languages for the same reason. Due to compulsory raising of modals and auxiliaries in English, the sentential adverb always follows them. By contrast, modals and auxiliaries stay in situ in Mandarin Chinese. The sentential adverb adjoins to a projection lower than ModP, thereby following modals but preceding auxiliaries. The differences between the two languages explain the reason why some tests are suitable for English but not for Mandarin Chinese.

In summary, sentences with a pre-VP deictic verb are derived from neither infinitive nor coordination. The pre-VP deictic verb is not a lexical verb but a functional head. It is in the head of DeicP, the position of which is between ModP and AspP. The aspectual marker in Asp cannot be the affix of the pre-VP deictic verb as it is lower than the Deic head. The manner adverb in Mandarin Chinese adjoins to a lower functional projection, such as vP, AspP, and DeicP, thus the manner adverb being able to precede the pre-VP deictic verb.

3.2 Post-VP deictic verbs

Like the pre-VP deictic verb, in the previous analyses, the post-VP deictic verb is also assumed to be either a lexical verb (e.g., Zhou, 1988) or a functional category (e.g., Zhang, 2003; Hsu, 2009; Ke, 1991). In addition, movement may be involved. Despite the fact that the chain analyses are questionable, the position of the post-VP deictic verb in the analyses is still worth examining. Zhang and Hsu propose that the landing site of the post-VP deictic verb is in C. Apart from response to a yes/no question that we saw in Section 2.5, Zhang argues that the post-VP deictic verb is higher than the verb phrase for the following reasons.

First, the adverb *yijing* 'already' only scopes over the element it directly c-commands. It does not scope over the more deeply embedded element:

(42)   a.   Da Bao yijing   dasuan [xue yingyu] le.
                 Da Bao already plan   learn English Prt
                 'Da Bao already planned to learn English.'
                 not: 'Da Bao already learned English.'

b. Da Bao yijing   [kan luxiang] lai   le.
   Da Bao already see   video   come Prt
   'Da Bao already came to watch a video.'
   not: 'Da Bao already watched a video.'   (Zhang, 2003:185-186)

In (42a), the verb *dasuan* 'plan' is the matrix verb and the verb *xue* 'learn' is the embedded verb, thus the fomer being higher than the latter. The adverb *yijing* 'already' scopes over the higher verb *dasuan* 'plan', and the sentence means 'already planned' rather than 'already learned'. According to Zhang (2003), (42b) means 'already came' as opposed to 'already watched', suggesting that the deictic verb *lai* 'come' is higher than the verb *kan* 'see'.

However, consider the following example:

(43)   Laowang yijing   mai paomian   lai   chi le, xianzai zheng zai
        Laowang already buy instant noodles come eat Prt now   right Prog
        deng shui   gun.
        wait water boil
        'Laowang has already bought instant noodles to eat. He is now waiting for the water to boil.'

In (43), the verb phrase *lai chi* 'to eat' is the purpose of Laowang's buying instant noodles. Assuming that this verb phrase is the object-gap purpose clause (OPC) in the sense of Jones (1991), *lai chi* 'to eat' should be an adjunct phrase adjoining to vP.[6] Since the purpose clause adjoins to vP and the main verb moves to v, the position of *lai chi* 'to eat' is higher than the main verb *mai* 'buy'. If *yijing* 'already' only scopes over the element it directly c-commands, as Zhang (2003) argues, (43) should only scope over the purpose clause and mean 'already ate'. However, the sentence does not mean Laowang already ate the instant noodles, as he is still waiting for the water to boil; rather, it means that he already

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[6]Liao and Lin (2019) propose that the purpose clause with *lai* 'come' in it, which they term the *lai* purposive, is a CP complement, with *lai* 'come' being in C. If the *lai* purposive is a complement of the verb, under VP-ellipsis, the *lai* purposive cannot be retained. However, as we will see in (47a), under the *ye*-V variant of the VP-ellipsis, the *lai* purposive can still occur. This shows that the *lai* purposive is not a complement of the verb.

   In addition, *lai* cannot be in C, as a modal can precede *lai* 'come':

(i)   Laowang mai yi-dui   lingshi [yao lai   shi].
        Laowang buy one-CL snack   will come eat
        'Laowang bought a lot of snacks to eat.'

It is likely that *lai* 'come' in the purpose clause is the pre-VP deictic verb. Since this chapter is investigating the use of the pre-VP deictic verb in the matrix clause, I will leave the use of *lai* 'come' in the purpose clause for future research.

bought instant noodles. This shows that the scope of the adverb *yijing* 'already' does not always scope over what it directly c-commands, such as the case of the purpose clause. If the behavior of the verb phrase *kan luxiang* 'watch a video' in (42b) is similar to the purpose clause, the adverb *yijing* 'already' will also scope over the deictic verb *lai* 'come', in spite of the deictic verb being lower than the verb phrase. If that is the case, the sentence also means 'already came' but not necessarily 'already watched'.

Zhang's (2003) second argument for the post-VP deictic verb being higher than the verb phrase is that in a conjunction construction in Mandarin Chinese, it is possible for the complement of the verb in the second conjunct to be a null form, co-indexed with that in the first conjunct, yet it is not possible for the verb in the second conjunct to do so while retaining its complement (Zhang, 2003:186-187):

(44)   a.   Lao Li xiang shuijiao$_i$, Lao Gao ye   xiang e$_i$.
             Lao Li want sleep   Lao Gao also want

        b.   *Lao Li xiang$_i$ shuijiao, Lao Gao ye   e$_i$ shuijiao.
             Lao Li want   sleep   Lao Gao also   sleep
             'Lao Li wants to sleep, so does Lao Gao.'

(45)   a.   Lao Li [kan luxiang] lai   le, Lao Gao ye   lai   le.
             Lao Li see video   come Prt Lao Gao also come Prt

        b.   *Lao Li [kan luxiang] lai   le, Lao Gao ye   [kan luxiang] le.
             Lao Li see video   come Prt Lao Gao also   see video   Prt
             'Lao Li has come to watch a video, so has Lao Gao.'

In (44a), the null form *e* in the second conjunct, which is the complement of the verb *xiang* 'want', is co-indexed with the verb *shuijiao* 'sleep' in the first conjunct, and the sentence is grammatical. By contrast, in (44b), the null form *e* in the second conjunct is co-indexed with the matrix verb *xiang* 'want' in the first conjunct, with its complement (i.e., *shuijiao* 'sleep') remaining overt, and the sentence is ungrammatical. This indicates that the overt element in the second conjunct has to be in the higher position. Examining (45), when *kan luxiang* 'watch a video' becomes a null form in the second conjunct, as in (45a), the sentence is grammatical; when *lai* 'come' becomes a null form in the second conjunct, as in (45b), the sentence is ungrammatical. To Zhang (2003), this suggests that the deictic verb is higher than the preceding verb phrase.

However, if we consider VP-ellipsis with a purpose clause, it seems that the adjunct cannot be retained without the main verb. According to Wei (2010), there are three variants of VP-ellipsis in Mandarin Chinese: *ye-shi*, *ye*-Aux, and

ye-V. Under the ellipsis analysis, it is assumed that what is elided is IP, vP, and VP respectively (Li and Wei, 2014; Soh, 2007; Wu, 2016).[7] The differences can be seen by the following example:

(46)   a.   Ahua bu yinggai likai, Lisi ye   shi.   (*ye-shi*)
                      Ahua not should leave Lisi also be
                      'Ahua should not leave, neither should Laoli.'

            b.   Ahua bu yinggai shangxinde likai, Lisi ye   bu yinggai. (*ye-Aux*)
                      Ahua not should sadly   leave Lisi also not should
                      'Ahua should not leave sadly, neither should Lisi.'

            c.   Ahua shangxinde likai-le   zheli, Lisi ye   likai-le.   (*ye-V*)
                      Ahua sadly   leave-Perf here Lisi also leave-Perf
                      'Ahua left here sadly, and Lisi also left here.'

In the *ye-shi* example (46a), the elided constituent includes negation whereas in the *ye*-Aux example (46b), negation is not included due to it preceding the modal. On the other hand, in the *ye*-Aux example (46b), the elided constituent includes the adjunct while in the *ye*-V example (46c), the adjunct is not included. Since the manner adverb adjoins to vP and the elided constituent is VP rather than vP in (46c), it accounts for why the meaning in the second conjunct does not include the manner adverb.

Now consider the following example:

(47)   a.   Laowu mai mianbao [lai   chi] le, Laoli ye   mai (lai   chi) le.
                      Laowu buy bread   come eat Prt Laoli also buy come eat Prt

            b.   *Laowu mai mianbao [lai   chi] le, Laoli ye   [lai   chi] le.[8]
                      Laowu buy bread   come eat Prt Laoli also come eat Prt
                      'Laowu has bought bread to eat, and so has Laoli.'

In (47), *lai chi* 'to eat' is the purpose clause adjoining to vP. When the complement of the main verb (i.e., *mianbao* 'bread') becomes a null form in the second conjunct, as in (47a), the purpose clause is optional. When the purpose clause appears, it means that Laoli also bought bread to eat; when it does not appear, the sentence means that Laoli also bought bread, and the reason to buy bread may be different. By contrast, when both the main verb and its complement (i.e., *mai mianbao* 'buy bread') become null in the second conjunct, as in (47b),

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[7]Note that ellipsis is only one of the proposals for VP-ellipsis in Mandarin Chinese. Since our purpose is only to examine the relative position between the post-VP deictic verb and the verb phrase, I will not discuss other proposals for VP-ellipsis.

[8]The sentence is grammatical under the interpretation that Laoli ate Laowu's bread. In this interpretation, *chi* 'eat' is not in the adjunct clause but rather in the matrix clause.

the sentence is ungrammatical. If *kan luxiang* 'watch a video' in (45) behaves like the purpose clause here, it also accounts for the distributions. Then, it is possible that the verb phrase *kan luxiang* 'watch a video' is not lower than the deictic verb *lai* 'come' but rather higher than it.

Leaving the issue whether the post-VP deictic verb is higher than the verb in the verb phrase aside for the time being, these arguments in fact show that the surface position of the post-VP deictic verb is not in C. First, if the adverb *yijing* 'already' scopes over the element it directly c-commands, it cannot c-command the element that is in C. Since the adverb *yijing* 'already', which may adjoin to TP or DeicP, can scope over the post-VP deictic verb, the deictic verb should not be in C.

Second, when the complement in the second conjunct is a null form, the highest verbal element and the C head do not become null with it. Let us begin from examples without a post-VP deictic verb:

(48) a. Laowang yinggai jiehun le, Laoli ye   yinggai ~~jiehun~~ le.
         Laowang should marry Prt Laoli also should marry Prt
         'Laowang should get married, and so should Laoli.'

   b. Laowang kan dianying le, Laoli ye   kan ~~dianying~~ le.
         Laowang see movie   Prt Laoli also see movie   Prt
         'Laowang has seen the movie, and so has Laoli.'

In (48a), the modal *yinggai* 'should' is higher than the verb *jiehun* 'marry' and licenses *v*P-ellipsis in the second conjunct. The verb *jiehun* 'marry' in the second conjunct then becomes the null form, co-indexed with that in the first conjunct. Since what is elided is *v*P, the sentence-final particle *le*, which is in C, does not become null with the verb. Similarly, in (48b), the verb *kan* 'see' licenses VP-ellipsis in the second conjunct, which makes the complement of the verb in the second conjunct become null, co-indexed with that in the first conjunct. Due to the omitted constituent being VP, the sentence-final particle *le*, which is in C, does not become null with the complement.

Now, consider an example with a post-VP deictic verb:

(49) a. *Laowang kan dianying lai   le, Laoli ye   kan ~~dianying~~ lai   le.
          Laowang see movie   come Prt Laoli also see movie   come Prt

   b. Laowang kan dianying lai   le, Laoli ye   ~~kan dianying~~ lai   le.
         Laowang see movie   come Prt Laoli also see movie   come Prt
         'Laowang has come to see the movie, and so has Laoli.'

As with (48), in (49), the highest verbal element and C should not be null. If the landing site of the post-VP deictic verb is in C, what becomes null in the second conjunct should only be the complement of the verb, that is, *dianying* 'movie'. However, as the star mark in (49a) shows, such a sentence is ungrammatical. To make the sentence grammatical, the whole verb phrase *kan dianying* 'see the movie' has to be null, as in (49b). This indicates that the post-VP deictic verb is the highest verbal element and its position is not in C but rather lower than C.

A similar argument can be seen in the response to a yes/no question as well. When answering a yes/no question, the highest verbal element is used, such as modal and verb, but not a sentence-final particle:

(50)   Q: Laowang keyi kan dianying le   ma?
             Laowang can   see   movie   Prt Q
             'Can Laowang see the movie now?'

        A: (i)   keyi le.
                   can   Prt

             (ii)   *le.
                   Prt
                   'Yes, he can.'

(51)   Q: Laowang kan dianying le   ma?
             Laowang see   movie   Prt Q
             'Has Laowang seen the movie?'

        A: (i)   kan le.
                   see   Prt

             (ii)   *le.
                   Prt
                   'Yes, he has.'

As shown in the responses, the sentence-final particle cannot be used as answers to yes/no questions. The highest verbal element must be included, which is the modal *keyi* 'can' and the main verb *kan* 'see' in (50) and (51) respectively. According to Simpson (2015), the verbal answer to the yes/no question is derived from verb movement to the C domain and ellipsis of a TP-level constituent. If the post-VP deictic verb is in C, we would expect the verbal answer to include the verb *kan* 'see', and the post-VP deictic verb alone unable to answer the yes/no question. However, unlike the answers in (50) and (51), the grammatical response is the second answer as opposed to the first one:

(52) Q: Laowang kan dianying qu le   ma?
          Laowang see movie   go Prt Q
          'Has Laowang gone to see the movie?'

      A: (i) *kan qu le.
               see go Prt

          (ii) qu le.
                go Prt
                'Yes, he has.'

This shows that the post-VP deictic verb is the verbal element to undergo movement before ellipsis and is thus not in C, contrary to Zhang's (2003) and Hsu's (2009) proposals.

Next, let us examine the function of the morpheme *le* following the post-VP deictic verb. When the post-VP deictic verb is *lai* 'come', it has to co-occur with *le*:

(53) Laowang kan dianying lai   *(le).
      Laowang see movie   come   LE
      'Laowang has come to see the movie.'

According to Li and Thompson (1981), the morpheme *le* can be (1) the aspectual marker showing perfective, (2) the sentence-final particle indicating 'currently relevant state', or (3) both of them. When it is an aspectual marker, it affixes to the main verb, as in (54a); when it is a sentence-final particle, it appears at the end of the sentence, as in (54b):

(54) a. Laowang mai-le   hua.
          Laowang buy-Perf flower
          'Laowang bought flowers.'

      b. Laowang mai hua   le.
          Laowang buy flower Prt
          'Laowang has bought flowers.'

When the verb appears directly before a sentence-final *le*, the morpheme *le* may have both meanings:

(55) zhe-ge   beizi huai le.
      this-CL cup   break Perf/Prt
      'This cup is broken.'   (Li and Thompson, 1981:251)

Note that it is not possible to have two *le*s at the end of the sentence, assigning only one function to each of them:[9]

(56) *zhe-ge beizi huai-le le.
      this-CL cup   break-Perf Prt
      'This cup is broken.'

As pointed out by Chao (1968:247), '[i]n such cases, Mandarin always avoids a repetition of the same syllable by way of haplology.'

Regarding the post-VP deictic verb, since it directly precedes *le*, *le* may have both meanings. While it is not easy to tell which element is necessary for this construction in the case of *le*, we can use another aspectual marker to test.

Consider the following example:

(57) Laowang yiqian kan dianying lai-guo   (le).
      Laowang before see movie   come-Exp Prt
      'Laowang has come to see the movie before.'

In (57), the aspectual marker is the experiential marker *-guo*. The sentence-final *le* is clearly a particle rather than an aspectual marker. When the particle is removed, the sentence remains grammatical, as the parentheses show.[10] How-

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[9]When Sybesma (1999) argues that the aspectual marker *-le* should differ from the sentence-final particle *le*, which he terms verb-*le* and sentence-*le* respectively, one of the arguments is the following sentence:

(i)   ta lai   le.
      he come LE
      'He has come.'
      OR: 'He is coming.'   (Sybesma, 1999:65)

He argues that the ambiguity of the sentence suggests that there are two *le*s. However, while I agree with him that the two *le*s should be treated differently, the ambiguity in (i) does not stem from *le* being either verb-*le* or sentence-*le*. Rather, it is due to the endpoint being implied but not entailed in Mandarin Chinese, as we saw in Chapter 1. Therefore, following Li and Thompson (1981), I assume that when *le* appears at the end of the sentence and directly follows the verb at the same time, it is possible for *le* to contain both meanings, as in (55).

[10]Zhang (2003) and Hsu (2009) regard *le* following the post-VP deictic verb as a sentence-final particle rather than an aspectual marker. To Zhang, when the experiential marker *-guo* follows the post-VP deictic verb, the sentence is ungrammatical:

(i)   Lao Li [kan luxiang] lai-le/*guo.
      Lao Li see video   come-Perf/Exp
      'Lao Li has come to watch a video.'   (Zhang, 2003:188)

However, this kind of sentence is acceptable to my informants. I believe that it is due to the requirement of a context for some native speakers. While *le* containing both aspectual and

ever, if we remove the aspectual marker *-guo* after the post-VP deictic verb, the sentence becomes ungrammatical:

(58)   Laowang congmei tanwang ni   lai-*(guo).
       Laowang never   visit   you come-Exp
       'Laowang has never come to visit you before.'

This shows that what causes the ungrammaticality of the sentence with a post-VP deictic verb when omitting *le*, as in (53), is the lack of an aspectual marker rather than a sentence-final particle. However, when *le* is not omitted, the sentence not only means that the subject has arrived at the speaker's location, the function of the perfective aspect *-le*, but it is also related to the current state, the function of the sentence-final particle *le*. Therefore, I argue that when the sentence-final *le* is preceded by the post-VP deictic verb, it is both the aspectual marker and the sentence-final particle, the same as *le* in (55).

Since the post-VP deictic verb precedes an aspectual marker, it may be a lexical verb. If it is a lexical verb, it should be able to take a locative argument. However, as Ke (1991) argues, the post-VP deictic verb cannot take a locative argument:

(59)   *Laowang kan dianying lai-le   zheli.
        Laowang see movie   come-Perf here
        'Laowang has come here to see the movie.'

Due to it being unable to take a locative argument, the post-VP deictic verb should not be treated as a lexical verb. Then, the verb in the verb phrase should function as the main verb.

However, if it is the main verb, topicalization of the object should be possible:

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particle functions is related to the current state, thereby one being able to think of a context easily, *-guo* needs more information to make the sentence sound natural. Without a context, native speakers cannot think of a situation uttering this kind of sentence quickly. Therefore, when comparing *-le* and *-guo*, some of them tend to judge the latter as ungrammatical.

  A possible situation to utter (57) would be when someone asks whether it is Laowang's first time to be here, and we answer that he has been here to see the movie before, showing that it is not his first time to be here. As for (58), a possible situation would be someone getting injured and staying in hospital for a long time. However, Laowang, as a close friend of the injured person, didn't visit him in hospital at all. When we complain to him about Laowang's not visiting, we would utter (58).

(60) a. Laowang kan dianying lai   le.
          Laowang see movie   come Perf/Prt

      b. *dianying$_i$ Laowang [kan t$_i$] lai   le.
          movie   Laowang see   come Perf/Prt
          'Laowang has come to see the movie.'

As can be seen in (60b), the complement of the verb *kan* 'see' cannot be topi-calized. If *kan* 'see' is the main verb, why can't the object be topicalized? It is generally assumed that movement out of a moved phrase is forbidden. If *kan* 'see' is the main verb but the object it selects cannot be topicalized, it is possible that this verb phrase has moved from its base position, thereby further movement of the object being forbidden.

Compare (61) with (49a), repeated below:

(61) Laowang lai   kan dianying le, Laoli ye   lai   kan ~~dianying~~ le.
      Laowang come see movie   Prt Laoli also come see movie   Prt
      'Laowang has come to see the movie, and so has Laoli.'

(49a) *Laowang kan dianying lai   le, Laoli ye   kan ~~dianying~~ lai   le.
       Laowang see movie   come Prt Laoli also see movie   come Prt
       'Laowang has come to see the movie, and so has Laoli.'

We have seen that under the *ye*-V variant of the VP-ellipsis, what is elided is VP. This makes the lowest element, the object, become null. In (61), the object *dianying* 'movie' is in the Spec,VP, which is lower than the pre-VP *lai* 'come' and the main verb *kan* 'see'. When it becomes null, the sentence is still grammatical. In (49a), if the object *dianying* 'movie' is also in its merge position, omitting the object should not cause ungrammaticality. The ungrammaticality of (49a) suggests that the verb phrase *kan dianying* 'see the movie' has moved from its base position so that ellipsis of the VP constituent cannot apply. As a consequence, the object in (49a) cannot be null.

Compare sentences with the pre-VP deictic verb to those with the post-VP deictic verb:

(62) a. Laowang lai   tanwang ni   le.
          Laowang come visit   you Prt

      b. Laowang tanwang ni   lai   le.
          Laowang visit   you come Perf/Prt
          'Laowang has come to visit you.'

In addition to the verb phrase in sentences with the post-VP deictic verb having moved from its base position, it seems to me that when the speaker utters sentences with the pre-VP deictic verb, as in (62a), the statement is neutral; when the speaker says sentences with the post-VP deictic verb, as in (62b), the speaker focuses more on the verb phrase. For example, the speaker may say (62a) to the hearer to simply show that Laowang has come. When the speaker wants to focus on the fact that Laowang visits the hearer, he may utter (62b). Imagine a context where Laowang visits the hearer very often. When the speaker sees Laowang come again, he is more likely to utter (62a). In this context, (62b) does not sound as natural as (62a). By contrast, if the context is that Laowang never comes to visit the hearer before, and he suddenly shows up. When the speaker sees Laowang come, he may utter (62b). In the former context, the speaker will not be surprised to see Laowang, so the neutral expression is preferred; in the latter context, the speaker may be surprised to see Laowang, so he may utter (62b) to focus on the fact that Laowang visits the hearer.

If the verb phrase in sentences with the post-VP deictic verb has moved, where does it move? Following Belletti (2004), I assume that there is a lower Focus Phrase below negation. Belletti proposes that 'the area immediately above VP displays a significant resemblance to the left periphery of the clause, the so-called CP area... In particular, a clause-internal Focus position, surrounded by Topic positions, is identified in the low part of the clause' (Belletti, 2004:17). She argues that in Free Inversion in Italian, the postverbal subject has moved to the lower Spec,FocP. To show that the subject does not move as high as the one in Stylistic Inversion in French, where the subject moves to a position in the C domain and the remnant IP moves higher than the subject, she examines NPI subjects in Free Inversion in Italian, as shown below:

(63)　　a.　Non parlerà alcun linguista.
　　　　　　will not speak any linguist
　　　　b.　*Alcun linguista non parlerà.
　　　　　　any linguist will not speak　　　　　　(Belletti, 2004:23)

In (63), the NPI element needs to be licensed by the negative marker *non*. If Free Inversion in Italian is like Stylistic Inversion in French, *non* cannot c-command the postverbal subject *alcun linguista* 'any linguist', and (63a) should be ungrammatical. Since it is a grammatical sentence, Belletti (2004) argues that this shows that the postverbal subject in Free Inversion in Italian is low, which she proposes to move to the lower Spec,FocP, a position that is c-commanded by negation. For

our purpose, we assume that, in Mandarin Chinese, the verb phrase in sentences with the post-VP deictic verb has moved to the lower Spec,FocP, which is below negation and above the deictic verb.

3.2.1 Proposal

I propose that in sentences with a post-VP deictic verb, the post-VP deictic verb is a functional head in the same position as the pre-VP deictic verb, and the verb phrase preceding the deictic verb undergoes movement to the lower Spec,FocP. The representation of (64) can be schematized as (65):

(64)   Laowang kan dianying lai   le.
           Laowang see movie   come Perf/Prt
           'Laowang has come to see the movie.'

(65)
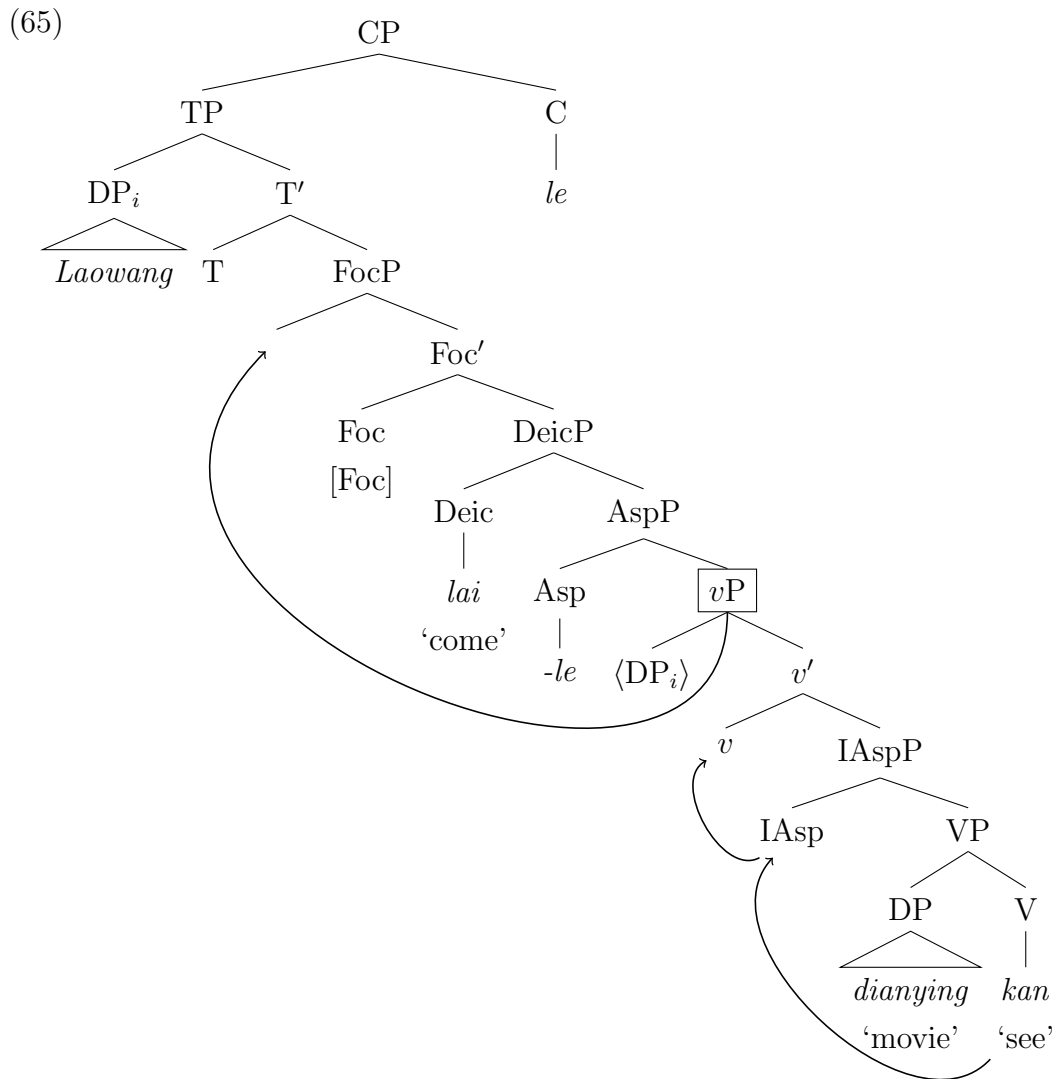
In (65), the verb *kan* 'see' selects the object *dianying* 'movie', which merges in the Spec,VP. The IAsp head merges with VP and calculates its telicity. When *v* is merged, the verb *kan* 'see' undergoes cyclic head movement to *v*. The subject Laowang is merged in the Spec,*v*P. The perfective aspectual marker *-le* is in Asp and the deictic verb *lai* 'come' is in Deic. When the phase head C is merged, its features are inherited by the nonphase heads. The Agree feature on T attracts the subject Laowang to move from the Spec,*v*P to the Spec,TP, and then the [Foc] feature on Foc attracts the focused element, *v*P, to move to its specifier position. The sentence-final particle *le* is in C. At the end of the sentence, the aspectual marker *-le* and the sentence-final particle *le* are next to each other. Since two functional heads with exact pronunciation cannot be adjacent, one is deleted at PF, making only one *le* at the end of the sentence but with two meanings.

Here comes a question. Why can't the aspectual marker *-le* affix to the main verb *kan* 'see'? In the phase theory, movement is driven by phase heads; therefore, the checking requirement on Asp should be inherited from C. In other words, the checking requirement does not occur until C is merged, passing the feature to Asp. Checking takes place in parallel: the subject moves to the Spec,TP to check the Agree feature, *v*P moves to the Spec,FocP to check the [Foc] feature, and the aspect feature on Asp is checked by a verb. However, the aspectual marker cannot be checked by the main verb *kan* 'see' due to the deictic verb *lai* 'come' being an intervener when *v*P is in the lower Spec,FocP. Despite the fact that *lai* 'come' in Deic cannot take a locative argument, its meaning is the same as when *lai* 'come' is used as a lexical verb, that is, physical movement of an object toward the speaker. Therefore, *lai* 'come' in Deic retains some of the verbal properties, which makes the aspectual marker be able to agree with it. As a consequence, the aspectual marker does not affix to the verb in the verb phrase but rather appears after the post-VP deictic verb, such as the aspectual marker *-guo* in (66). In this example, *-guo* cannot directly follow the main verb *kan* 'see' (66a) and must directly follow the post-VP deictic verb (66b).

(66) a. *Laowang yiqian kan-guo dianying lai   le.
          Laowang before see-Exp movie   come Prt

      b. Laowang yiqian kan dianying lai-guo   le.
          Laowang before see movie   come-Exp Prt
          'Laowang has come to see the movie before.'

In terms of topicalization of the object being forbidden in this word order, the analysis seems to contradict the statement that an element cannot move out

of a moved phrase. I argue that this statement is simply descriptive from the surface and cannot be accounted for by only one rule. In the case of the subject island constraint, the element within the subject cannot move out of the subject. According to Chomsky (2008), whether the subject island is obviated or not is associated with phases. Consider the following examples, which are taken from Chomsky (2008:147):

(67)   a.   It was the CAR (not the TRUCK) of which [they found the (driver, picture)]

           b.   Of which car did [they find the (driver, picture)]?

(68)   a.   *It was the CAR (not the TRUCK) of which [the (driver, picture) caused a scandal]

           b.   *Of which car did [the (driver, picture) cause a scandal]?

When extraction is out of the object, as in (67), the sentence is grammatical; when extraction is out of the subject, as in (68), the sentence is ungrammatical. This seems to suggest that extraction out of the subject, which has moved from the Spec,vP to the Spec,TP, is forbidden. However, (69) shows that it is not always illegitimate to extract an element from the subject:

(69)   a.   It was the CAR (not the TRUCK) of which [the (driver, picture) was found]

           b.   Of which car was [the (driver, picture) awarded a prize]?
                (Chomsky, 2008:147)

The base position of the subject *the (driver, picture) of which* in (69) differs from that in (68). In (69), *the (driver, picture) of which* is not merged in the Spec,vP but in the complement of v. As we saw in Chapter 1, unaccusative/passive v is not a phase head. Therefore, in (69), when C is merged, the DP *the (driver, picture) of which* is still accessible. The [wh] feature on C raises *of which* to the Spec,CP and the Agree feature on T, inherited from C, raises the remnant DP to the Spec,TP. In the case of (68), where v is a phase head, Chomsky (2008) argues that despite the fact that the external argument is accessible to the higher phase head, there is a cost to extract the element in it. While it looks like *of which* in both (68) and (69) is extracted from the subject in the Spec,TP, *of which* is in fact extracted from its base position. It is the difference of the base position and different v that distinguishes the ungrammatical (68) from the grammatical (69).

In our example, the object should be able to move to the Spec,vP by the EPP feature and later raise to the Spec,CP by the [Top] feature on C. Therefore, the reason of its ungrammaticality should be independent from the phase theory. It seems to me that the reason may be due to trace being too weak to be focused. If the object first moves to the Spec,vP, when C is merged, what is focused is only the verb *kan* 'see'. However, since sentences with the post-VP deictic verb focus on the event, the object must be included in the phrase that moves to the lower Spec,FocP. If the object first moves to the Spec,vP, the base position of the object is only a trace, which is too weak to be focused. Thus, in sentences with the post-VP deictic verb, the object cannot be topicalized.

This structure accounts for why negation appears directly before the verb phrase as opposed to the post-VP deictic verb, as Ke (1991) claims:

(70)   Laowang mei kan dianying lai-guo.
        Laowang not see movie   come-Exp
        'Laowang has never come to see the movie before.'

This is due to the verb phrase moving to a position between NegP and DeicP. Therefore, negation will not directly precede the deictic verb.

Let us re-examine Zhang's (2003) arguments in (42b) and (45), repeated below:

(42b)   Da Bao yijing   [kan luxiang] lai   le.
        Da Bao already see   video   come Prt
        'Da Bao already came to watch a video.'
        not: 'Da Bao already watched a video.'   (Zhang, 2003:186)

(45)   a. Lao Li [kan luxiang] lai   le, Lao Gao ye   lai   le.
            Lao Li see   video   come Prt Lao Gao also come Prt

        b. *Lao Li [kan luxiang] lai   le, Lao Gao ye   [kan luxiang] le.
            Lao Li see   video   come Prt Lao Gao also see   video   Prt
            'Lao Li has come to watch a video, so has Lao Gao.'
            (Zhang, 2003:187)

While the surface position of the verb phrase is higher than the post-VP deictic verb, it moves to the lower Spec,FocP only for emphasizing, which I believe to be similar to adjunction. Therefore, in (42b), *yijing* 'already' scopes over the deictic verb rather than the verb phrase. On the other hand, in (45), under the *ye*-Aux variant of the VP-ellipsis, the deictic verb retains after vP is elided. It cannot be elided whether or not the verb phrase moves to the lower Spec,FocP. Thus, the

deictic verb cannot become the null form while retaining the verb phrase.

3.3 Two deictic verbs with VP

We have examined both the pre-VP and the post-VP deictic verb and argued that the deictic verb in both positions is a functional head, the position of which is higher than AspP and lower than ModP. The deictic verb appears in the post-VP position due to movement of the verb phrase. When the pre-VP and the post-VP deictic verb co-occur, it cannot be one deictic verb with two copies, since, in our analysis, what undergoes movement is the verb phrase rather than the deictic verb.

If we examine the distributions of the verb in the verb phrase and both deictic verbs, they behave the same as those in sentences with only pre-VP or only post-VP deictic verb. First, like sentences with the post-VP deictic verb, the aspectual marker has to follow the post-VP deictic verb (71a) and cannot affix to the verb in the verb phrase (71b):

(71)   a.   Laowang lai   kan dianying lai   le/guo.[11]
               Laowang come see movie   come Perf/Exp

        b. *Laowang lai   kan-le/guo   dianying lai   le.
               Laowang come see-Perf/Exp movie   come Prt
               'Laowang has come to see the movie (before).'

Second, like sentences with the post-VP deictic verb, the post-VP deictic verb cannot take a locative argument:

(72)   *Laowang lai   kan dianying lai-le/guo   zheli.
        Laowang come see movie   come-Perf/Exp here
        'Laowang has come here to see the movie (before).'

Finally, like sentences with the pre-VP deictic verb, the pre-VP deictic verb cannot be affixed by an aspectual marker:

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[11]Some native speakers may not be able to think of a situation to utter this sentence quickly when the aspectual marker is *-guo*. A possible situation would be someone asking whether it is Laowang's first time to be here, and the speaker answers that Laowang has been here to see a movie before, showing that it is not his first time to be here.

(73) *Laowang lai-le/guo   kan dianying lai   le.[12]
        Laowang come-Perf/Exp see movie   come Prt
        'Laowang has come to see the movie (before).'

If we treat the post-VP deictic verb with and without the co-occurrence of the pre-VP deictic verb as the same head, then, the remaining problem is doubling of the deictic verb. Before we investigate further, let us first examine another type of pre-VP deictic verb.

3.3.1 Nonspatial pre-VP deictic verbs

In Zhang's (2003) and Hsu's (2009) analyses, they treat two types of pre-VP deictic verbs as the same functional head. One is that the pre-VP *lai* 'come' and *qu* 'go' are interchangeable without meaning change, which belongs to Tang's (1979) non-deictic use. The other is that their meanings are the opposite in terms of direction, which is Tang's auxiliary use. When Zhang (2003) argues that the pre-VP deictic verb is a functional head due to its weak semantics, she cites examples from Lu (1985:31) to show that changing the deictic verb does not change the meaning:[13]

(74)   a.   ta ba ren   dou dezui-le,   wo lai/qu   pei bushi   qu?
            he BA people all offend-Perf I   come/go offer apology go
            'He offended all the people and I offer an apology?'

       b.   zhe shir   hai dei you nin lai/qu   gen dahuor   shuo qu.
            this matter still must by you come/go to   everyone speak go
            'About this matter, it still needs to be you to tell everyone.'

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[12]Recall that in Chapter 2, we argued that whether or not the aspectual marker may directly appear after the pre-VP deictic verb is the way to distinguish the deictic verb being a lexical verb or a functional head. When the pre-VP deictic verb cannot be affixed by the aspectual marker, it is a functional head, as in (ia); when it can be affixed by the aspectual marker, it is a lexical head, as in (ib):

(i)   a.   *Laowang lai-le   kan dianying.
            Laowang see-Perf see movie
            'Laowang came to see the movie.'
       b.   Laowang lai-le   zheli kan dianying.
            Laowang come-Perf here see movie
            'Laowang came here to see the movie.'

[13]In fact, it is another argument against Zhang's (2003) and Hsu's (2009) chain analyses. If the pre-VP *lai* 'come' and *qu* 'go' can be used interchangeably in (74), the post-VP deictic verb cannot form a chain with the pre-VP deictic verb via head movement; both deictic verbs cannot have the same tail either. Otherwise, it would be impossible for *lai* 'come' to be in the pre-VP position but *qu* 'go' to be in the post-VP position.

However, it is questionable whether the pre-VP deictic verb with and without the obvious spatial meaning should be analyzed as the same functional head. First, the pre-VP deictic verb without the spatial reading, which Zhang (2003) claims to have weak semantics, is clearly distinct from that with the obvious spatial reading: removal of the pre-VP deictic verb does not change the meaning of the sentence in the former yet it does in the latter, as illustrated below:

(75)   a.   ni   lai/qu   xiang banfa chuli.
                 you come/go think way   handle

         b.   ni   xiang banfa chuli.
                 you think way   handle
                 'You think of a way to handle (this).'

(76)   a.   Laowang lai   chi fan le.
                 Laowang come eat rice Prt
                 'Laowang has come for a meal.'

         b.   Laowang chi fan le.
                 Laowang eat rice Prt
                 'Laowang has eaten.'

In (75a), the pre-VP deictic verb does not have the spatial reading. Whether it appears in the sentence or not does not affect the meaning, as the lack of 'come' or 'go' in the English translation shows. By contrast, in (76a), *lai* 'come' has the spatial reading, which can be seen in the English translation 'come'. When *lai* 'come' is removed from the sentence, as in (76b), the meaning has changed. Specifically, in (76a), Laowang has come to the speaker, but the eating event may not have occurred yet whereas in (76b), the eating event has taken place. Therefore, contrary to Zhang's (2003) argument, the pre-VP deictic verb does not always have weak semantics.

Second, as Ke (1991) points out, the pre-VP deictic verb with weak semantics cannot take a locative argument. The example is from Ke (1991:23-24) with slight modification.

(77)   a.   mama qu (shichang) mai cai   le.
                 mother go market   buy vegetable Prt
                 'Mother went (to the market) for grocery shopping.'

         b.   Zhangsan bu hui qu (*taibei) jijiao zhe-zhong shi.
                 Zhangsan not will go   Taipei mind this-kind thing
                 'Zhangsan will not mind such kind of thing.'

Note that we have argued that the pre-VP deictic verb with and without a locative argument should not be treated as the same due to the position of the aspectual marker. Example (77) simply shows that the pre-VP deictic verb with the spatial reading is distinct from that without the spatial reading. Therefore, arguing against Zhang (2003) and Hsu (2009), I agree with Ke (1991) on treating the two pre-VP deictic verbs differently.

While the spatial and the nonspatial *qu* 'go' are difficult to distinguish in some cases, the connection between the spatial and the nonspatial *lai* 'come' is not easy to observe. Some researchers even analyze them as two distinct uses (e.g., Lin, 1977; Tang, 1979). Thus, in the following, I will mainly examine *lai* 'come' to make the distinction clearer.

Consider the following example:

(78)   women lai   wan pai.
        we   come play card
        'Let's play cards.'
        'We came to play cards.'

Example (78) has two interpretations. In the first interpretation, the subject *women* includes the listener (i.e., inclusive *we*); in the second interpretation, the subject does not include the listener (i.e., exclusive *we*). The contrast is obvious when we add a different sentence-final particle to the sentence:

(79)   a. women lai   wan pai ba.
            we   come play card Prt
            'Let's play cards.'

        b. women lai   wan pai le.
            we   come play card Prt
            'We have come to play cards.'

According to Li and Thompson (1981), the sentence-final particle *ba* shows 'solicit agreement' whereas the particle *le* indicates 'currently relevant state'. In (79a), with a *ba* particle, the speaker is asking the listener to agree to play together. The subject is inclusive *we* and the pre-VP *lai* 'come' does not have the spatial reading. By contrast, in (79b), with a *le* particle, the speaker is telling the listener of his coming with other people for playing cards. The subject is exclusive *we* and the pre-VP *lai* 'come' has the spatial reading.

As can be seen, spatial and nonspatial *lai* 'come' not only differ in meanings (one

with spatial meaning and one without it) but also affect the interpretation of the subject (exclusive vs. inclusive *we*). Tang (1979) treats the nonspatial *lai* 'come' as a non-deictic auxiliary verb and claims that it indicates suggestion or persuasion. Similarly, Huang (1978) argues that the speaker performs the action of suggesting (in the case of the first person subject) or requesting (in the case of the second person subject) and terms it 'illocutionary *lai*', which 'signal[s] the imminent performance by the subject of an act identified by the verb' (Huang, 1978:55). Lin (1977) calls it 'modal *lai*' and states three of its characteristics. First, the subject can only be the first person or the second person:

(80) a. wo lai chang ge.
          I come sing song
          'I'll sing songs.'

      b. Ahua lai chang ge.
          Ahua come sing song
          'Ahua came to sing songs.'

Lin (1977) argues that when the subject is the first or the second person, *lai* 'come' is modal *lai*; when the subject becomes the third person, *lai* 'come' turns to the spatial meaning. However, *lai* 'come' in (80) in fact can have both the spatial and the nonspatial meaning:

(81) a. A: ni zenme hui zai zheli?
              you how will at here
              'How come you are here?'

          B: wo lai chang ge.
              I come sing song
              'I came to sing songs.'

      b. Ahua lai chang ge, ni lai ban-zou.
          Ahua come sing song you come accompany-play
          'Ahua sings, and you play the musical instrument.'

In (81a), the pre-VP *lai* 'come' following the first person has the spatial reading whereas in (81b), the pre-VP *lai* 'come' following the third person has the nonspatial reading. Therefore, regardless of whether the subject is the first/second person or the third person, the pre-VP *lai* 'come' can have two readings. It is not the case that the nonspatial reading can only be used with the first or the second person subject. We can only say that, without a proper context, in some sentences, the pre-VP *lai* 'come' tends to be interpreted as nonspatial, prior to spatial.

Note that it does not mean that when the subject is the third person, we always obtain the spatial meaning first. Consider the following example:

(82)   Laowang lai   fenxi   zhe-ge juzi.
          Laowang come analyze this-CL sentence
          'Laowang will analyze this sentence.'

Despite the fact that the subject is the third person, without a context, the pre-VP *lai* 'come' in (82) tends to be interpreted as nonspatial. It seems that apart from the subject, the verb also affects the first interpretation we obtain.

The second characteristic stated by Lin (1977) is that modal *lai* is only used in affirmative. He claims that when it appears in a negative or an interrogative sentence, the sentence becomes awkward or *lai* 'come' becomes the spatial reading. The sentence and the judgment in (83a) are from Lin (1977:15).

(83)   a. ?women bu lai   chang ge.
              we   not come sing   song
              'We will not sing songs.'

        b. nimen lai   chang ge   ma?
              you   come sing   song Q
              'Do you come to sing songs?'

According to Lin (1977), (83a) is awkward and *lai* 'come' in (83b) can only be interpreted as spatial movement. However, with a proper context, *lai* 'come' in both sentences can have the nonspatial meaning. Consider a situation where a band attends a TV show. When the host interviews them, they say:

(84)   jintian women bu lai   change ge,   er shi yao lai   tiaowu.
          today we   not come sing   song but be will come dance
          'Today we are not going to sing but to dance.'

In (84), *lai* 'come' does not have the spatial meaning; rather, it indicates what they are going to do in the imminent future. Consider another situation where the band attends another TV show to promote their album. After a short interview, the host says:

(85)   nimen yao lai   chang ge   le ma?
          you   will come sing   song Prt Q
          'Are you ready to sing a song?'

In (85), *lai* 'come' does not have the spatial meaning either. As shown above, the pre-VP *lai* 'come' can have both the spatial and the nonspatial meaning in negative and interrogative sentences, although more information is needed in order to obtain the nonspatial reading, compared with the spatial reading.

The third characteristic of modal *lai* is that it is only used in the present (or immediate future) tense. To Lin (1977), the pre-VP *lai* 'come' in the past tense can only have the spatial meaning:

(86)   zuotian   wo lai   chang ge.
         yesterday I   come sing   song
         'I came to sing songs yesterday.'

However, Hsu (2009) argues that the nonspatial reading can be obtained even in the past tense:

(87)   zuotian   you Lisi lai   jueding   shengfu.
         yesterday let   Lisi come determine win or loss
         'Yesterday Lisi determined which side won.'[14]   (Hsu, 2009:12)

In this example, Hsu (2009) adds the word *you* 'let, by' before the subject Lisi. Tang (1979) claims that the word *you* 'let, by' often appears before the subject in sentences with the non-deictic auxiliary *lai* 'come'.[15] However, without *you* 'let, by', the nonspatial reading can still be obtained in the past tense:

(88)   Lisi shuo zuotian   shi ta lai   jueding   shengfu.
         Lisi say   yesterday be he come determine win or loss
         'Lisi said that yesterday it was he that determined which side won.'

What is more, in addition to the past tense and the imminent future, it can also be used in the farther future:

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[14]Hsu translates this sentence as 'Yesterday Lisi came to determine which side will be the winner.' Despite the fact that he argues *lai* 'come' in this sentence as nonspatial, he translates both spatial and nonspatial as 'come', which makes it difficult to distinguish the two uses from his translation. Therefore, I change the translation to make it easier to distinguish.

[15]While Hsu treats *you* as a verb, translated as 'let', Tang regards it as a preposition, translated as 'by'. It is not surprising to see the difference here since prepositions in Mandarin Chinese are derived from verbs and are called 'coverbs' by some researchers (e.g., Tang, 1979; Li and Thompson, 1981). While some coverbs are more preposition-like, such as *wei* 'for', other coverbs are more verb-like, like *yong* 'use, with'.

(89)　mingnian wo lai　zhuchi zhe-ge　huiyi.
　　　next year I　come hold　this-CL meeting
　　　'I'll host this meeting next year.'

As we can see, contrary to Lin's (1977) arguments, while the nonspatial pre-VP *lai* 'come' prefers to be in the present affirmative with the first or the second person subject, it can also be used with the third person subject, the past tense, negation, and in an interrogative sentence.

If we examine the interaction between the nonspatial pre-VP *lai* 'come' and different aspectual verb classes, it seems that the nonspatial pre-VP *lai* 'come' can be used only with activity and accomplishment:

(90)　a.　*Ahua lai　zhidao fasheng de　yuanyin.　　　(state)
　　　　　Ahua come know　happen DE reason
　　　　　'Ahua will know the reason why it happened.'

　　　b.　Ahua lai　dasao.　　　　　　　　　　　(activity)
　　　　　Ahua come clean
　　　　　'Ahua will do the cleaning.'

　　　c.　Ahua lai　gai　na-dong fangzi.　　　　　(accomplishment)
　　　　　Ahua come build that-CL house
　　　　　'Ahua will build that house.'

　　　d.　*Ahua lai　yishidao shiqing de　yianzhongxing. (achievement)
　　　　　Ahua come realize　thing　DE seriousness
　　　　　'Ahua will realize how serious it is.'

It appears that the nonspatial pre-VP *lai* 'come' is only compatible with durative events; in addition, the durative events have to be non-static. Since the subject of activity and achievement events are usually agent, the subject of sentences with a nonspatial pre-VP *lai* 'come' is usually found agentive.

As far as the category is concerned, the nonspatial pre-VP *lai* 'come' is obviously not a lexical verb as it has already lost the spatial interpretation. Therefore, I argue that it is a functional head. In terms of its distribution, like the spatial pre-VP deictic verb, it does not behave like a modal:

(91)　a.　ni　yinggai keyi haohaode jieshi.
　　　　　you should can well　　explain

　　　b.　*ni　yinggai haohaode keyi jieshi.
　　　　　you should well　　can explain
　　　　　'You should be able to explain it well.'

(92) a. ni   yinggai lai   haohaode xi   ge zao.
          you should   come well   wash CL bath

      b. ni   yinggai haohaode lai   xi   ge zao.
          you should   well   come wash CL bath
          'You should take a good bath.'

Mandarin Chinese is a language allowing multiple modals. In (91), the manner adverb *haohaode* 'well' cannot precede the second modal *keyi* 'can', as illustrated in (91b). By contrast, in (92), the manner adverb *haohaode* 'well' can precede *lai* 'come', as shown in (92b). The two different distributions show that the nonspatial *lai* 'come' is not a modal.

As with the spatial pre-VP deictic verb, I propose that the nonspatial pre-VP *lai* 'come' is a functional head and (92) can be represented as below:

(93)
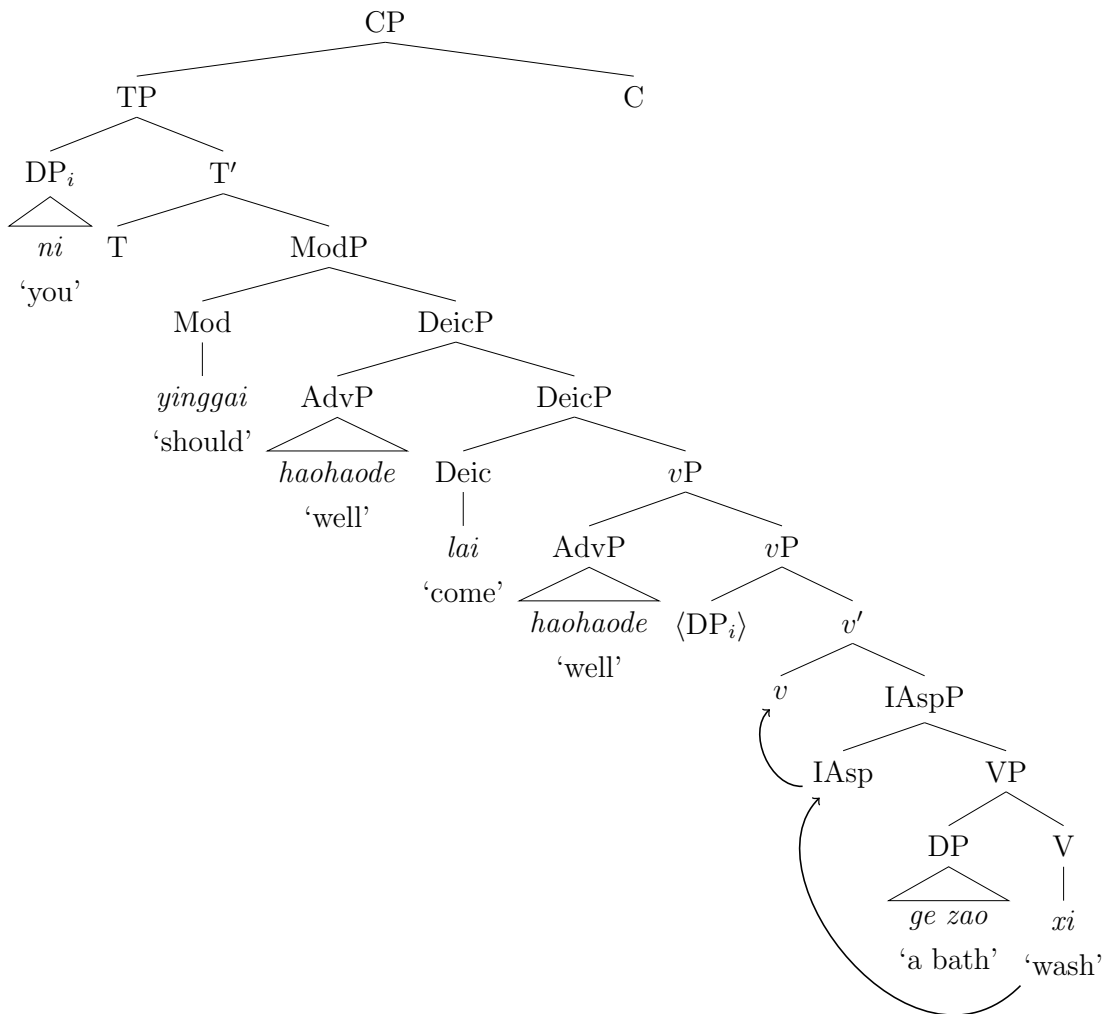
I assume that the nonspatial pre-VP *lai* 'come' is also in the head of a projection called Deictic Phrase (DeicP), like the spatial pre-VP deictic verb. This nonspatial pre-VP *lai* 'come' differs from modal in terms of the relative position with the manner adverb, as we saw in (91b) and (92b). The manner adverb follows the modal but precedes the nonspatial pre-VP deictic verb, indicating that DeicP is lower than ModP.

In addition, like the spatial pre-VP deictic verb, the nonspatial pre-VP deictic verb can also either precede or follow the manner adverb. When it precedes the manner adverb, as in (92a), the adverb adjoins to *v*P; when it follows the manner adverb, as in (92b), the adverb adjoins to DeicP. Since both the spatial and the nonspatial deictic verb seem to have the same distributions, a question arises regarding whether they are in the same position with different features or they are in different positions. This is what I am going to investigate in the next subsection.

3.3.2   Spatial vs. nonspatial pre-VP deictic verbs

When we think of the lexical item *lai* 'come', the first meaning that comes to our mind is spatial movement toward the speaker. This is when *lai* 'come' is used as a verb. In this usage, what precedes the verb is the moving object and what follows the verb is the goal of the movement:

(94)   Laowang lai   tushuguan le.
         Laowang come library   Prt
         'Laowang has come to the library.'

In (94), Laowang is the moving object and *tushuguan* 'library' is the goal of the movement, which is also the speaker's location.

In addition to the spatial movement, we have seen that the lexical item *lai* 'come' can also be used to show movement in time:

(95)   a.   lai   nian
              come year
              'next year'

         b.   zhexie nian lai
              these   year come
              'over the past few years'

112

When *lai* 'come' precedes some time units, such as *nian* 'year' in (95a), it refers to the time in the future; when *lai* 'come' follows an amount of time, like *zhexie nian* 'these years' in (95b), it indicates the time coming from the past to now. In other words, when *lai* 'come' precedes what it modifies, the phrase regards the future time and when it follows, the phrase concerns the past time.

If we consider the basic meaning of *lai* 'come', that is, movement toward the speaker, whose location is the endpoint of the movement, (95) can be schematized as below:

(96) a. *lai nian* 'next year':

endpoint

come

now   year

  b. *zhexie nian lai* 'over the past few years':

endpoint

come

these years   now
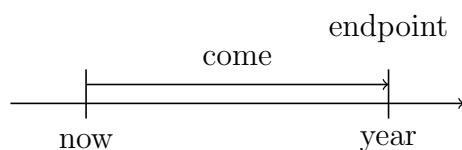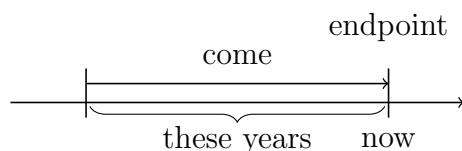
In (96a), what follows *lai* 'come' is the time unit *nian* 'year', which is seen as a destination set in the future, like the goal *tushuguan* 'library' in (94). The speaker conceptually locates himself at this destination. Since time moves from now to the future, the phrase has the future time reading. By contrast, in (96b), what precedes *lai* 'come' is an amount of time *zhexie nian* 'these years'. This period of time is the route of the movement. The endpoint of the route is the time *now*, which is the place where the speaker locates himself. What undergoes movement is also the time, similar to the moving object Laowang in (94). Since time moves from the past to now, the phrase has the past time reading.

The pre-VP *lai* 'come' can be analyzed in the same way. Following Shen (1996), who argues that the domain of the deictic verb in some situations may shift from spatial to mental, I propose that the deictic reading takes place in the mental domain. The concept can be represented as below:

(97) Pre-VP *lai* 'come':

endpoint

come

now   event
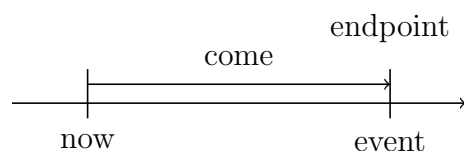
In the mental domain, what follows *lai* 'come' is an event denoted by the verb phrase. This event is seen as a destination set in the future, like the goal *tushuguan* 'library' in (94). The speaker conceptually locates himself at this event. When the sentence is uttered at the current time, *now*, the event has not occurred yet.[16] Since movement is from now to the future, the sentence designates an event happening in the (near) future.

I argue that the pre-VP *lai* 'come' is a viewpoint aspect, which sees the event represented by the verb phrase as a whole. This aspectual *lai* 'come' indicates the state prior to the occurrence of the event. The concept is similar to 'be going to' in English, which indicates that an event is going to happen in the near future. However, as Shen (1996) argues, the deictic verb is used in different domains in the two languages. While the domain is temporal in English, the domain is mental in Mandarin Chinese. Therefore, only *go* can be used in English, where the speaker is located at the beginning point of the movement (i.e., the time of utterance). By contrast, in Mandarin Chinese, the speaker can be located at either the endpoint of the movement (i.e., the time of the occurrence of the event) or the beginning point of the movement (i.e., the time of utterance). This explains why *lai* 'come' with weak semantics can be replaced by *qu* 'go' without changing the meaning, in that they both refer to the state prior to the occurrence of the event in spite of viewing from different angles (i.e., endpoint vs. beginning point).

In terms of the nonspatial pre-VP deictic verb, as Shen (1996) points out, it is subjective. I argue that the nonspatial pre-VP deictic verb is evaluative viewpoints in the sense of Clark (1974). When *lai* 'come' is used, the speaker is more involved; when *qu* 'go' is used, the speaker has neutral or negative feelings toward the event. Examining again the explanations of the meaning of the nonspatial pre-VP *lai* 'come' by previous researchers, Huang (1978:55) states that it 'signal[s] the imminent performance by the subject of an act identified by the verb.' Since *lai* 'come' in this use refers to the state prior to the occurrence of the event, the event has not happened yet, thereby the (imminent) future reading. With respect to suggestion and request meanings, they come from the speaker's point of view. When the subject of the event is the first person, that is, the speaker himself, to the speaker, it is his suggesting or offering doing some activity in the future to others. When the subject of the event is the second or third person, to the speaker, it is his requesting or persuading others to do some activity in the

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[16]Note that it is still possible that the event has occurred if the speaker is talking about an event happening in the past. However, if we examine the time of coming and the time of the event, coming always happens prior to the event.

future.

As far as the spatial pre-VP deictic verb is concerned, as Shen (1996) claims, it is objective. The objective reading comes from the spatial domain also needing to be considered. Slightly different from Shen, who claims that the goal of the spatial pre-VP deictic verb is the location where the event is going to happen (i.e., the endpoint in the spatial domain), I argue that the goal is the event itself (i.e., the endpoint in the mental domain), and movement has to first reach the concrete location before the event happens. In other words, in the case of the spatial pre-VP deictic verb, both the spatial domain and the mental domain need to be considered.

When the event time is later than the speech time *now*, as the diagram in (97) shows, the speaker locates himself at the event not happening yet in the mental domain, but his physical location may have already been at the endpoint in the spatial domain. As a consequence, it is possible for the subject of the event to have already arrived at the speaker's location but have not initiated the event yet. This explains why the event sounds like a purpose clause, as the event represented by the verb phrase has not occurred in both cases.

When the event time is earlier than the speech time, as schematized in (98), an aspectual marker and the aspectual *lai* 'come' can co-occur, as in (99):

(98)   Pre-VP *lai* 'come' in the past:
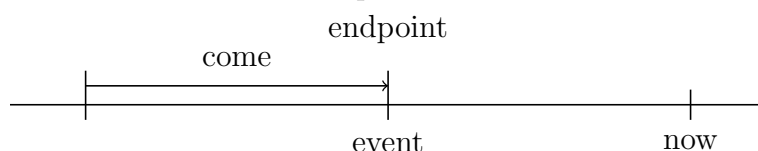
(99)   a. Laowang lai   mai-le   hua.
            Laowang come buy-Perf flower
            'Laowang came to buy flowers.'

        b. Laowang lai   mai-guo hua.
            Laowang come buy-Exp flower
            'Laowang has come to buy flowers before.'

In (99a), *-le* is a perfective marker and in (99b), *-guo* is an exepriential marker. When these aspectual markers appear in the sentence, it shows that the event has completed.[17] Then, what undergoes movement in both domains should have

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[17]According to Li and Thompson (1981), the perfective aspectual marker *-le* does not mean the completion of the event (i), nor does it mean the past tense (ii) (Li and Thompson, 1981:213,215):

reached the endpoint. In (98), when the event is viewed from the time of utterance *now*, the event has taken place. Therefore, the aspectual markers *-le* and *-guo* can be used. However, if we consider the relation between the pre-VP *lai* 'come' and the event, the event happens after movement, given that the event is regarded as the destination of the movement. It seems that the pre-VP *lai* 'come' only concerns the event, regardless of whether the event occurs in the past or in the future. When the event takes place in the past, the pre-VP *lai* 'come' still refers to the state prior to the occurrence of the event. Consequently, the pre-VP *lai* 'come' and the aspectual marker can co-occur and do not contradict each other.

As far as their positions are concerned, both the spatial and the nonspatial deictic verb are between ModP and *v*P. Then, are they in the same position but one with the spatial meaning and one without it? The answer seems to be negative, for the spatial and the nonspatial pre-VP deictic verb can co-occur:

(100)   women lai   qu chi fan ba.
         we   come go eat rice Prt
         'Let's go have a meal.'

In (100), both *lai* 'come' and *qu* 'go' are pre-VP deictic verbs. Since 'come' and 'go' have the opposite meaning in terms of direction, they cannot both be the spatial pre-VP deictic verbs. After all, one cannot move toward and away from somewhere at the same time. From the English translation in (100), we can see that only the pre-VP *qu* 'go' has the spatial reading. This shows that the pre-VP *lai* 'come' has the nonspatial reading. Therefore, with respect to the relative position of the two pre-VP deictic verbs, the nonspatial pre-VP deictic verb is higher than the spatial pre-VP deictic verb. The tree diagram of (100) can be represented as below:

(i)   qiang-shang gua-le   yi-fu   hua.
       wall-on   hang-Perf one-CL painting
       'On the wall hangs a painting.'

(ii)   mingtian wo jiu   kaichu-le   ta.
       tomorrow I   then expel-Perf him
       'I'll expel him tomorrow!'

In our example, the event will be interpreted as being finished. Therefore, for simplicity, we assume it means completion.

(101)

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                         CP
                    ╱         ╲
                  TP            C
               ╱      ╲          │
            DP_i       T'        ba
           ╱  ╲      ╱     ╲
        women   T      NDeicP
        'we'         ╱        ╲
                  NDeic        SDeicP
                    │        ╱       ╲
                   lai    SDeic       vP
                  'come'    │       ╱    ╲
                           qu   ⟨DP_i⟩    v'
                          'go'          ╱    ╲
                                       v      IAspP
                                            ╱      ╲
                                         IAsp        VP
                                                   ╱    ╲
                                                 DP       V
                                                ╱  ╲      │
                                              fan   chi
                                             'rice' 'eat'
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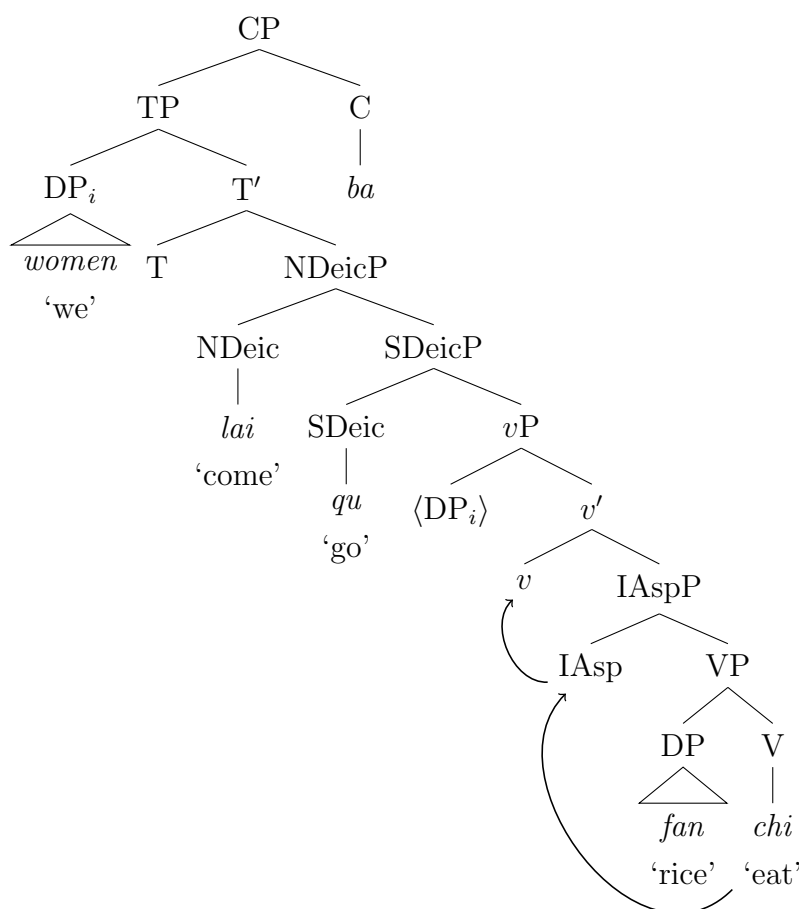
I propose that there are two Deictic Phrases and that the nonspatial and the spatial pre-VP deictic verb are viewpoint aspects in the head of Nonspatial Deictic Phrase (NDeicP) and Spatial Deictic Phrase (SDeicP) respectively. Both phrases are lower than ModP. Therefore, while the manner adverb follows the modal, it precedes the pre-VP deictic verb, whether spatial (40a) or nonspatial (92b). When the manner adverb follows the pre-VP deictic verb, it adjoins to either vP, as in (40b) and (92a), or AspP, as in (39a), depending on the absence or the appearance of the aspectual marker in the sentence.

Note that despite the fact that both NDeic and SDeic can co-occur, *lai qu* is the only possible combination. That is to say, there is no *lai lai*, *qu qu*, and *qu lai* pre-VP deictic verbs. For the first two combinations, I assume that functional heads with the exact same pronunciation cannot be adjacent for phonological reason in Mandarin Chinese, as we saw in (56), although further research is still needed.[18] For the third combination, *qu lai*, I assume that it is due to the asymmetries

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[18]Another example is from Lin (2011), who observes that the sentence-final particle *le* can appear either in the matrix clause or in the embedded clause, yet they cannot co-occur:

between *lai* 'come' and *qu* 'go'. The meaning of *qu* 'go' is moving away from the speaker. Therefore, only the beginning point of the route is focused. Whether the moving object is at which part of the route or whether it has arrived at the endpoint is unknown. By contrast, the meaning of *lai* 'come' is moving toward the speaker. What is focused is the route of the movement as well as the endpoint. In addition, it is also guaranteed that the moving object has left the beginning point (i.e., the meaning of *qu* 'go'). In other words, *lai* 'come' includes the concept of *qu* 'go', but not vice versa. When *lai* 'come' has the nonspatial reading and *qu* 'go' has the spatial reading (i.e., *lai qu*), *lai* 'come' shows moving toward the speaker, which implies that what undergoes movement has left the beginning point. The spatial *qu* 'go' also shows movement away from the beginning point. The two concepts do not contradict each other, so *lai qu* is grammatical. By contrast, when *qu* 'go' has the nonspatial reading and *lai* 'come' has the spatial reading (i.e., *qu lai*), *qu* 'go' only shows moving away from the beginning point, but the spatial movement has not reached the endpoint yet. However, the spatial *lai* 'come' shows that the physical position has reached the endpoint. Since the two concepts contradict each other, *qu lai* is ungrammatical.

After examining both the spatial and the nonspatial pre-VP deictic verb, now we are ready to propose an analysis for sentences with both the pre-VP and the post-VP deictic verb.

3.3.3 Proposal

I argue that both the pre-VP and the post-VP deictic verb are viewpoint aspects in functional heads and that the pre-VP deictic verb is in the NDeic head whereas the post-VP deictic verb is in the SDeic head. Example (102) can be represented as (103):

(i)   a.   Zhangsan zhidao na-jian mimi le.
            Zhangsan know that-CL secret Prt
            'Zhangsan has come to know that secret.'
    b.   Zhangsan zhidao [Lisi taozou le].
            Zhangsan know Lisi escape Prt
            'Zhangsan knows that Lisi has escaped.'
    c.   *Zhangsan zhidao [Lisi taozou le] le.
            Zhangsan know Lisi escape Prt Prt
            Intended: 'Zhangsan has come to know that Lisi has escaped.'   (Lin, 2011:56)

Lin states that he does not have explanation for this phenomenon. While aspectual deictic verbs differ from sentence-final particles, the restriction seems to be the same. For our purpose here, I simply assume that it is a phonological restriction and leave it for future research.

(102)   Laowang lai   kan dianying lai   le.
              Laowang come see movie   come Perf/Prt
              'Laowang has come to see the movie.'

(103)
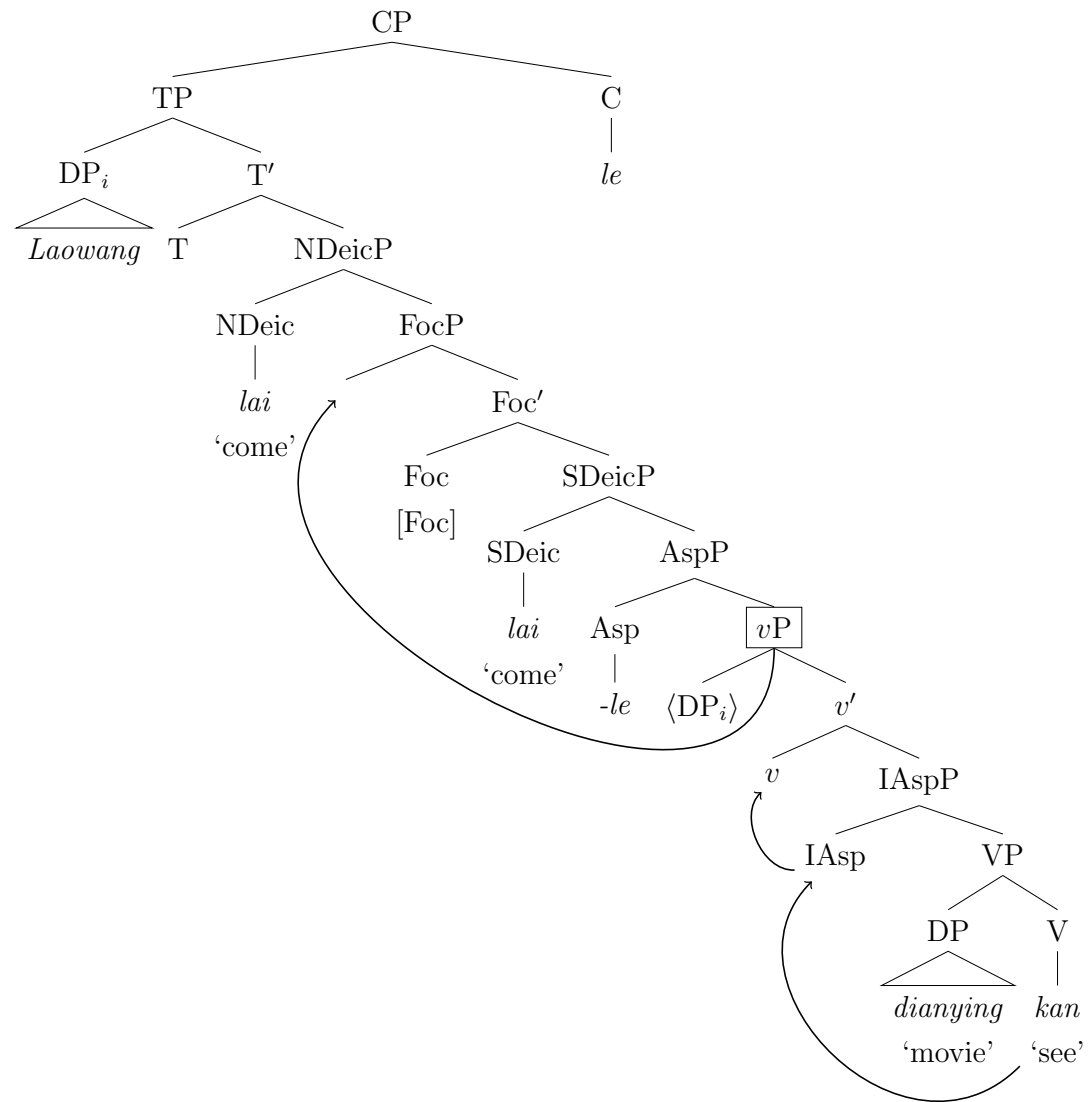
In (103), both aspectual deictic verbs head functional projections above AspP. The pre-VP deictic verb is in NDeic and the post-VP deictic verb is in SDeic. The Foc head is between the two aspectual deictic verbs. When the phase head C is merged, its features are inherited by the nonphase heads. The Agree feature on T triggers the subject to move from the Spec,vP to the Spec,TP; the [Foc] feature on Foc attracts the focused element, vP, to move to the Spec,FocP; and the feature on Asp is checked by a verb. Since the spatial *lai* 'come' intervenes between the aspect *-le* and the verb *kan* 'see' when vP is in the lower Spec,FocP, the aspect is not checked by the main verb *kan* 'see' but rather by the spatial

lai 'come'. Therefore, the verb *kan* 'see' in the verb phrase between the two deictic verbs cannot obtain an aspectual marker. At the end of the sentence, the aspectual marker *-le* in Asp and the sentence-final particle *le* in C are next to each other. Due to the two *le*s being unable to be adjacent, one is deleted at PF, making one *le* at the end of the sentence with two meanings.

Note that despite the fact that the general assumption is that the aspectual markers are in Asp, it does not mean that all the aspectual markers are in Asp. The progressive marker *zai*, which appears before the verb rather than affixing to it, can co-occur with the durative marker *-zhe*:

(104)   Laowang zai   hung-zhe ge.
          Laowang Prog hum-Dur song
          'Laowang is humming.'

There is no agreed analysis in terms of the aspectual markers and alternative analyses are proposed. For example, Sybesma (1999) argues that the aspectual markers *-le*, *-guo*, and *-zhe*, are resultative predicates, with *-le* being either a resultative predicate, End point *le* in his term, or being a head of a projection between the VP-shells, which he calls Realization *le*. Tsai (2008) proposes that there are three Aspect Phrases in the structure. The outer aspect, which is the general assumption for the aspectual marker, is for progressive *zai* and experiential *-guo*; the middle aspect, which is between the VP-shells, is for durative *-zhe* and perfective *-le*; and the inner aspect, which is bound with certain types of verbs, is for phase marker *-zhe* and complete aspect *-wan*. Examining these aspectual markers is beyond the scope of this thesis. For simplicity, I assume that the aspectual markers which follow the verb (i.e., *-le*, *-guo*, and *-zhe*) are in Asp, and the aspectual markers which precede the verb (i.e., progressive *zai* and the pre-VP deictic verbs) are not in Asp. Note that while the pre-VP deictic verb can co-occur with other aspectual markers like *-le* and *-guo*, it cannot appear with *zai*:

(105)   *Laowang lai   zai   baoyuan.
           Laowang come Prog complain
           'Laowang came to be complaining.'

Unlike the aspectual markers *-le* and *-guo*, which view the event as a whole, *zai* sees the internal interval of the event. The incompatibility may stem from the event with progressive *zai* not being viewed as a whole and thus failing to be the

destination for the pre-VP deictic verb. I leave the question whether *zai* is in the same position as one of the deictic verbs for future research.

The structure explains why when the pre-VP and the post-VP deictic verb co-occur, the sentence always has the spatial reading. We have seen that when there is only one pre-VP deictic verb, the interpretation of the sentence can be either spatial or nonspatial:

(106) wo lai   chang ge.
       I   come sing   song
       'I'll sing songs.'
       'I came to sing songs.'

However, when there is only the post-VP deictic verb, the reading has to be spatial:

(107) wo chang ge   lai   le.
       I   sing   song come Perf/Prt
       *'I'll sing songs.'
       'I have come to sing songs.'

When the sentence contains both the pre-VP and the post-VP deictic verb, the interpretation also has to be spatial:

(108) wo lai   chang ge   lai   le.
       I   come sing   song come Perf/Prt
       *'I'll sing songs.'
       'I have come to sing songs.'

If the pre-VP deictic verb is in NDeic and the post-VP deictic verb is in SDeic, it is reasonable that there is always spatial reading in the interpretation, as the post-VP deictic verb has the spatial meaning.

The structure also accounts for the impossibility of taking a locative argument for the post-VP deictic verb. We have examined that the spatial pre-VP deictic verb, which is in SDeic, cannot take a locative argument. If the post-VP deictic verb is a functional head in the same head, it is not surprising that it cannot take a locative argument either, given that it is a viewpoint aspect rather than a genuine verb:

(109) *wo lai   chang ge   lai   KTV le.
       I   come sing   song come KTV Prt
       'I have come to KTV to sing songs.'

Let us re-examine the example that Zhang (2003) cites from Lu (1985:31) in (74), repeated below:

(74)   a.   ta ba ren   dou dezui-le,   wo lai/qu   pei bushi   qu?
            he BA people all   offend-Perf I   come/go offer apology go
            'He offended all the people and I offer an apology?'
       b.   zhe shir   hai dei   you nin lai/qu   gen dahuor   shuo qu.
            this matter still must by   you come/go to   everyone speak go
            'About this matter, it still needs to be you to tell everyone.'

We have argued that the same pre-VP deictic verbs cannot be adjacent. When both the NDeic head and the SDeic head are the same deictic verb, movement of vP seems to be obligatory. Otherwise, the sentence is ungrammatical:

(110) a. *... wo qu qu pei   bushi?
               I   go go offer apology
            '... I offer an apology?'
       b. *... you nin qu qu gen dahuor   shuo.
               by   you go go to   everyone speak
            '... you to tell everyone.'

By contrast, in the case of *lai qu*, movement is optional:

(111) a.   ... wo lai   qu pei   bushi?
               I   come go offer apology
            '... I offer an apology?'
       b.   ... you nin lai   qu gen dahuor   shuo.
               by   you come go to   everyone speak
            '... you to tell everyone.'

Some problems regarding this construction remain to be solved. First, we have argued that the nonspatial pre-VP deictic verb shows the speaker's point of view; in addition, when it co-occurs with the spatial pre-VP deictic verb, *lai qu* is the only possible combination. Then, it should always be possible for the pre-VP deictic verb to be *lai* 'come' and the post-VP deictic verb to be *qu* 'go', as in (74). However, it seems that this is not the case:

(112) *Laowang lai kan dianying qu le.
       Laowang come see movie go Perf/Prt
       'Laowang has gone to see the movie.'

Second, why is movement of vP allowed only in the appearance of AspP, given that it simply moves to the lower Spec,FocP for emphasizing? Furthermore, why is the requirement of the appearance of AspP only for *lai* 'come' but not for *qu* 'go', as shown in (113)?

(113) a. wo lai mai mianbao lai *(le).[19]
         I come buy bread come Perf/Prt
         'I have come to buy bread.'

      b. wo qu mai mianbao qu.
         I go buy bread go
         'I go to buy bread.'

I do not have explanations for these questions now. I leave them for future research.

3.4   Chapter summary

In this chapter, we have examined the deictic verb appearing in the pre-VP and the post-VP position. I have argued that when the deictic verb is in these positions, it is a viewpoint aspect. The aspectual deictic verb indicates the state prior to the occurrence of the event. There are two types of aspectual deictic verbs: spatial and nonspatial.

In the spatial aspectual deictic verb, apart from the state prior to the occurrence of the event, it also involves movement in space. While movement has not reached the endpoint in the mental domain, it may have in the spatial domain. The endpoint in the spatial domain is the speaker's physical location, which is also the location where the event is going to happen. Therefore, in sentences with the spatial aspectual deictic verb, the subject seems to have arrived at the speaker's physical location, but the event has not happened yet, which makes the event sound like a purpose clause.

In the nonspatial aspectual deictic verb, there is no physical movement involved. The interpretation seems to be an event happening in the (near) future due to

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[19]Without *le*, the sentence is grammatical under the interpretation 'I'll buy bread and bring it here.' In this interpretation, there is no purpose reading.

the event being regarded as a destination set in the future. The suggestion and request readings come from the speaker's point of view. When the subject of the event is the first person, the speaker suggests he himself doing the activity in the future; when the subject is the second or the third person, the speaker requests others to do the activity in the future.

When both of the aspectual deictic verbs appear preverbally, the nonspatial deictic verb precedes the spatial deictic verb. In terms of their positions in the syntactic structure, I have proposed two functional projections between ModP and AspP. The nonspatial pre-VP deictic verb is in the NDeic head and the spatial pre-VP deictic verb is in the SDeic head. For sentences where the deictic verbs appear in the pre-VP and the post-VP position simultaneously, I have argued that the pre-VP deictic verb is in NDeic and the post-VP deictic verb is in SDeic. The focused element, vP, moves to the lower Spec,FocP, which is between NDeicP and SDeicP, for emphasizing. When the two functional heads with the exact pronunciation are adjacent, movement of vP is obligatory. In the case of sentences with only the post-VP deictic verb, the deictic verb is in SDeic, and vP moves to the lower Spec,FocP. Since the post-VP deictic verb is the spatial aspectual deictic verb, the spatial reading is always obtained.

Chapter 4

Directional serial verbs

4.1 Introduction

Directional serial verbs consist of a main verb, followed by a directional verb, followed by a deictic verb (Lin, 1977).[1] Directional verbs are verbs that take a location as a reference point, such as *jin* 'enter, in' and *chu* 'exit, out', as shown in (1). Deictic verbs are verbs that take the speaker as a reference point, including *lai* 'come' and *qu* 'go', as illustrated in (2).

(1)   a.   Ahua jin   *(huochezhan) le.
             Ahua enter   train station Prt
             'Ahua has entered the train station.'

       b.   Ahua chu *(huochezhan) le.
             Ahua exit   train station Prt
             'Ahua has exited the train station.'

In (1), *huochezhan* 'train station' is the reference point for the directional verb. When the directional verb is *jin* 'enter, in', the locative argument is the endpoint of the movement (i.e., the goal). Therefore, (1a) means Ahua's moving into the train station. When the directional verb is *chu* 'exit, out', the locative argument is the beginning point of the movement (i.e., the source). Consequently, (1b) means Ahua's moving out of the train station. Since the directional verb takes a location as its reference point, the locative argument is necessary. Without the locative argument, the sentence is ungrammatical.

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[1]I use the term 'directional serial verb' simply to show that the phrase related to directionality includes more than one verb. It does not mean that I assume all the verbs within the phrase have their own argument structure and assign θ-roles. I do not assume that some arguments receive θ-roles from more than one verb either.

(2) a. Ahua lai   (huochezhan) le.
         Ahua come train station Prt
         'Ahua has come to the train station.'

     b. Ahua qu (huochezhan) le.
         Ahua go train station   Prt
         'Ahua has gone to the train station.'

In (2), the speaker is the reference point for the deictic verb. Without the locative argument, the sentence remains grammatical. The locative argument *huochezhan* 'train station' signifies the specific destination. When the deictic verb is *lai* 'come', the moving object moves toward the speaker. Therefore, the speaker's location is the endpoint of the movement (i.e., goal). In (2a), Ahua moves toward the speaker, and *huochezhan* 'train station' is the exact location of the speaker. When the deictic verb is *qu* 'go', the moving object moves away from the speaker. Thus, the speaker's location is the beginning point of the movement (i.e., source). In (2b), Ahua moves away from the speaker, and *huochezhan* 'train station' is the destination of the movement. In other words, in (2b), the beginning point is the speaker's location and the endpoint is the train station.

In directional serial verbs, the order of the verbs is strict. When both the directional verb and the deictic verb appear, the first verb must be the main verb (V1), the second verb the directional verb (V2), and the third verb the deictic verb (V3).[2] That is to say, the directional verb always precedes the deictic verb:

(3) a. Ahua zou jin   lai   chufang.   (V1 V2 V3)
         Ahua walk enter come kitchen

     b. *Ahua zou lai   jin   chufang.   (V1 V3 V2)
         Ahua walk come enter kitchen
         'Ahua walked into the kitchen (toward me).'

In addition to both the directional verb and the deictic verb following the main verb, it is also possible for only the directional verb or only the deictic verb following the main verb:

(4) a. Ahua zou jin   chufang.   (V1 V2)
         Ahua walk enter kitchen
         'Ahua walked into the kitchen.'

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[2]In the following, when the directional verb follows the main verb, we label it V2; when the deictic verb follows the main verb, with or without the directional verb, we label it V3.

b. Ahua zou   lai   chufang.   (V1 V3)
Ahua walk come kitchen
'Ahua walked to the kitchen (toward me).'

When the main verb is transitive, the order of the three verbs is fixed, yet the object can follow any of the verbs. Therefore, there are three possible word orders: the object can follow the main verb (5a), the directional verb (5b), or the deictic verb (5c):

(5) a. Ahua na   yi-dai shuiguo jin   lai.   (V1 O V2 V3)
         Ahua take one-CL fruit   enter come

     b. Ahua na   jin   yi-dai shuiguo lai.   (V1 V2 O V3)
         Ahua take enter one-CL fruit   come

     c. Ahua na   jin   lai   yi-dai shuiguo.   (V1 V2 V3 O)
         Ahua take enter come one-CL fruit
         'Ahua brought a bag of fruit in.'

When the main verb is followed only by the deictic verb, the object can also follow either of the verbs:

(6) a. Ahua na   yi-dai shuiguo lai.   (V1 O V3)
         Ahua take one-CL fruit   come

     b. Ahua na   lai   yi-dai shuiguo.   (V1 V3 O)
         Ahua take come one-CL fruit
         'Ahua brought a bag of fruit.'

However, when the main verb is followed only by the directional verb, the object must appear after the directional verb:

(7) a. *Ahua na   yi-dai shuiguo jin.   (V1 O V2)
         Ahua take one-CL fruit   enter

     b. Ahua na   jin   yi-dai shuiguo.   (V1 V2 O)
         Ahua take enter one-CL fruit
         'Ahua took a bag of fruit in.'

The distributions are summarized as below:

(8)   Word orders in directional serial verbs:

word order	grammaticality
V1 O V2 V3	✓
V1 V2 O V3	✓
V1 V2 V3 O	✓
V1 O V2	×
V1 V2 O	✓
V1 O V3	✓
V1 V3 O	✓

Some researchers term directional serial verbs 'directional verb compounds' and compare them with resultative verb compounds.[3] Some of them, such as Li and Thompson (1981), even treat directional verb compounds as one subtype of resultative verb compounds. According to Li and Thompson, both compounds are composed of two elements, with the second indicating the result caused by the first. However, they themselves also point out that directional verb compounds differ from other subtypes of resultative verb compounds in that the former allow the object to intervene between the two elements while the latter disallow any elements, such as aspectual markers, to appear in between, except for the potential morphemes *de* 'can' and *bu* 'cannot'.

Chao (1968) calls what follows the first verb in a compound a complement. In the resultative verb compound *da-po* 'hit-break', the second verb *po* 'break' is the resultative complement; in the directional verb compound *na-jin* 'take-enter', the second verb *jin* 'enter' is the directional complement. Note that the term 'complement' in Chinese descriptive grammar differs from that in formal syntax. In Chinese descriptive grammar, a complement functions as a supplement to the word in order to complete the meaning or add an additional meaning to it. In formal syntax, a complement is the constituent a head selects. In the following, I will use the term 'directional complement' when emphasizing that the directional and the deictic verb follow the main verb. In cases where I only refer to these two types of motion verbs, I will simply use the term 'directional verb' and 'deictic verb'.

According to Chao (1968), the directional complement can be the directional verb, the deictic verb, or a compound 'directional verb + deictic verb'.[4] Similar

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[3] I will use the terms 'directional serial verb' and 'directional verb compound' interchangeably.

[4] There is another type in his classifications, where the complement does not form a compound with the deictic verb, like *zhu* 'live, dwell' in *na zhu* 'hold fast', *zou* 'go away' in *gua*

to Chao's classifications, Li and Thompson (1981) claim that the second element of the directional verb compound can be a compound itself. The directional verb compound can be schematized as below:

(9)   V1   –   V2
         displacement   direction   (Li and Thompson, 1981:58)

In terms of displacement V1, Li and Thompson (1981:58) categorize it into three types. The first is a motion verb, such as *zou* 'walk', *pao* 'run', *fei* 'fly', etc.; the second is an action verb that 'inherently implies the direct object undergoes a change of location', like *ban* 'move', *reng* 'throw', *song* 'send', *ji* 'mail', and so on; and the third is an action verb that 'may cause the direct object to undergo displacement', such as *da* 'hit' in *da chu-lai* 'hit exit-come', which means 'hit someone so that s/he comes out'. However, the first verb is not always the displacement verb. For example, they claim that durative nondisplacement verbs, such as *huo* 'live' and *xie* 'write', can combine with *xia-qu* 'descend-go' and be used metaphorically to mean 'continue', showing extension in time.

With respect to direction V2, which is Chao's (1968) 'directional complement', it can be a directional verb, which is related to the general direction, including *shang* 'ascend, up', *xia* 'descend, down', *jin* 'enter, in', *chu* 'exit, out', *hui* 'return, back', *guo* 'pass, by', *qi* 'rise, up', and *kai* 'away'.[5] It can also be a deictic verb, which is associated with the speaker's location, including *lai* 'come' and *qu* 'go'. It can also be a compound consisting of both the directional and the deictic verb, like *jin-lai* 'enter-come' and *chu-qu* 'exit-out'.

The types of the directional complements can be summarized as below:

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zou 'be blown away', *diao* 'drop, fall' in *ca diao* 'wipe off', *dao* 'upside down' in *na dao* 'hold upside down', *dao* 'arrive' in *na dao* 'take and arrive at the destination', etc. Since our focus is on the directional and the deictic verb, I exclude this subcagetory in our discussion.

[5]Chao includes another verb *long* 'gather, together'. Li and Thompson (1981) exclude it due to it occurring only in some idiomatic compounds, such as *la-long* 'to make political allies' and lacking the properties of the resultative verb compounds.

(10)   Types of directional complements:[6]

directional verb	*shang* 'ascend, up'	*xia* 'descend, down'
	jin 'enter, in'	*chu* 'exit, out'
	hui 'return, back'	*guo* 'pass, by'
	qi 'rise, up'	*kai* 'away'
deictic verb	*lai* 'come'	*qu* 'go'
compound	'directional verb + deictic verb'	

However, if the directional verb compound is a genuine lexical compound, no element can be inserted in between. Then, the object should not be able to appear after the displacement verb, let alone appearing between a compound complement. Since the object can follow any of the verbs when the three verbs occur simultaneously, it suggests that the directional serial verb is not a lexical compound, and neither is the compound directional complement when being separated. In this chapter, I am going to examine previous analyses regarding directional serial verbs and also the distributions of the directional complements when used as main verbs.

The chapter is organized as follows. Section 4.2 reviews Lu's (1972, 1973, 1977) predicate-lowering, followed by Zou's (1994a, 1995, 2013) morpho-syntactic analysis in Section 4.3 and Chen's (2016) constructionist approach in Section 4.4. Section 4.5 examines the distributions of the directional complements when used as main verbs. Section 4.6 summarizes this chapter.

4.2   Lu's (1972, 1973, 1977) predicate-lowering

Lu (1972) investigates V-V constructions in Mandarin Chinese. He states that V-V constructions can be divided into four groups. In one of the groups, the first verb has the main role while the second verb has the complement role, such as *xi-ganjing* 'wash-clean', which means 'wash something so that it becomes clean'. Depending on the function of the second verb, this group can be further divided into several subtypes:

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[6]Note that while the compound directional complement is composed of a directional verb and a deictic verb, there is no *qi-qu* 'rise-go' and *kai-qu* 'away-go'.

(11)   a.   ta xi-ganjing-le   yifu.   (result)
                  he wash-clean-Perf clothes
                  'He washed the clothes clean (the clothes became clean as a result of his washing them).'

        b.   ta pao-chu-qu-le.   (direction)
                  he run-exit-go-Perf
                  'He ran out (of some place in a direction away from the speaker).'

        c.   ta mai-dao-le   nei-ben shu.   (achievement)
                  he buy-arrive-Perf that-CL book
                  'He bought that book.'

        d.   tamen da-wan-le   qiu.   (completion)
                  they   play-finish-Perf ball
                  'They finished playing the ball game (they played the ball game to its completion).'   (Lu, 1977:278)

In (11a), the second verb *ganjing* 'clean' shows the result of the event denoted by the first verb *xi* 'wash'; in (11b), the second verb *chu-qu* 'exit-go' signals the direction of the running event; in (11c), *dao* 'arrive' indicates the achievement of the buying event; in (11d), *wan* 'finish' shows the completion of the ball-playing event. According to Lu (1977), the V-V in (11a) is the resultative verb compound, which has the 'cause-result' relationship, and the V-V in (11b) is the directional verb compound, which has the 'manner-direction' relationship.

Lu (1972, 1973, 1977) posits that directional verb compounds consist of two types of motion verbs: manner-motion verbs and direction-motion verbs, which are displacement V1 and direction V2 in (9) respectively. The manner-motion verb shows the manner of the movement and is neutral regarding direction, such as *zou* 'walk', *pao* 'run', *ban* 'move', and *na* 'take'. The direction-motion verb indicates the direction of the movement and is neutral regarding manner, which is the directional complement.

Lu (1972) defines the manner-motion verb to contain the following semantic properties:

(12)   a.   It must be one of those activity verbs which indicate visible movement.

        b.   The movement represented by the verb must involve the locomotion of the person or things affected by the verb.

        c.   The movement represented by the verb must indicate a particular manner in which the movement proceeds.   (Lu, 1972:34)

However, there are some verbs that can co-occur with *lai* 'come' and *qu* 'go' but do not involve overt movement, such as *mai* 'buy', *tou* 'steal', and *pian* 'lie'. Therefore, Lu (1972) claims that the main feature of the first verb is [+LOCOMOTION].

Lu (1972, 1973, 1977) postulates that the directional verb compound has a complex underlying structure. The subject and the first verb (as well as its object) are in the most deeply embedded clause. This clause is a sentential subject that the second verb, *lai* 'come' or *qu* 'go', takes. This clause in turn is the sentential subject of the aspectual marker, which is the topmost predicate, according to Lu (1972, 1973). The deep structure of the directional serial verb can be represented as below (ignoring irrelevant movement):

(13)
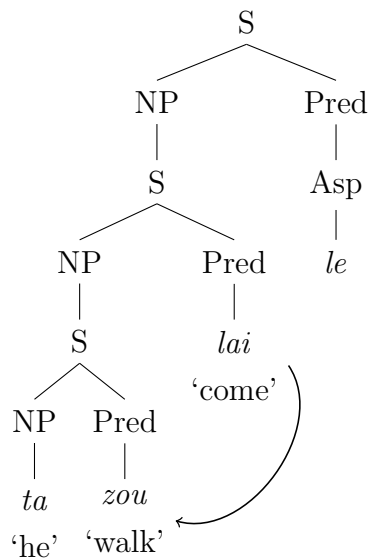
Lu (1972) posits a transformation called 'predicate-lowering' and argues that the V-V order is derived from lowering the second verb to the first predicate (i.e., to the right of the object if there is one), as shown in the arrow in (13). He further divides direction-motion verbs into primary direction-motion verbs and secondary direction-motion verbs, which are deictic verbs and directional verbs respectively in our terms. He proposes that the deictic verb takes a sentential subject, the verb of which is the directional verb. The directional verb also takes a sentential subject, the verb of which is the manner-motion verb. The deep structure can be illustrated as below:

(14)

```
                        S
                   /         \
                 NP           Pred
                  |            |
                  S           Asp
              /       \        |
            NP        Pred     le
             |         |
             S        lai
          /     \    'come'
        NP      Pred
         |       |
         S      jin
      /    \   'enter'
    NP     Pred
     |      |
     ta    zou
    'he'  'walk'
```
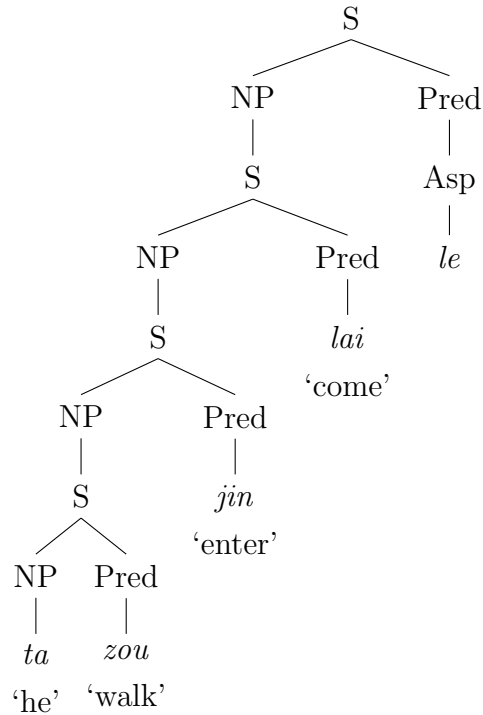
However, in Lu (1973), he claims that the directional verb alone cannot form a grammatical sentence without the deictic verb:

(15)   a.   *ta jin-le.
            he enter-Perf
            'He went in.'

       b.   ta jin   lai/qu-le.
            he enter come/go-Perf
            'He is coming/going in.'

       c.   *ta zou   jin-le.
            he walk enter-Perf
            'He walked in.'

       d.   ta zou jin   lai/qu-le.
            he walk enter come/go-Perf
            'He is walking in toward/away from the speaker.'   (Lu, 1973:249)

Due to this reason, he posits that in the V-V-V construction, the directional verb is dependent on the deictic verb. When both of them lower through 'predicate-lowering', V-V-V order is derived. The representation can be shown as follows:

(16)

```
                          S
                 ┌────────┴────────┐
                NP               Pred
                 │                 │
                 S                Asp
         ┌───────┴───────┐         │
        NP             Pred        le
         │          ┌────┴────┐
         S        (jin)      lai
      ┌──┴──┐    'enter'    'come'
     NP    Pred
      │     │
      ta    zou
     'he'  'walk'
```
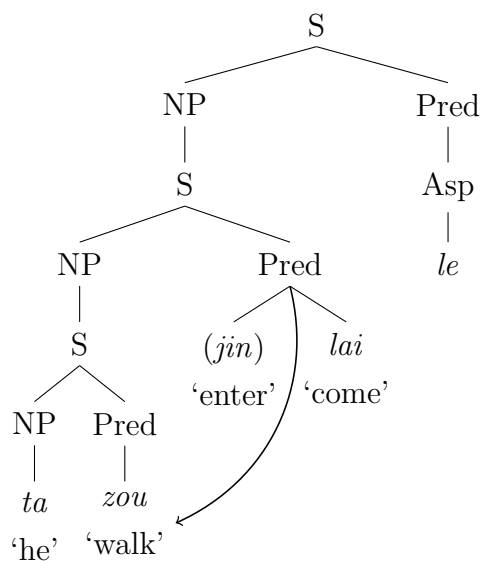
For cases where the directional verb appears alone without the deictic verb, he argues that the deictic verb 'may be deleted if its meaning has been made clear by conventional use of the lexical items involved' (Lu, 1973:251). The underlying structure of (17) can be illustrated as (18) (adpated from Lu, 1973:251):

(17)   ta jin   fangjian le.
        he enter room   Perf
        'He has gone into the room.'

(18)

```
                            S
                 ┌──────────┴──────────┐
                NP                    Pred
                 │                      │
                 S                     Asp
         ┌───────┴───────┐              │
        NP             Pred             le
         │          ┌────┼────┐
         S         jin   NP   qu
      ┌──┴──┐    'enter'  │  'go'
     NP    Pred        fangjian
      │     │           'room'
      ta  unspecified
     'he'
```
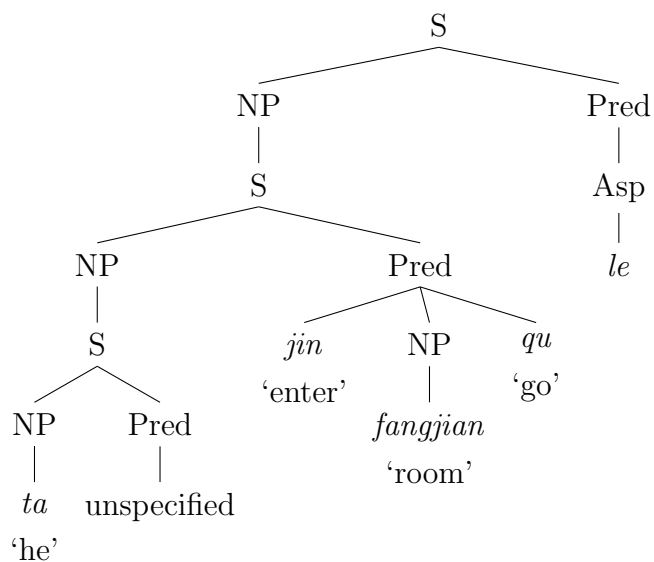
According to Lu (1973), the omitted deictic verb in (17) is *qu* 'go'. He claims that speakers uttering this sentence intend to mean movement in a direction away from the speaker. Thus, *qu* 'go' can be optionally deleted. If the deictic verb

is *lai* 'come', it cannot be deleted, for the meaning is not carried in the lexical items involved by conventional use.

However, (17) can be uttered even if the speaker is in the room. That is to say, (17) is grammatical not due to conventional use but due to the appearance of the locative argument. In fact, (17) explains why (15a) and (15c) are ungrammatical. As we have seen, a directional verb requires a locative argument to be its reference point. Therefore, the ungrammaticality of (15a) and (15c) does not result from the directional verb alone being unable to form a grammatical sentence but rather it being a transitive verb. In order to make the sentences grammatical, a locative argument is needed. This shows that the directional verb is not dependent on the deictic verb.

In addition, with an overt deictic verb in (17), there are two possible word orders:

(19)   a.   ta jin   fangjian qu le.
              he enter room   go Prt

       b.   ta jin   qu fangjian le.
              he enter go room   Prt
              'He has gone into the room.'

If the whole predicate *jin fangjian qu* 'enter room go' must lower together as a constituent, as Lu (1972, 1973) argues, the word order in (19b) cannot be derived.[7] A similar problem occurs with a transitive main verb when the object appears between the directional verb and the deictic verb (i.e., V1 V2 O V3) and when it follows the deictic verb (i.e., V1 V2 V3 O), since in his system, the directional complements lower and sister-adjoin to the first predicate.

Lu (1972, 1973, 1977) compares directional verb compounds with resultative verb compounds and postulates that the second verb in resultative verb compounds is the most embedded in the structure, showing the result of the event denoted by the first verb. In contrast to 'predicate-lowering' in directional verb compounds, he proposes that the second verb in resultative verb compounds undergoes the 'predicate-raising' transformation. For example, the underlying structure of (20) can be represented as (21) (ignoring the aspectual marker):

---

[7]To Chen (2016), (19b) is ungrammatical. She argues that a locative argument cannot appear after the deictic verb when the deictic verb directly follows the directional verb. However, the sentence is grammatical to my informants. As she points out, there is variation. Since the judgments of the sentences in this thesis are based on Taiwan Mandarin, I am going to analyze directional serial verbs based on Taiwan Mandarin.

(20)   ta he-zui-le   jiu.
He drink-drunk-Perf wine
'He got drunk as a result of drinking wine.'   (Lu, 1977:281)

(21)

```
                    S
            ┌───────┴───────┐
          NP₁              VP
           │        ┌───────┼───────┐
           ta       V      NP₂       S
          'he'      │       │     ┌──┴──┐
                    he     jiu   NP₁   VP
                  'drink' 'wine'  │     │
                                  ta     V
                                 'he'    │
                                        zui
                                      'drunk'
```
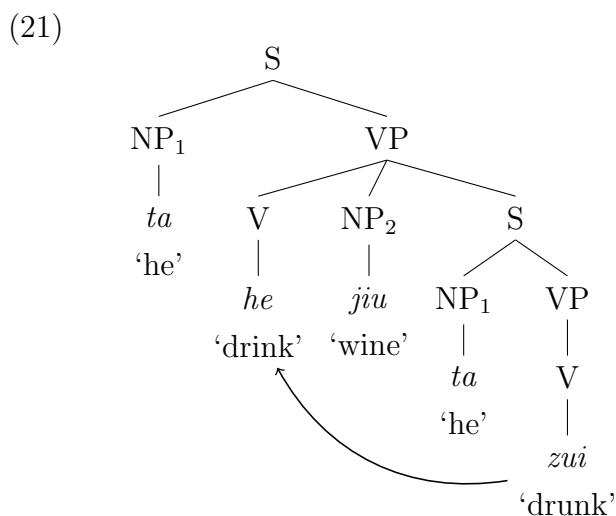
In resultative verb compounds, the second verb raises and sister-adjoins to the first verb, as the arrow in (21) shows. When the subject of the second verb is the same as either the subject or the object of the first verb, this subject is deleted by another transformation.

Lu (1977) distinguishes directional verb compounds from resultative verb compounds by replacement tests. He claims that the directional complement in directional verb compounds can be replaced by *dao nar qu* 'to where' to form an interrogative:

(22)   a.   ta zou-chu-qu-le.
              he walk-exit-go-Perf
              'He walked out of some place in a direction away from the speaker.'

        b.   ta zou dao nar   qu-le?
              he walk to   where go-Perf
              'Where did he walk to?'   (Lu, 1977:291,293)

By contrast, resultative verb compounds can be paraphrased by the following structures. Example (23) paraphrases (20):

(23)   a.   ta he-le   jiu (ta) cai   zui   de.
              he drink-Perf wine (he) until-then drunk DE
              'He didn't get drunk until he drank wine.'

b. ta zui-le   shi yinwei (ta) he   jiu de yuangu.
    he drunk-Perf is   because (he) drink wine DE reason
    'The reason that he got drunk is that he drank wine.' (Lu, 1977:286)

Lu (1977) observes that in some cases, the V-V construction can be both a
directional verb compound and a resultative verb compound, such as the following
example:

(24)   ta ba xiaotou da chu-qu-le.
        he BA thief   hit exit-go-Perf
        'He hit the thief and as a result of that the thief went out.' (Lu, 1977:301)

In (24), *da chu-qu* 'hit exit-go' is a directional verb compound as the directional
complement *chu-qu* 'exit-go' can be replaced by *dao nar qu* 'to where' to form
an interrogative:

(25)   ta ba xiaotou da dao nar   qu-le?
        he BA thief   hit to   where go-Perf
        'Where did he hit the thief to?'

It is also a resultative verb compound due to it being able to be paraphrased by
the following structures:

(26)   a. ta da-le   xiaotou xiaotou cai   chu-qu de.
            he hit-Perf thief   thief   until-then exit-go DE
            'The thief didn't go out until he hit him.'
        b. xiaotou chu-qu-le   shi yinwei   ta da ta   de yuangu.
            thief   exit-go-Perf is   because he hit him DE reason
            'The reason that the thief went out is that he hit him.'

This leads Lu (1977) to propose two structures for this kind of sentences. One
is the structure he posits for directional verb compounds, that is, the direction-
motion verb taking a sentential subject. The deep structure can be illustrated as
below (ignoring the aspectual marker and the BA-construction):

(27)

```
                         S
               ┌─────────┴─────────┐
              NP                   VP
               │                    │
               S                    V
        ┌──────┴──────┐             │
       NP            VP          chu-qu
        │        ┌────┴────┐     'exit-go'
        ta       V        NP
       'he'      │         │
                 da      xiaotou
               'hit'     'thief'
```
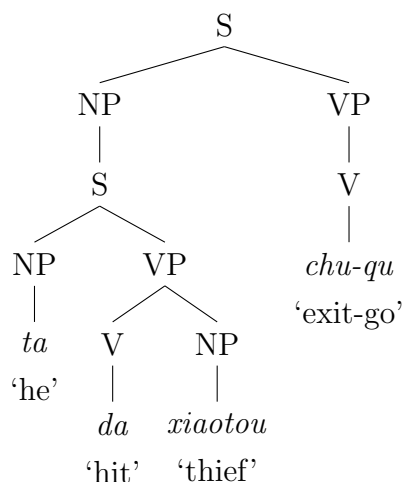
The other is the structure for resultative verb compounds, that is, the clause indicating the result being the most deeply embedded. The deep structure can be shown as follows (ignoring the aspectual marker and the BA-construction):

(28)

```
                  S
         ┌────────┴────────┐
        NP                VP
         │      ┌──────────┼──────────────┐
        ta      V         NP              S
       'he'     │          │        ┌─────┴─────┐
                da      xiaotou     NP          VP
              'hit'     'thief'      │           │
                                  xiaotou        V
                                  'thief'        │
                                              chu-qu
                                             'exit-go'
```
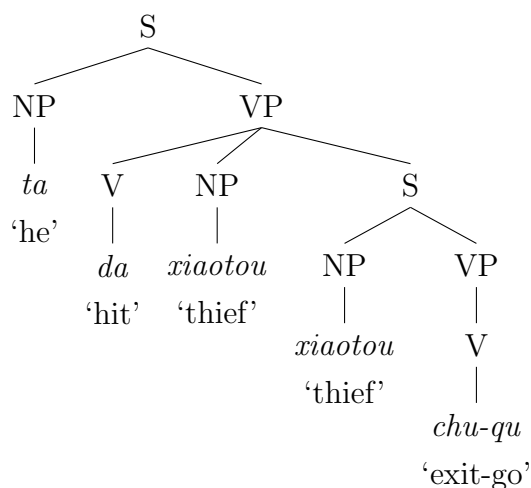
However, resultative verb compounds are composed of two elements. Therefore, the second verb in resultative verb compounds cannot be separated if this verb has more than one morpheme (e.g., *ganjing* 'clean' in *xi-ganjing* 'clean-wash'). By contrast, directional verb compounds can consist of up to three elements. As we have seen, a compound complement can be separated by a locative argument, such as *chu-qu* 'exit-go' in (29):

(29) ta ba xiaotou da chu men-wai   qu-le.
      he BA thief   hit exit door-outside go-Perf
      'He hit the thief and as a result of that the thief went outside.'

If *da chu-qu* 'hit exit-go' in (28) is a resultative verb compound, a locative argument should not be able to appear between *chu* 'exit' and *qu* 'go'. Since it is possible for *chu-qu* 'exit-go' to be separate, (28) cannot be analyzed as a resultative verb compound. While I agree with Lu (1977) that directional verb compounds should be accounted for by more than one structure, as we will see in the next chapter, I do not agree that both directional verb compounds and resultative verb compounds can be derived from the same structure with the same derivation.

4.3 Zou's (1994a, 1995, 2013) morpho-syntactic analysis

Zou (1995) proposes that resultative verb compounds and directional verb compounds can be accounted for by a morpho-syntactic analysis. He argues that directional verb compounds are similar to resultative verb compounds with respect to the complex thematic relation and that the various word orders are simply side effects of verb-raising and NP-movement.

He states that directional verb compounds consist of three morphemes, with the first denoting the displacement, the second signaling the general direction, which is the directional verb, and the third indicating the direction related to the speaker's location, which is the deictic verb.

Zou (1995) analyzes the structures of both resultative verb compounds and directional verb compounds by adopting Vendler's (1967) and Dowty's (1979) ideas that an accomplishment is a complex event, which contains an activity subevent and a resultant state subevent. The structure of a complex event can be represented as below (Zou, 1995:193):

(30)   event
              /\
      activity   state
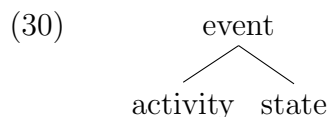
Zou (1995) argues that resultative verb compounds in Mandarin Chinese are accomplishment events, with the first verb denoting the activity and the second verb designating the state. Since the second verb conveys the resultant state caused by the first verb, the relation between the two verbs can be captured by the state subevent being the complement of the activity subevent. That is, both

subevents project their own argument structures, with the activity 'implicating' the state. The structure of the resultative verb compound can be illustrated as follows (Zou, 1995:194):

(31)

```
        V₁P
       /   \
     NP    V₁′
          /   \
        V₁    V₂P
```
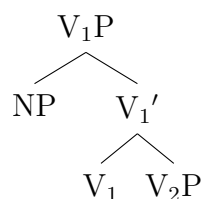
He proposes that, in the derivation of the resultative verb compound, the lower verb head moves to the higher verb head by means of verb incorporation in the sense of Baker (1988). The compound formation follows the rule below:

(32) The verbal morpheme denoting an activity linearly precedes the verbal morpheme denoting the result of such an activity, no matter what their prior order is.   (Zou, 1994b:280)

Similarly, in directional verb compounds, Zou (1995, 2013) proposes that V1 corresponds to the activity whereas V2 and V3 to the resultant state. When there are three verbs, the third verb is the complement of the second verb, as shown below (Zou, 1995:267):

(33)

```
         V₁P
        /   \
      NP    V₁′
           /   \
         V₁    V₂P
              /   \
            NP    V₂′
                 /   \
               V₂   (V₃P)
```
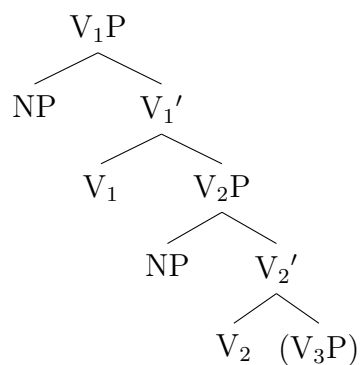
Take (34) as an example. The representation can be illustrated as (35):

(34) a. Lisi qian-le   yi-pi   ma   chu lai.
          Lisi bring-Perf one-CL horse exit come

      b. Lisi qian-chu-le   yi-pi   ma   lai.
          Lisi bring-exit-Perf one-CL horse come

      c. Lisi qian-chu-lai-le   yi-pi   ma.
          Lisi bring-exit-come-Perf one-CL horse
          'Lisi brought out a horse.'   (Zou, 2013:77)

(35)
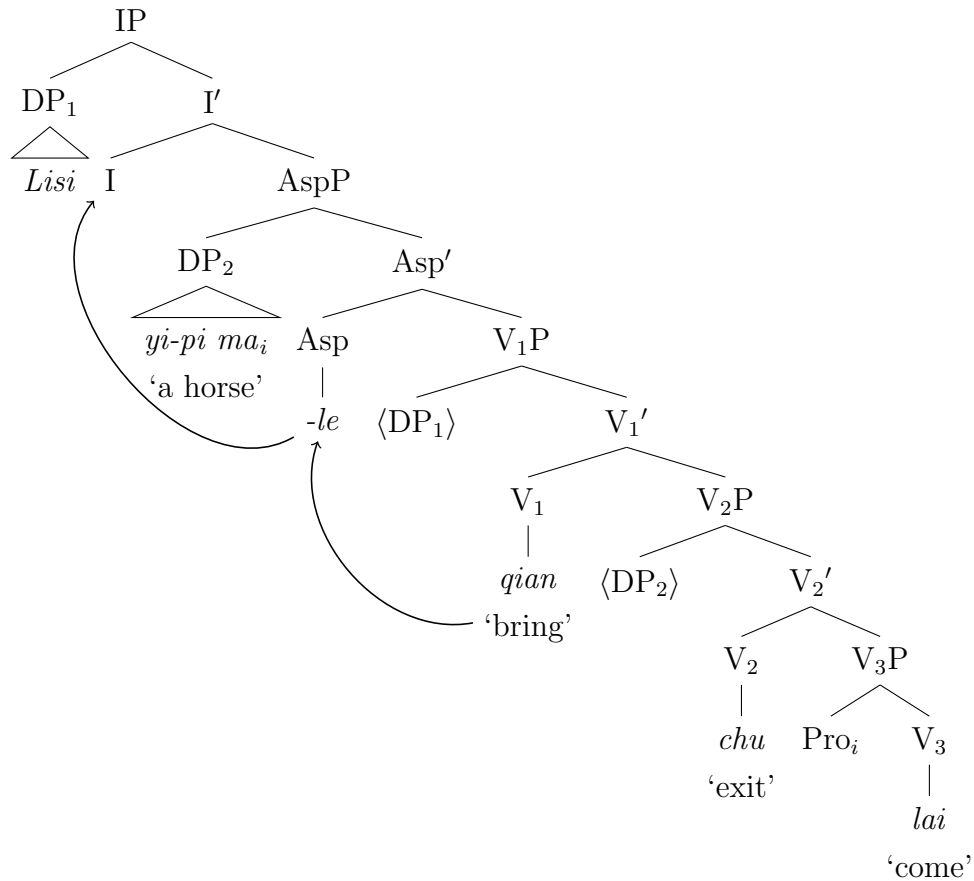
From (35), we can see that the canonical word order is (34a), where both V2 and V3 follow the object. According to Zou (1995), AspP corresponds to Agr_OP, the head of which assigns Case to the object. In order to receive Case, the subject Lisi moves from the $Spec,V_1P$ to the Spec,IP whereas the object *yi-pi ma* 'a horse' moves from the $Spec,V_2P$ to the Spec,AspP. In the derivation of (34a), V1 *qian* 'bring' first moves to Asp to obtain the aspectual marker *-le* and then to I to check the agreement feature. The other two word orders are derived from the same representation. The difference is that in (34b), V2 *chu* 'exit' first moves to V1, becoming *qian-chu* 'bring-exit', and in (34c), V3 *lai* 'come' first moves to V2, and then to V1, becoming *qian-chu-lai* 'bring-exit-come'. The rest of the derivation is the same.

While the analysis seems to capture the three different word orders, there are some problems. The first issue is the motivation for movement of V3 to V1 (in V1 V3 O) and also the adjacent V2-V3 to V1 (in V1 V2 V3 O). In order to account for the ungrammatical *V1 O V2, Zou (1994a, 1995) argues that V2 is a bound morpheme. Since V2 cannot stand alone, it must attach to either V1 or V3. On the other hand, V3 is a free morpheme, which makes raising optional. He claims that in the case of the directional verb compound with only two verbs (e.g., V1 V2 or V1 V3), raising to V1 is obligatory for V2 while it is optional for V3. However, if V3 is a free morpheme and V2 has been bound by V3 in the adjacent V2-V3, what is the motivation for them to further move to V1? Zou does not specifically mention it. In Zou (1994a), he argues that the motivation for movement from V3 to V2 and from V2 to V1 is for verb compound formation, as with the analysis he proposes for resultative verb compounds in Zou (1994b). If the motivation is compound formation, raising should be obligatory in all the cases. In other words, in the case of the appearance of V3, there should be only one word order, that is, V1 V3 O and V1 V2 V3 O. Since there is more than one possible word order, compound formation cannot be the motivation. In Zou (2013), he argues that verb-raising from V3 to V2 and from V2 to V1 is morphologically driven, for in Modern Chinese, verbs tend to be bi-syllabic. The semi-functional verbal categories of V2 and V3 can make them 'attracted' to V1 to compound with it. However, if that is the case, when there is only V1 and V3, we should only have one word order, V1 V3 O, which is again contrary to fact.

The second issue is that he assumes that there is V-to-I movement in Mandarin Chinese. If V-to-I movement exists in Mandarin Chinese, the verb should always precede the sentential adverb. Nevertheless, such a sentence is ungrammatical:[8]

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[8]Zou (1995:200) argues in a footnote that sentences like (36b) are ungrammatical not due to the lack of V-to-I movement in general. Assuming the sentential adverb being in the Spec,VP, he argues that V-to-I movement is blocked. However, if we examine sentences with a sentential adverb in the BA-construction, where he proposes a BaP to be higher than AspP, the sentential adverb precedes the BA-phrase:

(i) Laowang changchang ba meimei   nong ku.
     Laowang often   BA younger sister make cry
     'Laowang often makes his younger sister cry.'

This shows that the sentential adverb *changchang* 'often' is not in the Spec,VP and is higher than BaP. Therefore, his argument against the lack of V-to-I movement in Mandarin Chinese cannot stand.

(36)   a.   Laowang changchang da   diandong.
               Laowang often   play video game

        b.   *Laowang da   changchang diandong.
               Laowang play often   video game
               'Laowang often plays video games.'

Since he assumes that the object must move to the Spec,AspP to receive Case, if V-to-I movement does not take place, the correct word orders cannot be derived. However, as we can see in (36), V-to-I movement does not occur in Mandarin Chinese. This shows either that the structure is not correct or that the object does not move to the Spec,AspP to receive Case.

The third issue concerns θ-roles. In Zou's analysis, he allows DPs in both resultative and directional verb compounds to receive more than one θ-role from the verbs. He argues that in the directional verb compound, the subject is the agent of V1, and the object is the theme of V1 and the experiencer of V2. The object is also the experiencer of V3 through its subject Pro being controlled by the closest c-commanding DP, *yi-pi ma* 'a horse'. If, as he posits, directional verb compounds and resultative verb compounds have complex thematic relations, his analysis is problematic. While the θ-grids of both V1 and V3 are satisfied, that of V2 is not. V2, a two-place predicate, assigns two θ-roles: a theme (which Zou assumes to be an experiencer) and a source in the case of V2 *chu* 'exit'. In (35), the theme θ-role is assigned to *yi-pi ma* 'a horse', yet there is no argument to receive the source θ-role, making it unassigned.

While I agree with Zou (1995) that directional verb compounds are a complex event, I do not agree that each verb (i.e., each morpheme) projects its own argument structure and that all the word orders are derived from one structure.

4.4   Chen's (2016) constructionist approach

Chen (2016) analyzes directional serial verbs by the constructionist approach. In this approach, it is assumed that it is the syntactic structure that determines the meaning of the sentence rather than the meaning of the lexical items that determines it. The lexical items may include only the core meaning, such as real-world knowledge, or may have some more information, depending on the theories. One of its advocates is Ramchand (2008), who Chen considers to belong to the 'neo-constructionist' camp. To Ramchand, lexical items 'contribute conceptual content to structural aspects of meaning, and [are] tagged with cate-

gory labels as a way of constraining that insertion' (Ramchand, 2008:14). Similar to Rizzi's (1997) split C and Pollock's (1989) split Infl, she proposes that V can be split into three subevents: 'a causing subevent, a process-denoting subevent, and a subevent corresopnding to result state' (Ramchand, 2008:39), which are headed by *init(iation)*, *proc(ess)*, and *res(ult)* respectively. Each subevent has a corresponding participant in the specifier position, which are INITIATOR, UNDER-GOER, and RESULTEE. In addition, there is RHEME and PATH to be the object of the stative verb and the dynamic verb respectively, being the complement of an eventive head. She posits that a verb contains at least one subevent and can consist of up to three. In the case of a dynamic verb, the *proc*P is the heart and must be included. When a verb includes all the three subevents, it is inserted in all the heads. An entity may also occupy up to three specifier positions. When the same entity or verb appears in more than one position, the highest copy is pronounced.

Take the verb *enter* as an example, which can be represented as below (adapted from Ramchand, 2008:76):

(37)   Ariel entered the room.
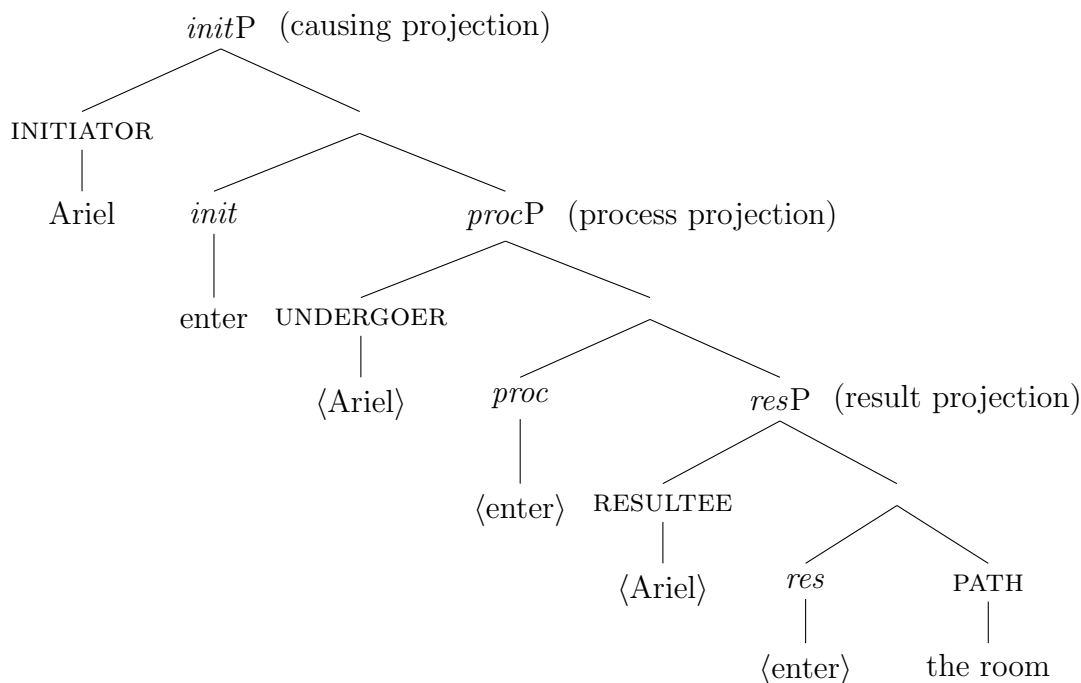
The verb *enter* contains all the three subevents and is inserted in all the three heads: *init*, *proc*, and *res*. Each subevent includes a participant role in the specifier position. In (37), Ariel is the argument participating in all the three subevents. She is the person to initiate the event, to undergo the process, and to

end up in the final location. Therefore, Ariel has all the three roles: INITIATOR, UNDERGOER, and RESULTEE. At Spell-Out, only the highest copy is pronounced. Thus, Ariel is pronounced in the Spec,*init*P and *enter* is pronounced in the *init* head. The unpronounced lexical items are designated by angle brackets. The object *the room* is not subject to any subevent but simply describes the final state; that is, the final location where Ariel arrives. Therefore, it is the complement of the *res* head.

Chen (2016) adopts Ramchand's (2008) approach to analyze directional serial verbs. However, she only adopts it partially. In order to account for resultative verb compounds and directional verb compounds in the same way, she argues that in Mandarin Chinese, *res*P is between *init*P and *proc*P rather than below *proc*P. In addition, verbs undergo cyclic head movement. Furthermore, in order to avoid ungrammatical verb clusters such as *da-po-da* 'hit-break-hit' after head movement, she proposes that a lexical item does not occupy the *init* head. Chen uses *v*P, ResP, and VP to replace *init*P, *res*P, and *proc*P respectively.

Take (38) as an example, which can be represented as (39):

(38) Xiaoming da po   huaping le.
      Xiaoming hit break vase   Prt
      'Xiaoming has broken the vase.'

(39)
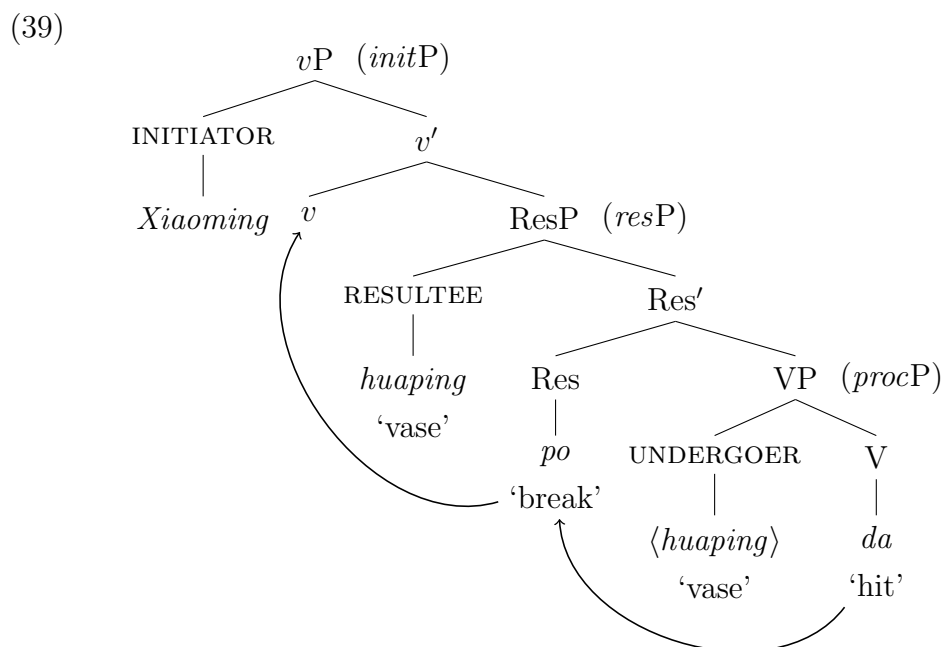
In (39), *da* 'hit' is in V and *po* 'break' is in Res. When *da* 'hit' undergoes cyclic

head movement to v, the verb cluster *da-po* 'hit-break' is in v. The subject Xiaoming is the INITIATOR and the object *huaping* 'vase' is both the RESULTEE and the UNDERGOER. Since *huaping* 'vase' has two copies, the highest copy is pronounced, which is the RESULTEE in the Spec,ResP.

In the case of non-serial verbs, such as *jin* 'enter', Chen (2016) proposes that verbs can be decomposed in the same way as English verbs do. Therefore, *jin* 'enter' is in both Res and V. Example (40) can be represented as (41):

(40)   Xiaoming jin   fangjian le.
             Xiaoming enter room   Prt
             'Xiaoming has entered the room.'

(41)
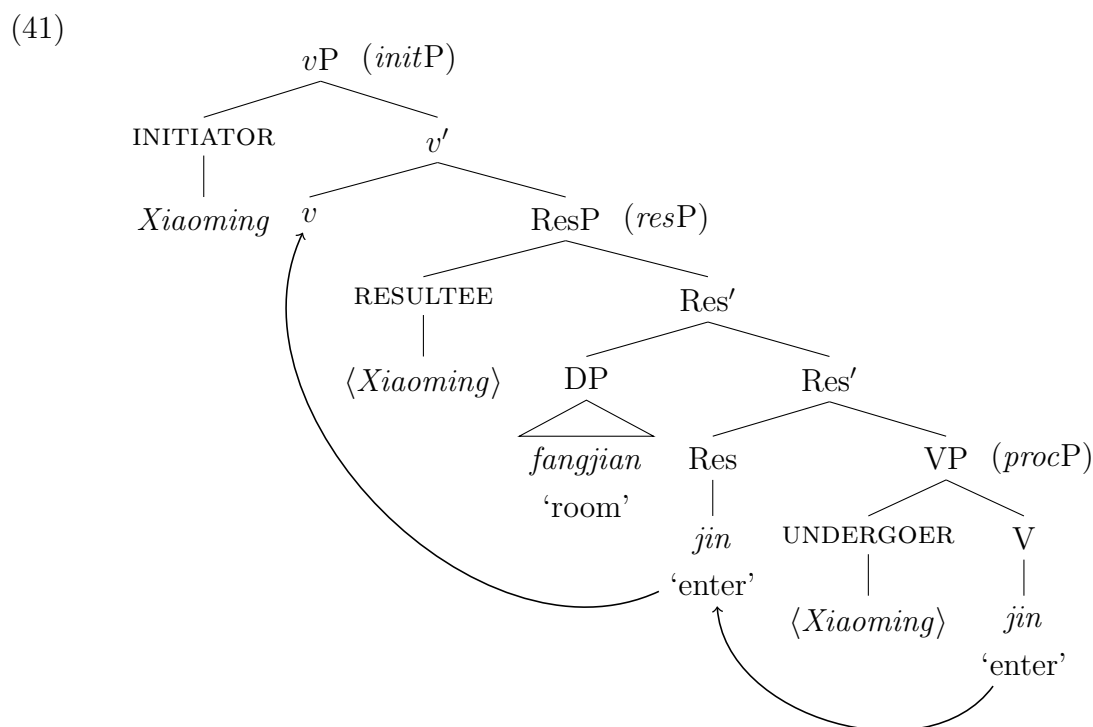
In (41), the subject Xiaoming occupies INITIATOR, RESULTEE, and UNDERGOER. Following Ramchand (2008), the highest copy is pronounced, that is, the copy in the Spec,vP. The verb *jin* 'enter' undergoes head movement from V to v. Due to ResP being between vP and VP, Chen (2016) cannot adopt Ramchand's theory that RHEME/PATH is the complement of the *res* head. Therefore, she proposes that the locative DP *fangjian* 'room' is another specifier of ResP, which is lower than the RESULTEE. She claims that the locative argument *fangjian* 'room' is obligatory in that ResP requires a clear result state of the event. In order for the verb *jin* 'enter' in Res to have a result state, it needs a locative DP to specify

the destination.

A problem arises with respect to the co-occurrence of head movement and decomposition for the non-serial verbs. If *jin* 'enter' is decomposed and occupies both Res and V, after head movement, the cluster in *v* is *jin-jin* 'enter-enter' rather than *jin* 'enter'. While Chen (2016) avoids ungrammatical verb clusters like *da-po-da* 'hit-break-hit' in serial verbs, she does not realize the same problem in non-serial verbs in her system. Since our focus is directional serial verbs and the problem is theory-internal, I leave this issue here.

Apart from the three subevents, Chen (2016) stipulates an optional RealiseP, headed by the aspectual marker *-le*, and adopts Travis's (2010) inner aspect, the phrase of which is labeled as IAspP. Both projections are between *v*P and ResP, with the former being lower than the latter. She also proposes PathP to be the complement of VP and argues that ResP and PathP cannot co-occur due to the incompatibility of the resultative verb compound with the directional verb compound, as in (42).

(42) Xiaoming **ji** **diu**-le yi-feng xin *(**chu qu**).
      Xiaoming post lost-Perf one-CL letter exit out
      'Xiaoming posted a letter but it got lost.'   (Chen, 2016:172)

She postulates that IAsp has a [Tel:] feature to calculate telicity by means of valuation from Realise, Res, and Path. When [Tel:] is valued by Realise or Res, the event is telic; when it is valued by Path, the event is atelic. If it is valued by both Realise and Path, the event is telic.

In addition, she further proposes an adjunct DeicP to accommodate the deictic verb, adjoining to either ResP or PathP. In order to explain the ungrammaticality of the co-occurrence of the deictic verb and the resultative verb compound, as in (43), she posits that when DeicP adjoins to ResP, the resultative verb compound is not compatible with the adjunct DeicP for semantic reasons.

(43) *Xiaoming **ji** **diu**-le yi-feng xin **qu**.
      Xiaoming post lost-Perf one-CL letter go
      'Xiaoming posted a letter, but it got lost.'   (Chen, 2016:173)

Chen (2016) argues that there are two structures for directional serial verbs: the Res structure and the Path structure. The Res structure is for VVO word order, including the resultative verb compound, whereas the Path structure is for VOV

word order.

Let us first examine the Res structure, which accounts for the following example. The representation of (44a) can be illustrated as (45). The example is adapted from Chen (2016).

(44) a. Xiaoming song jin-le   tang (lai).   (V1 V2 O (V3))
          Xiaoming send enter-Perf soup come
          'Xiaoming has sent the soup in (toward me).'

      b. Xiaoming song lai-le   tang.   (V1 V3 O)
          Xiaoming send come-Perf soup
          'Xiaoming has sent the soup (toward me).'

(45)   Res structure (VVO word order)

```
                        vP
                   /         \
                DP₃           v'
                 |         /      \
              Xiaoming   v          IAspP
                         ↑       /        \
                       IAsp              RealiseP
                   [Tel:Realise+Res]    /        \
                             Realise          ResP
                                |          /        \
                               -le      ResP         DeicP
                                       /    \          |
                                    DP₂      Res'     Deic
                                     |      /    \      |
                                   tang   Res    VP    lai
                                  'soup'   |    /  \   'come'
                                          jin  DP₁  V
                                        'enter' |    |
                                              ⟨tang⟩ song
                                              'soup' 'send'
```
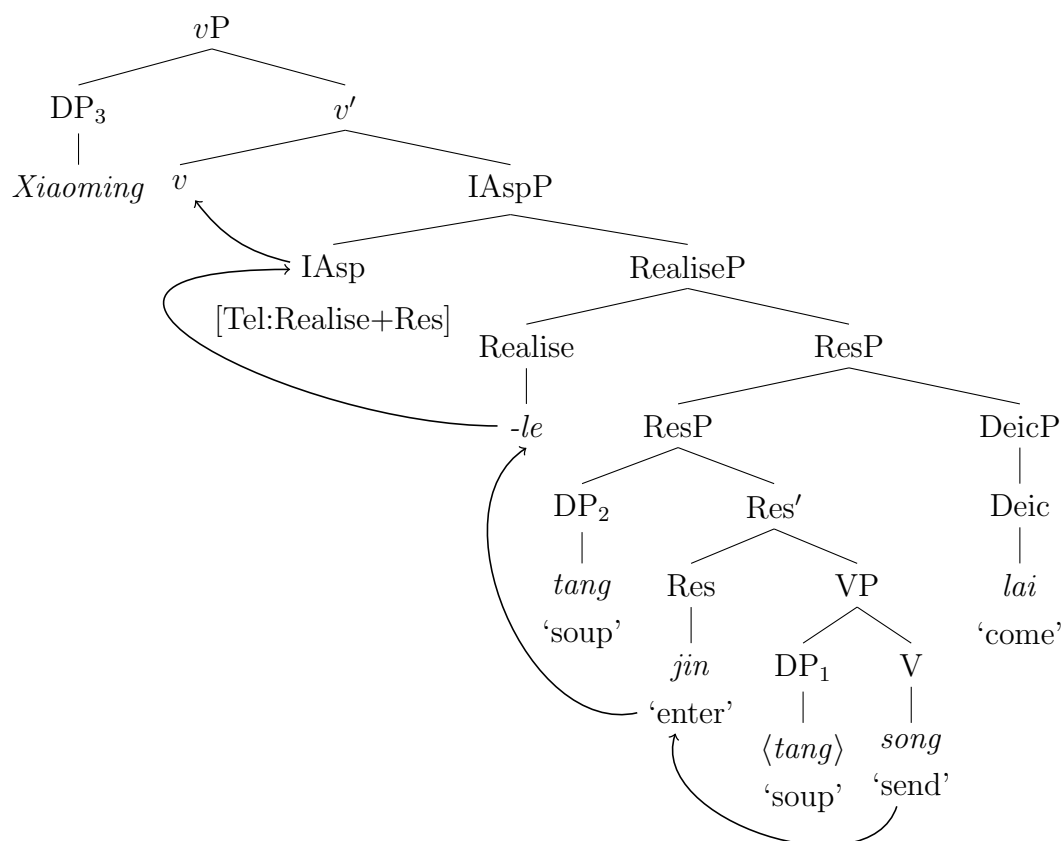
In (45), V1 *song* 'send' is in V and V2 *jin* 'enter' is in Res. The object *tang* 'soup' is both the RESULTEE in the Spec,ResP and the UNDERGOER in the Spec,VP. Since V2 *jin* 'enter' is semantically compatible with the deictic verb, DeicP, headed by V3 *lai* 'come', is able to adjoin to ResP. After head movement from V to *v*, the cluster *song-jin-le* 'send-enter-Perf' is in *v*. The [Tel:] feature on IAsp is valued by both Realise and Res, resulting in the telic reading. The object

tang 'soup' has two copies, and the highest copy, which is in the Spec,ResP, is pronounced. We therefore have the word order V1 V2 O V3. When DeicP does not adjoin to ResP, we have the word order V1 V2 O. In the case of (44b), V3 *lai* 'come' is in Res as opposed to Deic. In this case, DeicP does not adjoin to ResP.

There is a problem for V2 being in the Res head. When the verb is only *jin* 'enter', Chen (2016) proposes that it occupies both Res and V. She argues that *jin* 'enter' in Res needs a locative argument to specify the destination so as to indicate the result state of the event. Therefore, a locative argument is obligatory. However, in the case of the word order V1 V2 O (V3), *jin* 'enter' is also in Res, yet the locative argument is not obligatory. Chen claims that in some cases, the directional verb in Res does not require a locative argument. When a locative argument does not appear, the semantics will 'seek a metaphoric/idiomatic way to reinterpret [it]' (Chen, 2016:240). However, it is clear that *song-jin* 'send-enter' is not a metaphorical use, and a locative argument like *fangjian* 'room' is optional, which argues against her analysis.

Even when a locative argument appears as another specifier of ResP, it is still problematic. Consider the following example:

(46)   a.   Xiaoming song jin-le   fangjian yi-wan tang.
             Xiaoming send enter-Perf room   one-CL soup

       b. *Xiaoming song jin-le   yi-wan tang fangjian.
             Xiaoming send enter-Perf one-CL soup room
             'Xiaoming has sent a bowl of soup into the room.'

Chen (2016) proposes that the locative argument is lower than the RESULTEE, as we saw in (41). In (46), the object *yi-wan tang* 'a bowl of soup' is both the UNDERGOER and the RESULTEE. At Spell-Out, the highest copy is pronounced, which is the RESULTEE. This means that the object is higher than the locative argument *fangjian* 'room'. After head movement, we will only get the ungrammatical word order in (46b), not the grammatical one in (46a).

Chen (2016) herself also notices this problem. She states in a footnote that '[f]or 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' (Chen, 2016:194). However, this assumption will be a problem for the verb *jin* 'enter' in (41). If it is not the highest copy that is pronounced but rather the UNDERGOER, the subject Xiaoming, who has

all the three participant roles, will follow the locative argument *fangjian* 'room', which is again ungrammatical.

Next, let us examine the Path structure, which accounts for the following example. The representation of (47a) can be schematized as (48). The example is adapted from Chen (2016).

(47)   a.   Xiaoming song-le   tang jin   fangjian (lai).   (V1 O V2 L (V3))
                Xiaoming send-Perf soup enter room   come
                'Xiaoming has sent the soup into the room (toward me).'

        b.   Xiaoming song-le   tang lai.   (V1 O V3)
                Xiaoming send-Perf soup come
                'Xiaoming has sent the soup (toward me).'

(48)   Path structure (VOV word order)
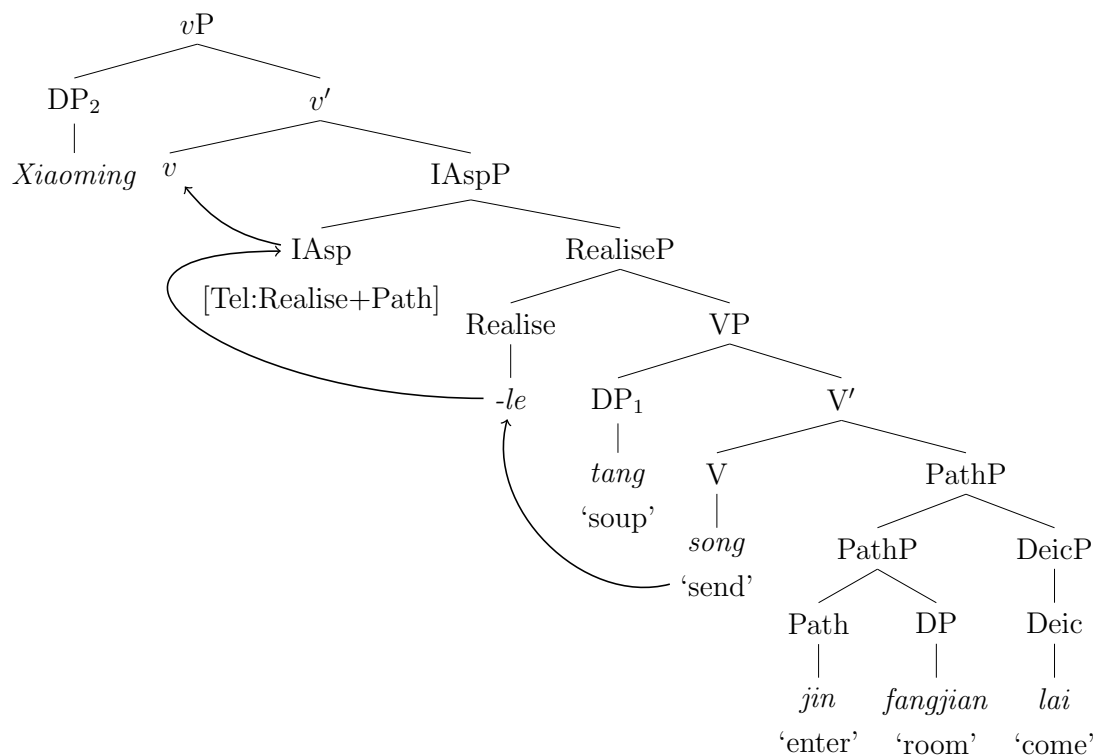
In the ungrammatical *V1 O V2 word order, V1 *song* 'send' is in V and V2 *jin* 'enter' is in Path. After cyclic head movement of V to *v*, the verb cluster *song-le* 'send-Perf' is in *v*. The [Tel:] feature on IAsp is valued by both Realise and Path. Due to Realise being telic, the event is interpreted as telic. The ungrammatical word order *V1 O V2 can be saved by adding a locative argument as the complement of PathP, thus V1 O V2 L. The verb *jin* 'enter' is compatible with the deictic verb, allowing DeicP to adjoin to PathP. When V3 *lai* 'come' appears in Deic, we have another grammatical word order V1 O V2 L V3. In

the case of (47b), V1 is in V and V3 is in Deic. After V undergoes cyclic head movement to v, the word order V1 O V3 is derived.

However, the analysis for V3 in the Path structure seems problematic. Chen (2016) stipulates that when V3 does not directly follow another verb, it is in Deic. In the case of V1 O V3, DeicP adjoins to PathP, which does not have an overt head. It seems odd for DeicP to adjoin to a PathP with no path, in that an adjunct should add extra information to the phrase it adjoins to, rather than the phrase with no real content appearing for the adjunct.

In addition, V3 not directly following another verb can take a locative argument:

(49)   Laowang song tang lai   fangjian.
          Laowang send soup come room
          'Laowang sent the soup to the room (toward me).'

In Chen's (2016) system, lexical insertion is subject to the categorial feature and semantic features. The main verb has the categorial [V] feature, which is identified by the V head. The directional verb has the categorial [V] feature and some semantic features like [track] and [goal]. These semantic features allow the directional verb to be inserted in Path and Res respectively. The deictic verb has the categorial [V] feature and some semantic features such as [goal] and [deictic]. These two semantic features are identified by Res and Deic respectively. In other words, in her system, the deictic verb can appear in V, Res, Deic, but not in Path.

If the Deic head is able to take a locative argument and *fangjian* 'room' in (49) is the complement of DeicP, it makes the existence of PathP even more weird, for it is even more obvious that PathP does not have any function at all. If the Deic head only contains some deictic information, as Chen (2016) claims, V3 in this head cannot take a locative argument. Then, *lai* 'come' in (49) should not be in Deic and should be analyzed as Path with the locative argument *fangjian* 'room' being its complement. However, the deictic verb cannot be in Path in her system, which makes (49) unable to be explained.

When V3 directly follows V2, Chen (2016) argues that it is a genuine compound, in that the aspectual marker cannot appear in between:

(50)   ta jin-(*le)   lai.
          he enter-Perf come
          'He came in.'   (Chen, 2016:243)

Chen (2016) posits that this compound can appear either in Res or in Path. Under the condition that the adjunct DeicP does not appear in the structure, when this compound is in the Res head in the Res structure (for the VVO word order), we have the word order V1 V2-V3 O; when it is in the Path head in the Path structure (for the VOV word order), we have the word order V1 O V2-V3.

With respect to the difference between the two structures, Chen (2016) argues that it lies in telicity. When the aspectual marker *-le* does not appear in the sentence, the Res structure is telic while the Path structure is atelic. In the Res structure, the [Tel:] on IAsp is valued only by Res, which makes the reading telic. In the Path structure, this feature is valued by Path, which results in the atelic reading. According to her, this explains the following contrast. The judgments are from her.

(51)   a.   ta song lai   yi-wang tang, #keshi hai mei dao.
                he send come one-CL soup   but still not arrive

        b.   ta song yi-wan tang lai,   keshi hai mei dao.
                he send one-CL soup come but   still not arrive
                'He brought one bowl of soup, #but it has not arrived.'
                (Chen, 2016:92)

Chen (2016) argues that the VVO word order in (51a) is derived in the Res structure, with *lai* 'come' being in the Res head. Since ResP encodes the result state, the sentence is telic and thus cannot be canceled by the second clause. By contrast, the VOV word order in (51b) is derived in the Path structure, with *lai* 'come' being in the Deic head, the phrase of which adjoins to PathP. Due to PathP simply describing the directed moving track, the sentence is atelic and therefore does not contradict the second clause.

When the aspectual marker *-le* appears in (51), both sentences become infelicitous, according to Chen (2016). The judgments are again from her.

(52)   a.   ta song lai-le   yi-wang tang, #keshi hai mei dao.
                he send come-Perf one-CL soup   but still not arrive

        b.   ta song-le   yi-wan tang lai,   #keshi hai mei dao.
                he send-Perf one-CL soup come   but still not arrive
                'He brought one bowl of soup, #but it has not arrived.'
                (Chen, 2016:91)

Chen (2016) argues that the appearance of the aspectual marker *-le* results in the

telic reading. In the Res structure in (52a), the [Tel:] feature is valued by both Realise and Res. Therefore, the event has the telic reading. On the other hand, in the Path structure in (52b), this feature is valued by both Realise and Path. In spite of Path being atelic, Realise makes the event telic. Thus, the endpoint cannot be canceled by the second clause.

However, (51a) and (52) are felicitous to the native speakers I have consulted. To them, (51a) means that the subject has gone out for delivering the soup but is still on his way. Therefore, the soup has not arrived at the speaker's location yet. In (52), the aspectual marker *-le* does not make the sentence telic. I argue that it stems from Mandarin Chinese being a nontelic language, as Travis (2010) claims. In other words, the endpoint is implied but not entailed. Consequently, the telic reading can be canceled. My informants' judgments for (51) and (52) suggest that Res and Realise *-le* do not encode the telic reading, at least not always, contrary to Chen's (2016) argument.[9]

Even if we assume that her judgments are correct, there is still a problem for the telic vs. atelic distinction in the two structures. Despite the fact that many directional verbs take a goal argument, which may thus have an endpoint, some do not take a goal argument, such as *chu* 'exit, out' and *qi* 'rise, up'. These verbs focus on the beginning point rather than the endpoint. If a sentence with a ResP must have an endpoint, these directional verbs cannot be explained.

Despite the fact that Chen (2016) adopts a different approach for directional serial verbs, her analysis actually shows that directional serial verbs cannot be analyzed in the constructionist approach, at least not in her system. First, if lexical items are inserted in relevant positions with the highest copy being pronounced, it cannot capture the correct word order with the appearance of the optional locative argument. Second, if the directional complement is in the Res head in the VVO word order, it cannot account for cases where the directional complement does not encode the result state, such as *qi* 'rise, up'. While I agree with her that directional serial verbs should be analyzed by more than one structure, I do not agree that they should be analyzed in the same way as resultative verb compounds.

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[9]The first clause in (51a) can have two readings. When the endpoint is not implied, it means that the soup has been out for delivery but is still on its way, which is the reading that makes my informants accept the cancellation by the second clause. When the endpoint is implied, it means that the soup has arrived at the speaker's location, which is the reading that Chen (2016) argues to be the reason why it cannot be canceled by the second clause.

4.5 Directional complements as main verbs

We have seen that directional complements include three types: (1) a directional verb, (2) a deictic verb, and (3) a compound formed by a directional verb and a deictic verb, with the former preceding the latter. Before we examine these three types functioning as directional complements, let us first investigate how they behave when they are used as main verbs.

In Section 4.1, we saw that when a directional verb functions as a main verb, it takes a location as its reference point. Therefore, the locative argument is necessary, as in (1), repeated below:

(1)   a.   Ahua jin   *(huochezhan) le.
             Ahua enter   train station Prt
             'Ahua has entered the train station.'

        b.   Ahua chu *(huochezhan) le.
             Ahua exit   train station Prt
             'Ahua has exited the train station.'

However, not all the directional verbs take a locative argument. For example, *qi* 'rise, up' and *kai* 'away' do not take a locative argument:

(53)   a. *qiqiu   qi   (tiankong).
             balloon rise sky
             Intended: 'The balloon rose to the sky.'

        b. *Aming kai   (huochezhan).
            Aming away train station
            Intended: 'Aming went away from the train station.'

Even if we remove the locative argument in (53a) and (53b), the sentences remain ungrammatical. It seems that *qi* 'rise, up' and *kai* 'away' differ from other directional verbs. They can only be used as directional complements:

(54)   a. *taiyang cong dongfang qi.
            sun   from east   rise

        b.   taiyang cong dongfang sheng qi.
            sun   from east   rise   rise
            'The sun rises in the east.'

(55)   a. *Aming turan   kai.
            Aming suddenly away

        b. Aming turan   pao kai.
            Aming suddenly run away
            'Aming ran away suddenly.'

Since their distributions are distinct from other directional verbs, we will leave them aside for the time being when considering the behavior of the directional verbs.

On the other hand, when a deictic verb functions as a main verb, it takes the speaker as its reference point. Without knowing the exact destination, the meaning can still be conveyed. Thus, the locative argument is optional, as in (2), repeated below:

(2)   a. Ahua lai   (huochezhan) le.
            Ahua come train station Prt
            'Ahua has come to the train station.'

        b. Ahua qu (huochezhan) le.
            Ahua go train station Prt
            'Ahua has gone to the train station.'

When the directional verb and the deictic verb appear simultaneously without another verb treated as a main verb, there are some interesting phenomena. When the two motion verbs co-occur with a locative argument in the sentence, *jin* 'enter, in', *chu* 'exit, out', and *hui* 'return, back' allow two possible word orders. The locative argument can follow either the directional verb or the deictic verb:

(56)   a. Aming jin/chu/hui   huochezhan lai   le.
            Aming enter/exit/return train station come Prt

        b. Aming jin/chu/hui   lai   huochezhan le.
            Aming enter/exit/return come train station Prt
            'Aming has entered/exited/returned to the train station (toward me).'

However, when the directional verb is *shang* 'ascend, up' or *xia* 'descend, down', only one word order is allowed. The locative argument must follow the directional verb:

(57)   a. Aming shang/xia   lou lai le.
              Aming ascend/descend stair come Prt

        b. *Aming shang/xia   lai lou le.
              Aming ascend/descend come stair Prt
              'Aming has come upstairs/downstairs.'

What is more, when the directional verb is *guo* 'pass, by', the position of the locative argument results in asymmetries in meaning:

(58)   a. Aming guo huochezhan lai   le.
              Aming pass train station come Prt
              'Aming has passed the train station and is on his way (to me).'
              'Aming has come to the train station.'

        b. Aming guo lai   huochezhan le.
              Aming pass come train station Prt
              'Aming has come to the train station.'

When the locative argument appears directly after *guo* 'pass, by', as in (58a), there are two interpretations. One is that the subject passed the train station, and the other is that he came to the train station. On the other hand, when the locative argument follows *lai* 'come', as in (58b), there is only one interpretation, that is, the subject coming to the train station.

In (57), if we further examine the relation of the locative argument *lou* 'stair' with the directional verbs *shang* 'ascend, up'/*xia* 'descend, down' and with the deictic verb *lai* 'come', *lou* 'stair' can only be the argument of *shang* 'ascend, up' and *xia* 'descend, down':

(59)   a. Aming shang/xia   lou le.
              Aming ascend/descend stair Prt
              'Aming has gone upstairs/downstairs.'

        b. *Aming lai   lou le.
              Aming come stair Prt
              'Aming has come to the stairs.'

Similarly, in (58), when we further examine cases where *huochezhan* 'train station' is the argument of *guo* 'pass, by' and *lai* 'come' respectively, their meanings vary:

(60)   a. Aming guo huochezhan le.
              Aming pass train station Prt
              'Aming has passed the train station.'

b. Aming lai   huochezhan le.
Aming come train station Prt
'Aming has come to the train station.'

The verb *guo* only means 'pass, by' and the verb *lai* only means 'come'. It appears that in (57b) and (58b), the locative argument is treated as the argument of the deictic verb *lai* 'come' rather than the directional verb. Therefore, (57b) is ungrammatical due to *lou* 'stair' being unable to be the argument of the deictic verb; (58b) has only one interpretation owing to *huochezhan* 'train station' being the argument of the deictic verb. It seems to me that the two meanings in (58a) stem from the location of the speaker. If the speaker is not at the train station, the sentence means 'passing the train station'; if the speaker is at the train station, it means 'coming to the train station'. In fact, some native speakers only allow the first meaning 'passing the train station' for (58a), which makes the distinction between *guo lai* and *guo...lai* even clearer. Then, we may assume that when the locative argument directly follows the directional verb, it is the argument of the directional verb; when it directly follows the deictic verb, it is the argument of the deictic verb.

However, treating the location as the argument of the deictic verb is problematic for the following example:

(61)   a.   Aming chu huochezhan lai   le.
Aming exit train station come Prt

b.   Aming chu lai   huochezhan le.
Aming exit come train station Prt
'Aming has come out of the train station.'

The locative argument of *chu* 'exit, out' is the beginning point of the movement while that of *lai* 'come' is the endpoint. If *huochezhan* 'train station' were the argument of *lai* 'come' in (61b), the sentence should mean the subject arriving at the train station as the endpoint, contrary to fact.

We have seen that a locative argument is necessary for the directional verb due to it being the reference point whereas it is optional for the deictic verb, the reference point of which is the speaker. When both the directional verb and the deictic verb appear in the sentence, the locative argument is optional:

(62)   Aming jin/chu/hui   lai   (huochezhan) le.
Aming enter/exit/return come train station   Prt
'Aming has entered/exited/returned to the train station (toward me).'

It seems that when both the directional verb and the deictic verb appear, the argument structure is the same as the deictic verb (i.e., optional locative argument) while the meaning is related to the directional verb (i.e., the relation between the moving object and the location). Since Chao (1968) and Li and Thompson (1981) treat the adjacent directional and deictic verbs following a main verb as a compound complement, it is possible that it is also a compound when used as a main verb. However, differing from their assumption that some elements can be inserted between the directional compound complement, which we may assume to be derived syntactically, the compound used as a main verb is a lexical compound. The reference point for the directional verb is provided in the meaning of the deictic verb. For example, when the directional verb takes a goal and the deictic verb treats the speaker's location as the endpoint, such as *jin-lai* 'enter-come' and *hui-lai* 'return-come', the speaker's location is the reference point for *jin* 'enter' and *hui* 'return'. When the directional verb takes a source and the deictic verb treats the speaker's location as the beginning point, like *chu-qu* 'exit-go', the speaker's location is the reference point for *chu* 'exit'. When the directional verb takes a source and the deictic verb treats the speaker's location as the endpoint, say, *chu-lai* 'exit-come', the reference point for the directional verb is also included in the deictic verb. If a moving object moves toward a goal, it must have already left the beginning point. In other words, despite the fact that *lai* 'come' shows that the goal is the speaker's location, the concept includes moving away from a source, which is viewed as the reference point for *chu* 'exit'. When the directional verb takes a goal and the deictic verb treats the speaker's location as the beginning point, such as *jin-qu* 'enter-go' and *hui-qu* 'return-go', the reference point of the directional verb is also included in the deictic verb. If the moving object has moved away from a source, there must be a goal where it moves to, regardless of whether it has reached the goal or not. Despite the fact that the goal of the movement for *qu* 'go' is not focused, the concept is still included. Thus, the optional locative argument that *qu* 'go' takes is the reference point for *jin* 'enter' and *hui* 'return'. Even if the locative argument does not appear in the sentence, *qu* 'go' already implies the existence of the goal, which serves as the reference point for *jin* 'enter' and *hui* 'return'. In other words, the deictic verb can be viewed as the locative argument that the directional verb takes, and the two verbs combining together is a lexical compound.

As far as *shang-lai* 'ascend-come' and *xia-lai* 'descend-come' are concerned, the directional verb needs a goal and the deictic verb treats the speaker's location as the endpoint. Why can *shang* 'ascend, up' and *xia* 'descend, down' take *lou* 'stair' as its complement but not *lai* 'come' and the compound, as shown in (57)

and (59)? In addition to *lou* 'stair', the same problem applies to *shan* 'mountain' being the locative argument as well:

(63)   a.   Aming shang/xia   shan   lai   le.
              Aming ascend/descend mountain come Prt

       b.   *Aming shang/xia   lai   shan   le.
              Aming ascend/descend come mountain Prt
              'Aming has come up/down the mountain.'

(64)   a.   Aming shang/xia   shan   le.
              Aming ascend/descend mountain Prt
              'Aming has gone up/down the mountain.'

       b.   *Aming lai   shan   le.
              Aming come mountain Prt
              'Aming has come to the mountain.'

I argue that the ungrammaticality comes from *lou* 'stair' and *shan* 'mountain' not functioning as a goal but rather as an area where movement takes place. The concept can be illustrated as below:

(65)
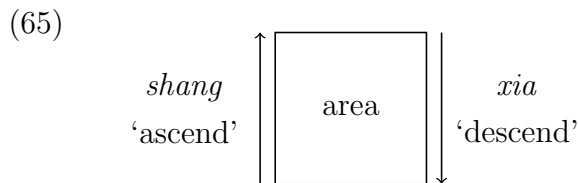
Let us first consider an example where the area is horizontal. When we say 'jogging in the park', movement takes place within the park. The park is the horizontal area for the movement to occur as opposed to a goal or a source for the movement. Similarly, when we say *shang/xia lou* 'go upstairs/downstairs' and *shang/xia shan* 'go up/down the mountain', *lou* 'stair' and *shan* 'mountain' are the vertical area for the movement to happen rather than being a goal for the movement.

A clearer example may be an area being *gongche* 'bus', as in *shang gongche* 'get on the bus' and *xia gongche* 'get off the bus':

(66)   Aming shang/xia   gongche le.
          Aming ascend/descend bus   Prt
          'Aming has got on/off the bus.'

In (66), we will not consider Aming moving from one place to another. Rather,

we will think Aming moving upward or downward within a certain area. This area is where movement occurs.

Therefore, when the stairs are the vertical area for the movement to take place, *shang/xia lou* 'go upstairs/downstairs' is grammatical, but *lai/qu lou* 'come/go to the stairs' is not. However, in addition to 'stair', *lou* can also mean 'floor'. When *lou* means 'floor', it has to be used with a numeral to indicate which floor it is. In this use, *lou* 'floor' is the goal for the movement, thereby allowing two word orders:

(67) a. Aming shang/xia   lai   san lou le.
          Aming ascend/descend come three floor Prt

      b. Aming shang/xia   san lou lai le.
          Aming ascend/descend three floor come Prt
          'Aming has come up/down to the third floor.'

Differing from the concept of *lou* 'stair', when the object is *lou* 'floor', the movement can be schematized as below:

(68)   a.   b.
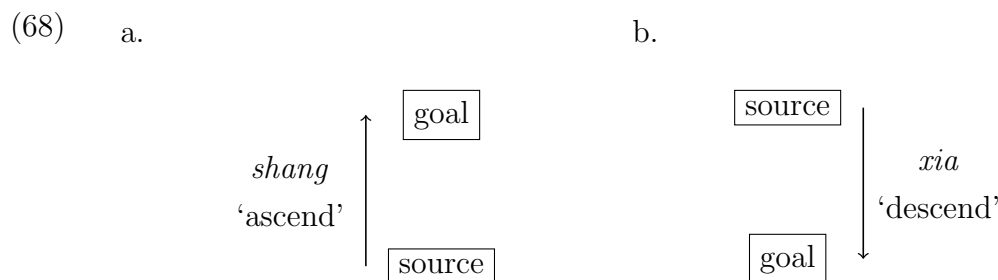
We have argued that the adjacent directional and deictic verbs are a lexical compound. If it is a compound, no elements can be inserted in between. It is true for the appearance of the aspectual marker, as Chen (2016) argues. When there is an aspectual marker in the sentence, it cannot appear between the two verbs and can only appear after the deictic verb:

(69) a. *Aming jin-le-lai   fangjian.
           Aming enter-Perf-come room

      b. Aming jin-lai-le   fangjian.
          Aming enter-come-Perf room
          'Aming has come into the room.'

Some may argue that the potential morphemes *de* 'can' and *bu* 'cannot' can appear between the directional verb and the deictic verb:

(70)   Aming jin   de/bu   lai   fangjian.
           Aming enter can/cannot come room
           'Aming can/cannot come into the room.'

Since the potential morphemes can appear between the two verbs, it should not be considered as a lexical compound. However, it is possible that the deictic verb *lai* 'come' in (70) is a directional complement. In other words, *jin* 'enter, in' is the main verb V1 and *lai* 'come' is V3. When we examined the directional verb *guo* 'pass, by' with a deictic verb, we saw that the two verbs being adjacent differs from them being separate. The former has only one meaning, where the locative argument is a goal or a source, depending on the deictic verb, while the latter has two meanings, where the locative argument may be either a goal/source or a location to pass by. If the potential morphemes *de* 'can' and *bu* 'cannot' do insert in the compound, we would expect the locative argument to be interpreted only as a goal/source and cannot be interpreted as a location to pass by.

Consider the following example:

(71)   Aming guo bu   qu huochezhan.
           Aming pass cannot go train station
           'Aming cannot pass the train station and go.'
           'Aming cannot go to the train station.'

In (71), there are two interpretations. When the locative argument is a location to pass by, a possible situation would be Aming was delivering something to a client. He needed to pass the train station before getting to the destination. However, due to the traffic jam, Aming could not pass the train station. Since this interpretation differs from the compound *guo-qu* 'pass-go', where the locative argument can only be the destination, the fact that the potential morpheme can appear between the directional verb and the deictic verb cannot be an argument to argue against the compound analysis.

The above examples show that the adjacent directional and deictic verbs form a lexical compound, as Chen (2016) argues. If it is a compound, then what is the function of the deictic verb when it does not form a compound with the directional verb but rather follows the object? Specifically, if *lou* 'stair' and *shan* 'mountain' can only be the argument of *shang* 'ascend, up' and *xia* 'descend, down' but not the argument of *shang-lai*, 'ascend-come', *xia-lai* 'descend-come', and *lai* 'come', such as (72), what is the function of the deictic verb in (72a)?

(72)   a.   Aming shang lou/shan   lai   le.
             Aming ascend stair/mountain come Prt

        b. *Aming shang lai   lou/shan   le.
             Aming ascend come stair/mountain Prt
             'Aming has come upstairs/up the mountain.'

        c. *Aming lai   lou/shan   le.
             Aming come stair/mountain Prt
             'Aming has come to the stairs/mountain.'

I leave the investigation to the next chapter.

4.6   Chapter summary

In the three analyses we have examined, they all try to analyze resultative verb compounds and directional verb compounds in the same or similar way. Lu (1972, 1973, 1977) employs the predicate-lowering transformation for directional verb compounds and the predicate-raising transformation for resultative verb compounds. Zou (1995) assumes that each verb has its own argument structure and both compounds are formed by head movement. Chen (2016) proposes that both the directional complement and the resultative complement are in the Res head and the serial verb cluster is derived by head movement. Despite resultative verb compounds and directional verb compounds share some similarities, I do not agree to analyze them in the same or similar way. As we have seen, the resultative complement in resultative verb compounds cannot be separate , but the directional complement in directional verb compounds can; in addition, the second verb has to indicate the result in resultative verb compounds, yet it is not always the case in directional verb compounds. Moreover, the thematic roles related to the arguments in resultative verb compounds are more complicated than directional verb compounds. Also, directional verb compounds allow the object to appear in different positions, which is not possible in resultative verb compounds.

With respect to the number of structures the directional serial verb has, proposals vary. While Lu (1972, 1973) and Zou (1994a, 1995, 2013) argue that there is only one structure, thus one canonical word order, with the rest being derived from it, Lu (1977) and Chen (2016) argue that there are two structures. These analyses also differ in analyzing the adjacent V2 and V3. Lu (1972, 1973, 1977) assumes that V2 is dependent on V3, Zou believes V2 to be a bound morpheme, which may be attached to either V1 or V3, and Chen claims that the adjacent V2 and

V3 form a lexical compound. We have seen that the adjacent directional and deictic verbs as a main verb are a lexical compound. It is likely that they are still a compound as a directional complement. I leave this investigation to the next chapter.

Chapter 5

Analysis for directional serial verbs

This chapter investigates directional serial verbs in Mandarin Chinese. In the previous chapter, we saw that the word order of the directional serial verbs is strict while the object can follow any of the verbs. I have argued that when the directional verb and the deictic verb are adjacent, they form a lexical compound. I leave a question regarding the function of the deictic verb when it follows the object alone (e.g., *lai* 'come' in *shang lou lai* 'come upstairs'). In this chapter, I am going to investigate the function of this deictic verb.

In addition, since directional serial verbs are associated with direction, a locative argument should be considered in all the word orders. However, most of the previous analyses discuss it only in the case of an intransitive V1 but not a transitive V1. Therefore, in the following, I am going to examine directional serial verbs with a locative argument. By looking at the distributions, I then propose a more appropriate analysis for this construction.

The chapter is organized as follows. Section 5.1 examines how directional verbs are used as directional complements. Section 5.2 investigates sentences with both the directional verb and the deictic verb being directional complements, along with the function of the deictic verb when following the object alone. Section 5.3 considers how deictic verbs are used as directional complements. Section 5.4 investigates the two directional verbs that cannot take a locative argument, which are *qi* 'rise, up' and *kai* 'away'. Section 5.5 looks at the aspectual uses of both the directional verb and the deictic verb in Japanese. Section 5.6 concludes this chapter.

5.1 Directional verbs as directional complements

When directional verbs are used as directional complements, in many cases their meanings are not related to movement in space. Liu (1998) uses corpora analysis to analyze the directional complements and categorizes the meanings into three distinct usages: directional, resultative, and stative. In the directional usage, a person or an object moves toward a certain direction in space through some action, as in (1a). Verbs in this usage can either take an argument or a prepositional adjunct to indicate goal or source. In the resultative usage, the action reaches a natural result or achieves some goal, as in (1b) and (1c) respectively. In the former, it is associated with the directional usage; verbs in this usage only allows a prepositional adjunct to express goal or source. In the latter, it has nothing to do with a person or an object moving in space. In the stative usage, it is also irrelevant with movement in space; rather, the action or the state begins or ends, as in (1d), or it extends in time, as in (1e). Verbs in this usage can have neither an argument nor a prepositional adjunct to show goal or source.

(1) a. Ahua (cong hou men) zou shang san   lou le.
   Ahua from back door walk ascend three stair Prt
   'Ahua has walked up to the third floor (from the back door).'

  b. Ahua (zai xinfeng shang) tie   shang-le   yi-zhang youpiao .
   Ahua at   envelope on   stick ascend-Perf one-CL   stamp
   'Ahua stuck a stamp (on the envelope).'

  c. Ahua kao   shang daxue   le.
   Ahua examine ascend university Prt
   'Ahua has passed the university examination.'

  d. Ahua han Laowang gouda shang le.
   Ahua with Laowang collude ascend Prt
   'Ahua has colluded with Laowang.'

  e. Ahua kan bu   xia   shu le.
   Ahua see cannot descend book Prt
   'Ahua cannot continue reading.'

According to Liu (1998), the directional verbs *jin* 'enter, in' and *hui* 'return, back' only have the directional usage.[1] Since we would like to investigate the position of the locative argument in directional serial verbs, in the following, I will mainly employ *jin* 'enter, in' to test the distributions of the locative argument.

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[1] In Liu's classifications, the verb *jin* 'enter, in' has the resultative usage, but it is only limited to the word *ao* 'dent'. We will exclude this word and assume that *jin* 'enter, in' only has the directional usage.

5.1.1 Intransitive V1 with V2

When the main verb is intransitive, it is mainly a motion verb depicting the manner of the movement, such as *zou* 'walk', *pao* 'run', *pa* 'crawl', *tiao* 'jump', and so on:[2]

(2)   a.   Ahua pao jin   huochezhan.   (V1 V2 L)
               Ahua run enter train station
               'Ahua ran into the train station.'

       b.   Ahua pa   chu fangjian.   (V1 V2 L)
               Ahua crawl exit room
               'Ahua crawled out of the room.'

The locative argument can only appear after V2. When it appears between V1 and V2, the sentence becomes ungrammatical:

(3)   a.   *Ahua pao huochezhan jin.   (V1 L V2)
               Ahua run train station enter
               'Ahua ran into the train station.'

       b.   *Ahua pa   fangjian chu.   (V1 L V2)
               Ahua crawl room   exit
               'Ahua crawled out of the room.'

In addition, the appearance of the locative argument after V2 is obligatory, Without the locative argument, the sentence is also ungrammatical:

(4)   a.   *Ahua pao jin.
               Ahua run enter
               'Ahua ran in.'

       b.   *Ahua pao chu.
               Ahua run exit
               'Ahua ran out.'

If we examine the argument structures of these two verbs, the locative argument

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[2]Cheng and Sybesma (1998) argue that in Mandarin Chinese, only *xiao* 'laugh' and *ku* 'cry' are genuine intransitive verbs. Others which we normally assume to be intransitive verbs are in fact transitive verbs with empty or dummy nominal objects. For example, *pao* 'run' can take either an empty nominal object or a dummy nominal object *bu* 'step' (i.e., *pao-bu* 'run-step'). They examine English *run* and Chinese *pao* 'run', both of which can take an overt object (e.g., *run an errand* and *pao shangdian* 'run from shop to shop') and argue that *run* is also a transitive verb, with an empty nominal object. In this thesis, I assume that motion verbs which do not take an overt object, that is, verbs taking an empty nominal object in their analysis, are intransitive verbs.

167

is an argument that V2 takes in that a directional verb needs a location to be its reference point. V1 is a one-place predicate, and the argument it takes is the subject Ahua. Since the locative argument is the argument of V2 as opposed to V1, it is reasonable that the locative argument cannot appear directly after V1 and must follow V2.

5.1.2 Transitive V1 with V2

When the main verb is transitive, one of the main problems that previous researchers try to solve is the acceptability of only one word order, as (7) in Chapter 4, repeated below:

(5)   a. *Ahua na   yi-dai shuiguo jin.   (V1 O V2)
           Ahua take one-CL fruit   enter

       b. Ahua na   jin   yi-dai   shuiguo.   (V1 V2 O)
           Ahua take enter one-CL fruit
           'Ahua took a bag of fruit in.'

As we saw in the previous analyses, a locative argument is usually neglected in such a case, like in Lu (1972, 1973, 1977) and Zou (1994a, 1995, 2013). Since directional serial verbs are associated with direction, a locative argument should be considered. After adding a locative argument in (5), there are four possibilities:

(6)   a. Ahua na   yi-dai shuiguo jin   chufang.   (V1 O V2 L)
           Ahua take one-CL fruit   enter kitchen

       b. *Ahua na   yi-dai   shuiguo chufang jin.   (V1 O L V2)
           Ahua take one-CL fruit   kitchen enter

       c. *Ahua na   jin   yi-dai   shuiguo chufang.   (V1 V2 O L)
           Ahua take enter one-CL fruit   kitchen

       d. Ahua na   jin   chufang yi-dai   shuiguo.   (V1 V2 L O)
           Ahua take enter kitchen one-CL fruit
           'Ahua took a bag of fruit into the kitchen.'

Examples (6a-b) come from (5a) after adding a locative argument and examples (6c-d) come from (5b) after adding a locative argument. Compared (6a) and (6b), the locative argument has to appear directly after V2 (6a); when it precedes V2 (6b), the sentence is ungrammatical. If we examine (6a) and (5a), we can see that (5a) becomes grammatical after adding a locative argument. This conforms to what we argued in Section 4.2. That is, V2 is not dependent on another verb,

which also shows that it is not a bound morpheme; rather, it requires a locative argument in its argument structure. If V2 were a bound morpheme in directional serial verbs, as Zou (1994a, 1995, 2013) argues, (6a) should be unacceptable, given that V2 is not bound with V1. On the other hand, compared (6c) and (6d), the locative argument again has to directly follow V2 (6d); when it does not appear directly after V2 (6c), the sentence is ungrammatical. Example (6) shows that when a locative argument appears in the sentence, it must directly follow V2, regardless of the word order between the verbs and the object. Since V2 needs a location to be its reference point, it is reasonable that the locative argument must directly follow it.

One may assume that (6d) is derived from (6a) by moving the verb phrase *jin chufang* 'enter the kitchen' to a position between V1 and the object at some point in the derivation. However, if that is the case, it cannot explain why *chufang* 'kitchen' is obligatory in (6a) but optional in (6d). In addition, consider cases where an aspectual marker affixes to V1:

(7)   a.   Ahua cengjing na-guo   yi-dai   shuiguo jin   chufang.
            Ahua ever   take-Exp one-CL fruit   enter kitchen

        b. *Ahua cengjing na-guo   jin   chufang yi-dai   shuiguo.
            Ahua ever   take-Exp enter kitchen one-CL fruit

        c.   Ahua cengjing na   jin-guo   chufang yi-dai   shuiguo.
            Ahua ever   take enter-Exp kitchen one-CL fruit
            'Ahua has taken a bag of fruit into the kitchen before.'

If (6d) is derived from (6a), it is expected for the aspectual marker to remain affixing to V1 after phrasal movement. However, as can be seen in (7b), such a sentence is ungrammatical. The aspectual marker *-guo* can only follow V2, as shown in (7c). This suggests that (6d) is not derived from (6a).

Furthermore, consider sentences with an adverb. A manner adverb is regarded as a modifier to the verb phrase. Adding an adverb *xunsude* 'quickly' to (6a) and (6d), we can see that they do not behave the same:

(8)   a.   Ahua xunsude na   yi-dai   shuiguo jin   chufang.
            Ahua quickly take one-CL fruit   enter kitchen
            'Ahua quickly took a bag of fruit into the kitchen.'

        b.   Ahua na   yi-dai   shuiguo xunsude jin   chufang.
            Ahua take one-CL fruit   quickly enter kitchen
            'Ahua took a bag of fruit and quickly entered the kitchen.'

(9) a. Ahua xunsude na   jin   chufang yi-dai   shuiguo.
         Ahua quickly   take enter kitchen one-CL fruit
         'Ahua quickly took a bag of fruit into the kitchen.'

     b. *Ahua na   xunsude jin   chufang yi-dai   shuiguo.
         Ahua take quickly   enter kitchen one-CL fruit
         Intended: 'Ahua took a bag of fruit and quickly entered the kitchen.'

Example (8) comes from (6a) after adding a manner adverb before the verb and example (9) comes from (6d) after adding a manner adverb before the verb. In (8a), the adverb *sunxude* 'quickly' is an adjunct to the verb phrase 'take a bag of fruit into the kitchen'; in (8b), it only modifies 'enter the kitchen'. If (6d) is derived from (6a), it should be possible for the adverb to modify only *jin chufang* 'enter the kitchen' in (6d). However, as we can see in (9), while the adverb *xunsude* 'quickly' can modify 'take a bag of fruit into the kitchen' (9a), it fails to only modify 'enter the kitchen' (9b). This again suggests that (6d) is not derived from (6a).

Since the two word orders do not include one of them being canonical, it is reasonable to assume two different configurations representing the two word orders. Therefore, I agree with Lu (1977) and Chen (2016) that directional serial verbs should be analyzed by two structures rather than one. The challenge for the two-structure analysis would be to account for the locative argument being obligatory in one word order but optional in the other. Before we propose analyses for both word orders, let us first look at possible positions for endpoints in the structure proposed by Travis (2010).

5.1.3 Telicity in the structure

In the situation aspect, one important factor to determine which aspectual verb class a verb phrase belongs to is telicity, that is, whether or not the event has a natural endpoint. Activities and states are nontelic whereas accomplishments and achievements are telic. Travis (2010) argues that there are three possible positions to encode the endpoint of the event, which are X, IAsp, and v, as illustrated below:

(10)

```
            vP
           /  \
              v′
             /  \
            v    IAspP
                 /  \
                    IAsp′
                    /  \
                 IAsp   VP
                        /  \
                          V′
                         /  \
                        V    XP
                             |
                             X
```
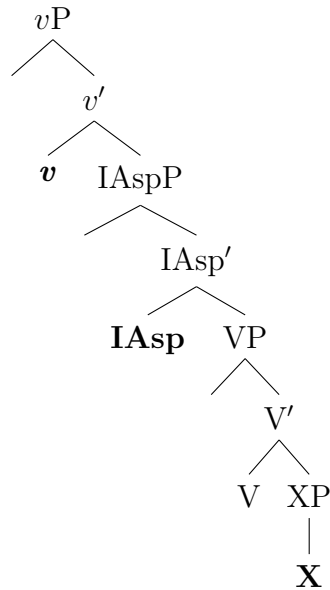
X is the position for goal or resultative in English. When an endpoint is added to this position, an activity becomes an accomplishment:

(11)   a.   Mary pushed a cart.   (activity)
       b.   Mary pushed a cart <u>into the garage</u>.   (accomplishment)
       c.   Mary hammered the nail.   (activity)
       d.   Mary hammered the nail <u>flat</u>.   (accomplishment)
            (Travis, 2010:109)

When an endpoint is not added to the activity, as in (11a) and (11c), they can be modified by the duration adverbial such as 'for three hours' but not the frame adverbial like 'in three hours'. However, when a goal or a result is added, which is shown by the underlined phrase in (11b) and (11d), the event becomes an accomplishment and thus can be modified by 'in three hours' but not 'for three hours'.

The second position to encode the natural endpoint is IAsp, which is responsible for computing the situation aspect. When IAsp has the [+telic] feature, the event is telic. For example, in Malagasy, a nontelic language, the endpoint of the event is implied but not entailed. Therefore, the endpoint is defeasible:

(12)   a.   namory   ny   ankizy   ny   mpampianatra.   (n+an+$\sqrt{\text{vory}}$)
            PST.AN.meet DET children DET teacher
            'The teacher gathered the children together.'

b.   ... nefa tsy   nanana   fotoana izy.
      ... but NEG PST.have time   3P
      '... but s/he didn't have time.'   (Travis, 2010:250)

In order to entail an endpoint, another verb form, *aha*, is used, as illustrated below:

(13)   a.   nahavory   ny ankizy ny mpampianatra. (n+a+ha+$\sqrt{\text{vory}}$)
         PST.A.HA.meet the children the teachers
         'The teachers gathered the children.'
     b. *... nefa tsy   nanana   fotoana izy.
         ... but NEG PST.have time   3P
         '... but they didn't have time.'   (Travis, 2010:251)

According to Travis (2010), in (12a), the affix *an* (shown in gloss) in *namory* is a causative in *v* while in (13a), the affix *aha* (shown in gloss) in *nahavory* includes a stative *a* in *v* and a telic *ha* in IAsp. It is the affix in IAsp that encodes [+telic] and ensures the completion of the event.

The third position to encode the natural endpoint is *v*. Taking Bulgarian as an example, preverbs in *v* can mark telicity, scoping over the event-measuring DP (Travis, 2010:247, taken from Slabakova, 2001:89):

(14)   toj na-pis-a$^{\text{P}}$ pisma *3 časa/za 3 časa.
      he PV-write-3SG/AOR letters *for 3 hours/in 3 hours
      'He wrote letters in 3 hours.'

In (14), *na* is the preverb in *v*. Despite the fact that the DP *pisma* 'letters' appears in the sentence, which is supposed to make the event atelic, the event is telic rather than atelic, as we can see by the modification of the adverbials. This shows that the preverb scoping over the DP makes the event telic.

In addition to the natural endpoint, Travis (2010) argues that IAsp and *v* can also encode the beginning point. Take again Malagasy *aha*, with *ha* being in IAsp, as an example. We have seen that it encodes an endpoint. However, when added to an activity event, it refers to the beginning point, as shown in (15b):

(15)   a.   nandihy   ny ankizy.
         PST.AN.dance the children
         'The children danced.'

b. nahadihy   ny ankizy.
   PST.A.HA.dance the children
   'The children were able (to begin) to dance.'   (Travis, 2010:251)

Another example is in Bulgarian. When a preverb, the position of which is in v, like *za* in (16), is added to an activity event, it also refers to the beginning point of the event:

(16)   toj za-tancuva   vals   mnogo dobre.
        he PV-danced-AOR waltz very   well
        'He began waltzing well' OR 'He learned to waltz well.'   (Travis, 2010:249)

Apart from the natural endpoint and the beginning point of the event, v can also encode an arbitrary endpoint, as the preverb *po* in Polish shows:

(17)   Maria po-czyta-la   ksiazke.
        Maria po-read-PAST book
        'Maria read a book for a while.'   (Travis, 2010:249)

To summarize, there are three positions to show the natural endpoint, which are v, IAsp, and X. Among these positions, v and IAsp can further encode the beginning point. Moreover, v can also represent the arbitrary endpoint. It is IAsp and X that are important for us to analyze the two different word orders. Now we are ready to propose the two structures for directional serial verbs.

5.1.4   V2 as a resultative

Examining the event class of (6a), repeated below, it should be an accomplishment event. The event is accomplished when the bag of fruit reaches the kitchen.[3]

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[3]While (6a) is compatible with the duration adverbial 'for an hour', the duration modifies the time of the result state rather than the time the event takes:

(i)   Ahua yijing na yi-dai shuiguo jin   chufang yi xiaoshi le.
        Ahua already take one-CL fruit   enter kitchen one hour   Prt
        'Ahua has already taken a bag of fruit into the kitchen for an hour.'

However, it does not mean that (6a) is an achievement, as it is possible to use the *take* time construction to show the duration of the event:

(ii)   Ahua hua-le   yi xiaoshi na yi-dai shuiguo jin   chufang.
        Ahua spend-Perf one hour   take one-CL fruit   enter kitchen
        'It took Ahua an hour to take a bag of fruit into the kitchen.'

When we examine further, V1 *na* 'take' is an activity verb. If we only consider V1 and its argument structure, it is compatible with the duration adverbial 'for an hour', as shown in (18):

(6a)   Ahua na   yi-dai shuiguo jin   chufang.   (V1 O V2 L)
       Ahua take one-CL fruit   enter kitchen
       'Ahua took a bag of fruit into the kitchen.'

(18)   Ahua yijing   na-zhe   yi-dai   shuiguo yi   xiaoshi le.
       Ahua already take-Dur one-CL fruit   one hour   Prt
       'Ahua has already been holding a bag of fruit for an hour.'

Since the event denoted by V1 is an activity event and the whole event is an accomplishment event, I agree with Zou (1994a, 1995, 2013) that directional serial verbs are a complex event, with V2 showing the result state. Therefore, the event denoted by V2 is the complement of V1.

Because V2 is a motion verb, there must be something undergoing movement. When V1 is intransitive, it is the subject that moves to the location. When V1 is transitive, it is the object that moves. In (6a), it seems that both the subject and the object undergo movement, which may make some people argue that what undergoes movement is the subject, and the object moves with the subject. However, there are some verbs that clearly show that the subject does not move with the object, such as the following example:

(19)   a.   Laowang ji   yi-fen   wenjian   hui   bangongshi.
            Laowang mail one-CL document return office
            'Laowang posted a document back to the office.'
       b.   Laowang diu   yi-kuai qian   jin   xuyuanchi.
            Laowang throw one-CL money enter wishing well
            'Laowang threw one dollar into the wishing well.'

In (19a), Laowang only posts the document and does not return the office with the document. Therefore, the document is the only entity that undergoes movement. In (19b), Laowang is the person to throw one dollar, which makes the money undergo movement to the wishing well. Obviously, Laowang does not go into the wishing well with the money. While the subject selected by some verbs may move to the location with the object, it is not always the case, as we can see here. Thus, what undergoes movement should be the object of V1, when it is transitive.

I argue that the event denoted by V2 is an additional predicate signaling the resultative of the whole event. As we saw in (11), repeated below, 'pushed a cart' and 'hammered the nail' are activities. The additional predicate 'into' and 'flat' make activities become accomplishments, that it, from atelic to telic.

(11) a. Mary pushed a cart.   (activity)
      b. Mary pushed a cart <u>into the garage</u>. (accomplishment)
      c. Mary hammered the nail.   (activity)
      d. Mary hammered the nail <u>flat</u>.   (accomplishment)
          (Travis, 2010:109)

Beavers (2012:208) states that in the resultative constructions in English, 'the V and XP independently denote eventualities (a dynamic event for the V and a state or stative eventuality for the XP), but together represent a single, derived eventuality, with no overt indication of the nature of the composition', where XP represents the resultative phrase, as shown below:

(20) a. John hammered the metal [$_{\text{AdjP}}$ flat].
      b. John hammered the metal [$_{\text{PP}}$ into a ball].
      c. John painted the barn [$_{\text{DP}}$ a fiery red].   (Beavers, 2012:209)

In (20), what is in the brackets is the resultative phrase. Despite the fact that in directional serial verbs in Mandarin Chinese, the resultative V2 is a dynamic verb, both V1 and V2 do independently denote eventualities and represent a single event together. In addition, Beavers states that '[r]esultatives typically indicate a change-of-state, though it is also generally thought... that motion Vs with PPs indicating goals also constitute resultatives (e.g., *He walked/ran (to the store)*)' (Beavers, 2012:209). Ramchand (2008:110) states that '[r]ecent work on the syntactic behaviour of PPs has converged on the idea that the P head must be decomposed into Path and Place, with the Path head embedding the PlaceP in the structure'. According to her, the Path heads include at least *to*, *from*, and *via*. Therefore, in the case of *to the store*, it is a PathP headed by *to*. Despite the fact that the PP indicating the goal is not exactly the same as the additional predicate, such as (20), I treat it as a type of resultative, as Beavers claims.

In contrast to English, where the path is expressed by the preposition, in Mandarin Chinese, the path can also be expressed by the verb:

(21) Laowang pao jin   fangjian.
      Laowang run enter room
      'Laowang ran into the room.'

If the path is a type of resultative, it is reasonable to treat V2 as a resultative in directional serial verbs. Since V2 is a verb, it should have its own argument structure. I argue that (6a) should have the following structure, where Res refers to resultative, which is X in Travis (2010):

(22)

vP
  DP
    Ahua
  v'
    v
    IAspP
      IAsp
      VP
        DP$_i$
          yi-dai shuiguo
          'a bag of fruit'
        V'
          V
            na
            'take'
            (V1)
          ResP
            PRO$_i$
            Res'
              Res
                jin
                'enter'
                (V2)
              DP
                chufang
                'kitchen'
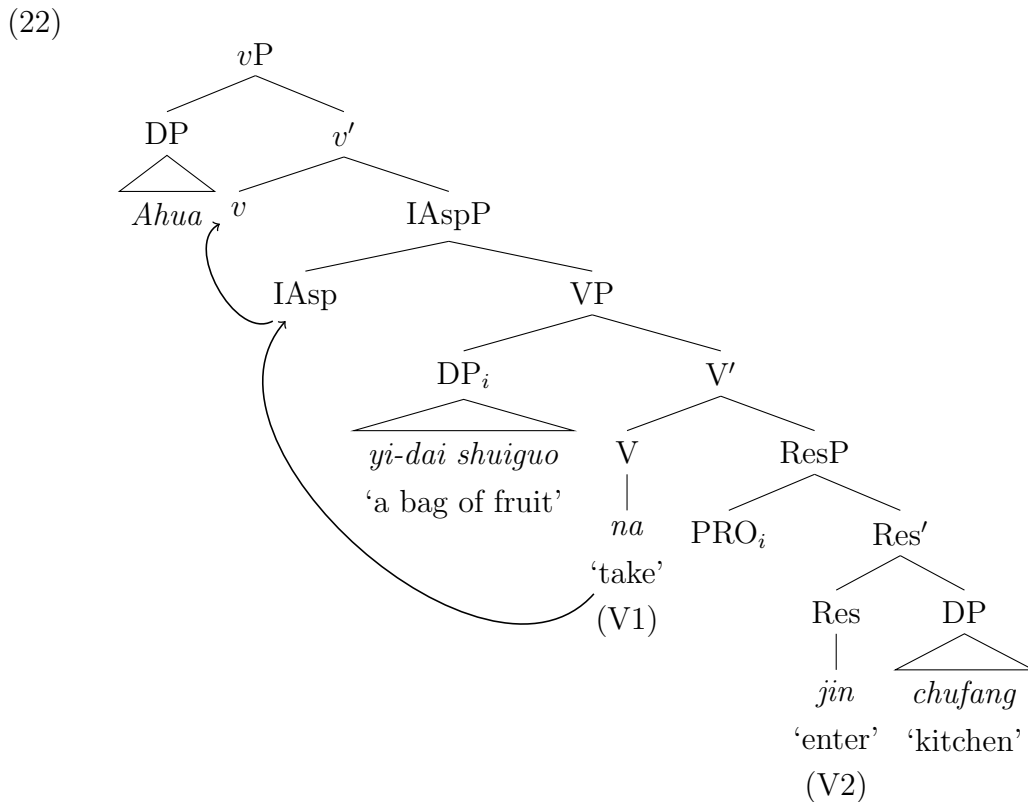
In (22), the event designated by V2 is the resultative showing the path. In the argument structure of V2 *jin* 'enter', PRO is the theme in the Spec,ResP, co-indexed with the nearest DP c-commanding it, and the locative argument *chufang* 'kitchen' is in the complement position. This event is the complement of the event denoted by V1. V1 also has its own argument structure. The transitive V1 *na* 'take' selects an object merged in the Spec,VP. Since this object is the nearest DP c-commanding PRO, PRO is controlled by it. (When V1 is intransitive, such as *zou* 'walk', no element is in the Spec,VP; then the only controller for PRO is the subject.) After V undergoes cyclic head movement to v, the word order V1 O V2 L is derived. Due to V2 *jin* 'enter' assigning a goal θ-role, a locative argument is necessary, which explains the ungrammatical *V1 O V2 word order.

Note that despite the fact that in (22), the subject Ahua reaches the kitchen with the bag of fruit, it does not mean that PRO should be controlled by the subject Ahua. As we have argued, whether the subject reaches the endpoint or not depends on the main verb. If the main verb is *ji* 'mail' or *diu* 'throw', the subject does not move with the object. Regardless of the subject moving to the endpoint or not, the object must reach the endpoint. This shows that in the case of a transitive main verb, PRO should be controlled by the object as opposed to the subject.[4]

5.1.5 V2 as an inner aspect

Now let us turn to the other word order, V1 V2 (L) O, as illustrated in (6d), repeated below:

(6d)   Ahua na   jin   chufang yi-dai   shuiguo.   (V1 V2 L O)
        Ahua take enter kitchen one-CL fruit
        'Ahua took a bag of fruit into the kitchen.'

In (6d), unlike the resultative V2, the locative argument is optional. When this argument does not appear, we have the word order V1 V2 O. Since the locative argument is not necessary, it is possible that V2 does not function as a full verb, which may account for the optional *chufang* 'kitchen'.

I argue that V2 in this word order is an inner aspect in the sense of Travis (2010), which is a functional head. V2 as a functional head does not have its own argument structure, so it does not take a locative argument, hence the word order V1 V2 O. However, it is still possible for the locative argument to appear in the sentence. If V2 as an inner aspect does not need to take a locative argument, how should we account for the optional locative argument, that is, the word order V1 V2 L O?

Travis (2010) proposes that IAsp may assign a θ-role to its specifier position. The θ-role to be assigned is not specified. If the θ-grid of the verb includes an external argument, it may be early discharged in this specifier position. When the external argument is in this position, it is nonvolitional. If there is no θ-role left from the θ-grid of the verb, an additional θ-role will be assigned to this specifier position by IAsp.

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[4]Since V1 and V2 share the same logical argument, theme, the structure can also be analyzed by Baker's (1989) SVC. However, to satisfy the θ-Criterion, I assume that the theme θ-role of V2 *jin* 'enter' is assigned to PRO.

For example, in Malagasy, the verb form *aha* has two meanings listed in the dictionary, which are abiliative and causative (Travis, 2010:222):

(23)   a.   nahaongotra   ravina tamin'ny   tanana Rabe.   (abilitative)
                PST.A.HA.pull.out root   PST.with'DET hands Rabe
                'Rabe was able to pull out the roots with his hands.'
        b.   mahatsara   ny trano ny voninkazo.   (causative)
                PRES.A.HA.beautiful DET house DET flowers
                'The flowers make the house beautiful.'

The reading of the sentence depends on the meaning of the root. If the root is eventive, it has the abilitative reading. If the root is noneventive, it has the causative reading. In the abilitative reading (23a), the θ-grid of the verb includes an agent and a theme. The verb form *aha*, with *ha* being in IAsp, triggers the agent θ-role to early discharge in the Spec,IAspP. The argument in this position is nonvolitional, therefore the abilitative reading. On the other hand, in the causative reading (23b), the θ-grid of the verb only has one θ-role, which is assigned in the specifier position of the predicate head. With no θ-role left from the θ-grid, IAsp assigns an additional θ-role to its specifier position, hence an additional argument. Travis (2010) claims that the default θ-role in Malagasy is Cause. Therefore, 'the flowers' in (23b) is assigned a Cause θ-role in the Spec,IAspP and is nonvolitional.

Following Travis (2010), I argue that when V2 is in IAsp, it may assign an additional θ-role. However, differing from her examples that the additional argument is an external argument, I postulate that the overt IAsp head in Mandarin Chinese assigns the θ-role depending on the meaning of this head. When IAsp is *jin* 'enter', it assigns a goal θ-role to its specifier position, and the argument assigned the goal θ-role in this position measures out the event, as how the event-measuring DP object does. When IAsp is *chu* 'exit', it assigns a source θ-role to its specifier position, given that *chu* 'exit' encodes the beginning point rather than the endpoint.

Under the assumption that V2 is an inner aspect, (6d) can be represented as below:

(24)
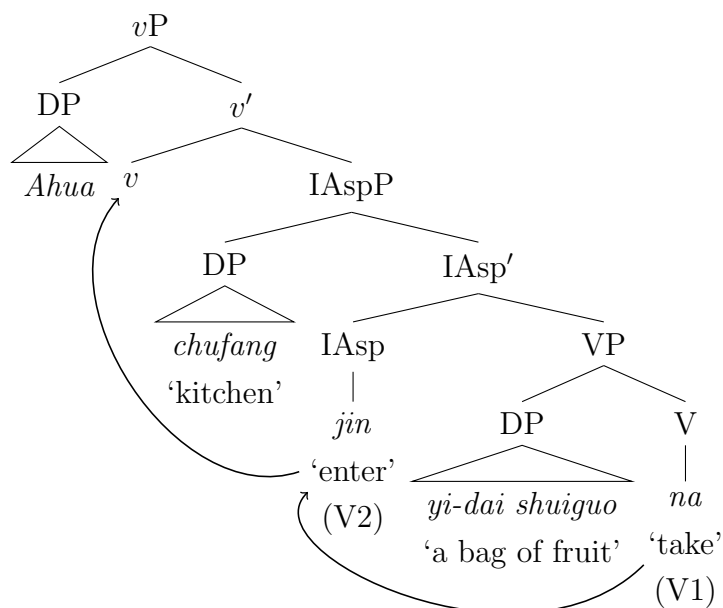
In (24), V1 *na* 'take' takes the object *yi-dai shuiguo* 'a bag of fruit' as its specifier. This VP is selected by IAsp, V2 *jin* 'enter', which assigns an additional θ-role, goal, to *chufang* 'kitchen' in its specifier position. When V1 *na* 'take' undergoes cyclic head movement to v, it first stops by V2 *jin* 'enter', making the cluster *na jin* 'take enter' in v. We then have the word order V1 V2 L O.[5]

The structure explains why the aspectual marker cannot occur between V1 and V2, and why the manner adverb can only modify 'take a bag of fruit into the kitchen' rather than 'enter the kitchen', as seen in (7b) and (9) respectively, repeated below:

(7b)   *Ahua cengjing na-guo   jin   chufang yi-dai   shuiguo.
       Ahua ever   take-Exp enter kitchen one-CL fruit
       'Ahua has taken a bag of fruit into the kitchen before.'

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[5]Xuan (2011) claims that the resultative complement (e.g., *po* 'break' in *da-po* 'hit-break') is an inner aspect, which she proposes a Telic Phrase (TelP) to accommodate it. However, if the inner aspect is a functional projection, as Travis (2010) argues, only limited elements can head this projection. While the directional complements are limited, the resultative complements are not. Therefore, TelP should be better analyzed as a lexical projection as opposed to an inner aspect.

(9)   a. Ahua xunsude na   jin   chufang yi-dai   shuiguo.
             Ahua quickly   take enter kitchen one-CL fruit
             'Ahua quickly took a bag of fruit into the kitchen.'

       b. *Ahua na   xunsude jin   chufang yi-dai   shuiguo.
             Ahua take quickly enter kitchen one-CL fruit
             Intended: 'Ahua took a bag of fruit and quickly entered the kitchen.'

The verb cluster *na jin* 'take enter' in *v* is derived by head movement. Because the aspectual marker is in Asp, which is higher than *v*P, it cannot appear between the two verbs and can only follow the second verb *jin* 'enter'. In addition, *jin chufang* 'enter the kitchen' does not form a constituent in this structure; thus, the manner adverb cannot modify this phrase.

Recall that the outer aspect, which is between TP and *v*P, calculates the viewpoint aspect, such as perfective and imperfective, whereas the inner aspect calculates the situation aspect, like state, activity, accomplishment, and achievement. Despite the fact that both of them are functional projections associated with aspect, the former cannot introduce an additional argument but the latter can. In Chapter 3, we mentioned that Tsai (2008) argues three positions for the viewpoint aspect. The middle aspect, which is for durative *-zhe* and perfective *-le*, is between *v*P and VP. While the positions of his middle aspect and my inner aspect are very similar, they are not the same projection. His middle aspect is for viewpoint aspect while my inner aspect is for situation aspect. In addition to the aspectual markers *-le*, *-guo*, *-zhe* and *zai*, I have argued that the pre-VP and the post-VP deictic verb are viewpoint aspects as well. Therefore, these deictic verbs also cannot take an argument, unlike the inner aspect.

Compared the two different word orders, V2 appearing immediately after V1 is an inner aspect whereas V2 following the object is a resultative. Since an inner aspect is a functional head and a resultative is a lexical head, it accounts for why a locative argument is obligatory when V2 is a resultative while it is optional when V2 is an inner aspect.

Consider again the resultative usage and the stative usage in the sense of Liu (1998), as shown in (25) and (26) respectively:

(25)   a. xiao nanhai lou   chu canlan de xiaorong.   (V1 V2 O)
             little boy   show exit bright DE smile

       b. *xiao nanhai lou   canlan de xiaorong chu.   (V1 O V2)
             little boy   show bright DE smile   exit
             'The little boy (began to) show a bright smile.'

(26)   a.   Laowang turan   ting xia   jiaobu.   (V1 V2 O)
             Laowang suddenly stop descend footstep

       b.   *Laowang turan   ting jiaobu   xia.   (V1 O V2)
             Laowang suddenly stop footstep descend
             'Suddenly, Laowang stopped his footsteps.'

We have seen that a locative argument cannot appear in the resultative usage and the stative usage, for V2 already loses its spatial meaning. Therefore, in these two usages, only one word order is possible. V2 can only be an inner aspect, which immediately follows V1, and cannot be a resultative, which follows the object.

In this section, we examined sentences where only V2 functions as a directional complement. I have argued that the two different word orders come from two distinct syntactic configurations. In one structure, V2 is a lexical head in the resultative position, therefore having its own argument structure. In the other structure, V2 is a functional head functioning as an inner aspect between the VP shells, with the possibility to assign an additional θ-role, hence an optional locative argument. When V2 directly follows V1, it is an inner aspect, and when V2 follows the object, it is a resultative. In the following, I will use these distributions to examine the position of other directional complements.

5.2   Directional and deictic verbs as directional complements

In this section, I am going to examine sentences where both V2 and V3 function as directional complements. I will again add a locative argument to see its possible positions and propose the structures for the different word orders.

5.2.1   Intransitive V1 with V2 and V3

When the main verb is intransitive, it is usually a motion verb such as *pao* 'run' and *fei* 'fly'. When a locative argument is added to the sentence, it can follow either V2 or V3, but not V1:

(27)　　a.　*Ahua pao chufang jin　　lai.　　　　　(V1 L V2 V3)
　　　　　　　Ahua run kitchen enter come

　　　　b.　Ahua pao jin　　chufang lai.　　　　　(V1 V2 L V3)
　　　　　　Ahua run enter kitchen come

　　　　c.　Ahua pao jin　　lai　　chufang.　　　　(V1 V2 V3 L)
　　　　　　Ahua run enter come kitchen
　　　　　　'Ahua ran into the kitchen (toward me).'

If we consider the argument structure of each verb, V1 only takes one argument, and this argument is the subject Ahua. Since *pao* 'run' does not take a locative argument, it is reasonable that (27a) is ungrammatical. The directional verb V2 takes a locative argument to be its reference point. Therefore, it is not surprising that the locative argument can directly follow V2. The deictic verb V3 can also take a locative argument to indicate the endpoint of the movement, thus allowing the locative argument to follow it.

Consider the following example:

(28)　　a.　Ahua pao chu chufang lai.　　　　　　(V1 V2 L V3)
　　　　　　Ahua run exit kitchen come

　　　　b.　Ahua pao chu lai　　chufang.　　　　　(V1 V2 V3 L)
　　　　　　Ahua run exit come kitchen
　　　　　　'Ahua ran out of the kitchen (toward me).'

I have argued that the adjacent directional and deictic verbs form a lexical compound when used as a main verb. In the compound *chu-lai* 'exit-come', it includes *chu* 'exit', the locative argument of which is a source, and *lai* 'come', the locative argument of which is a goal. While the locative argument of *chu-lai* 'exit-come' is the source, which is on a par with *chu* 'exit', this argument is optional, the behavior of which is the same as the locative argument of *lai* 'come'. In (28b), *chu-lai* 'exit-come' as a directional complement has the same meaning and usage as when it is used as a main verb. The locative argument *chufang* 'kitchen' is the source and is optional. Therefore, I argue that the adjacent V2-V3 as a directional complement is also a lexical compound. If we look at the distribution of the potential morphemes *de* 'can' and *bu* 'cannot', they can only appear directly after V1 and cannot appear between V2 and V3:

(29) a. Ahua pao de/bu   jin   lai   chufang.   (V1 de/bu V2 V3)
          Ahua run can/cannot enter come kitchen

      b. *Ahua pao jin   de/bu   lai   chufang.   (V1 V2 de/bu V3)
          Ahua run enter can/cannot come kitchen
          'Ahua can/cannot run into the kitchen (toward me).'

In addition to the potential morphemes being unable to appear between V2 and V3, when an aspectual marker appears in the sentence, it cannot appear between V2 and V3 either:

(30) a. Ahua pao jin   lai-guo   chufang.   (V1 V2 V3 Asp)
          Ahua run enter come-Exp kitchen

      b. *Ahua pao jin-guo   lai   chufang.   (V1 V2 Asp V3)
          Ahua run enter-Exp come kitchen
          'Ahua has run into the kitchen (toward me) before.'

Following Chen (2016), I argue that the adjacent V2-V3 directional complement is a lexical compound. If it is a lexical compound, nothing can appear in between, not a potential morpheme and an aspectual marker, let alone a locative argument. If a locative argument cannot appear between the compound, a question arises as to the usage of V3 when it does not directly follow V2, as in (27b) and (28a). We will come back to this question later. Let us first move on to the case of the transitive V1.

5.2.2 Transitive V1 with V2 and V3

When the directional complement includes only V2, I have argued that there are two structures. In one structure, V2 is a resultative; in the other structure, V2 is an inner aspect. I have also argued that 'directional verb + deictic verb' is a lexical compound whether it is used as a main verb or a directional complement. In this subsection, I am going to use them to propose structures for the three different word orders, such as (5) in Chapter 4, repeated below:

(31)   a.   Ahua na yi-dai shuiguo jin   lai.   (V1 O V2 V3)
            Ahua take one-CL fruit   enter come

       b.   Ahua na jin   yi-dai shuiguo lai.   (V1 V2 O V3)
            Ahua take enter one-CL fruit   come

       c.   Ahua na jin   lai yi-dai shuiguo.   (V1 V2 V3 O)
            Ahua take enter come one-CL fruit
            'Ahua brought a bag of fruit in.'

Let us first examine (31a). Consider cases when a locative argument is added to the sentence, as shown below:

(32)   a.   Ahua na yi-dai shuiguo jin   lai   chufang. (V1 O V2 V3 L)
            Ahua take one-CL fruit   enter come kitchen

       b.   Ahua na yi-dai shuiguo jin   chufang lai.   (V1 O V2 L V3)
            Ahua take one-CL fruit   enter kitchen come

       c.   *Ahua na yi-dai shuiguo chufang jin   lai.   (V1 O L V2 V3)
            Ahua take one-CL fruit   kitchen enter come

       d. #Ahua na   chufang yi-dai shuiguo jin   lai.   (V1 L O V2 V3)
            Ahua take kitchen one-CL fruit   enter come
            'Ahua brought a bag of fruit into the kitchen.'

As we can see, the locative argument can only appear either directly after V2 (32b) or directly after V3 (32a). When the locative argument appears directly after the object (32c), the sentence is ungrammatical. When the locative argument appears between V1 and the object (32d), it is grammatical only under the interpretation that the locative argument *chufang* 'kitchen' is a modifier to the object *yi-dai shuijuo* 'a bag of fruit', that is, 'a bag of fruit in the kitchen'. In this interpretation, the bag of fruit moves from the kitchen to the speaker, which differs from (32a) and (32b), where the speaker is in the kitchen. Therefore, (31a) can only come from either (32a) or (32b) after the deletion of the locative argument.

In (32a) and (32b), the directional complement does not directly follow V1 but rather follows the object, which shows that the directional complement should be a resultative in Res. In (32a), *chufang* 'kitchen' is the argument of the compound *jin-lai* 'enter-come'; in (32b), it is the argument of the verb *jin* 'enter'. We have seen that the locative argument is optional for *jin-lai* 'enter-come' but necessary for *jin* 'enter':

(33) a. Ahua jin-lai   (chufang) le.
          Ahua enter-come kitchen   Prt
          'Ahua has come into the kitchen.'

      b. Ahua jin   *(chufang) le.
          Ahua enter   kitchen   Prt
          'Ahua has entered the kitchen.'

If (31a) is from (32b), the sentence should be ungrammatical in that *jin* 'enter' requires a locative argument, which cannot be omitted. Since the sentence is grammatical, it should be from (32a), where the locative argument is optional. As a consequence, (31a) and (32a) should have the following structure:

(34)

```
                        vP
             ┌───────────┴───────────┐
            DP                        v′
           ╱──╲              ┌─────────┴─────────┐
         Ahua   v           IAsp                IAspP
                       ┌──────┴───────┐
                      IAsp            VP
                             ┌─────────┴─────────┐
                            DPᵢ                   V′
                          ╱────╲          ┌────────┴────────┐
                   yi-dai shuiguo         V               ResP
                   'a bag of fruit'       │        ┌────────┴────────┐
                                          na      PROᵢ             Res′
                                        'take'              ┌────────┴────────┐
                                         (V1)              Res               DP
                                                            │              ╱────╲
                                                         jin-lai          chufang
                                                      'enter-come'       'kitchen'
                                                          (V2-V3)
```
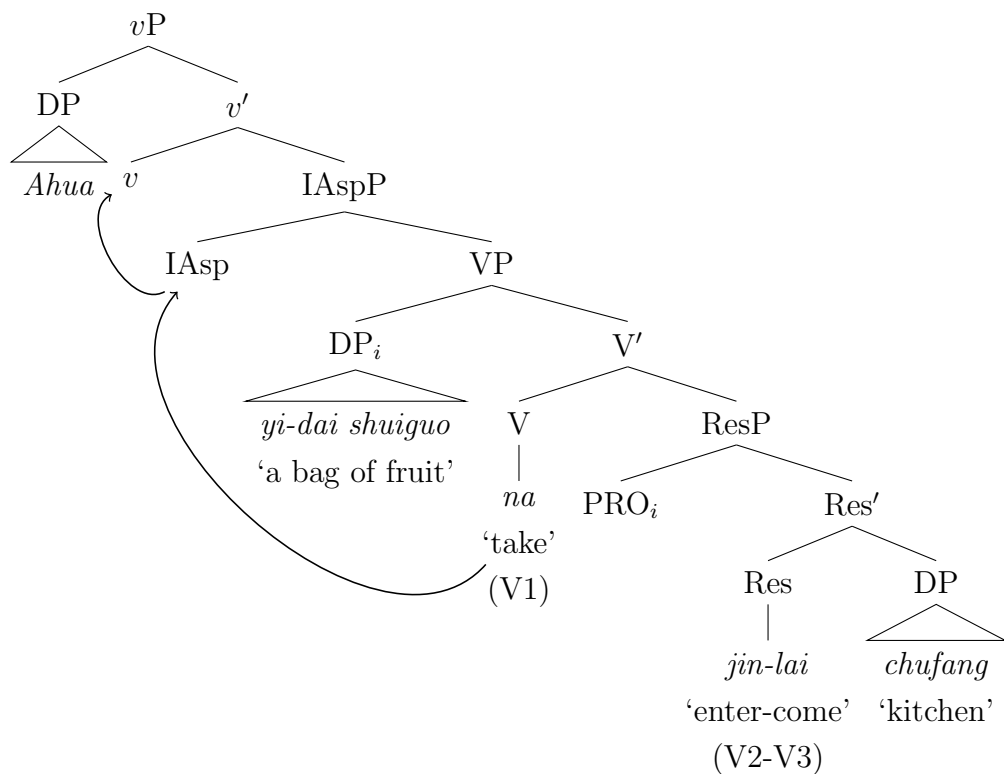
Similar to the word order V1 O V2 *(L), the compound is a resultative in the word order V1 O V2-V3 (L). What differs from the resultative being only V2 is that the locative argument is obligatory for V2 but optional for V2-V3. PRO is assigned the theme θ-role by V2-V3 and is co-indexed with the object *yi-dai shuiguo* 'a bag of fruit'. After V1 *na* 'take' undergoes cyclic head movement to v, the word order V1 O V2-V3 (L) is derived.

Next, let us consider (31c), repeated below. Adding a locative argument to the sentence, there are four possibilities, as in (35).

185

(31c) Ahua na jin lai yi-dai shuiguo.   (V1 V2 V3 O)
Ahua take enter come one-CL fruit
'Ahua brought a bag of fruit in.'

(35) a. *Ahua na jin lai yi-dai shuiguo chufang. (V1 V2 V3 O L)
Ahua take come enter one-CL fruit   kitchen

b. Ahua na jin lai chufang yi-dai shuiguo. (V1 V2 V3 L O)
Ahua take enter come kitchen one-CL fruit

c. Ahua na jin chufang lai yi-dai shuiguo. (V1 V2 L V3 O)
Ahua take enter kitchen come one-CL fruit

d. *Ahua na chufang jin lai yi-dai shuiguo. (V1 L V2 V3 O)
Ahua take kitchen enter come one-CL fruit
'Ahua brought a bag of fruit into the kitchen.'

Again, the locative argument must directly follow either V2 (35c) or V3 (35b). It cannot appear directly after the object (35a), nor can it appear directly after V1 (35d). Therefore, (31c) must come from either (35b) or (35c) with the deletion of the locative argument. In (35b) and (35c), the directional complement directly follows V1, which shows that the directional complement should be an inner aspect. Since the inner aspect can optionally take a locative argument, we cannot know whether (31c) is from (35b) or (35c) by examining the distributions of the locative argument. However, when V1 undergoes cyclic head movement to v, it stops by IAsp. This means that when the aspectual marker appears in the sentence, it can only affix to the cluster in v, that is, after the inner aspect. In (35b), *jin-lai* 'enter-come' is a compound. After V1 cyclically head moves to v, the aspectual marker can only follow *jin-lai* 'enter-come' and cannot insert between *jin* 'enter' and *lai* 'come'. By contrast, in (35c), the aspectual marker appears directly after *jin* 'enter'. The contrast is shown as below:

(36) a. *Ahua na jin-guo lai chufang yi-dai shuiguo.
Ahua take enter-Exp come kitchen one-CL fruit

b. Ahua na jin-guo chufang lai yi-dai shuiguo.
Ahua take enter-Exp kitchen come one-CL fruit
'Ahua has brought a bag of fruit into the kitchen before.'

Example (36a) comes from (35b) with the aspectual marker appearing between the compound, which is ungrammatical; example (36b) comes from (35c) with the aspectual marker appearing directly after V2, which is grammatical. If (31c) comes from (35b), we would expect the aspectual marker not to be able to appear between V2 and V3, the same as (36a). If (31c) comes from (35c), the

186

aspectual marker should be able to directly follow V2, like (36b). Adding the aspectual marker *-guo* between *jin* 'enter' and *lai* 'come' in (31c), the sentence is ungrammatical:

(37) *Ahua na jin-guo lai yi-dai shuiguo.
      Ahua take enter-Exp come one-CL fruit
      'Ahua has brought a bag of fruit in before.'

This indicates that (31c) should be from (35b). In other words, *jin-lai* 'enter-come' in (31c) is a compound. I propose that (31c) and (35b) have the following structure:

(38)
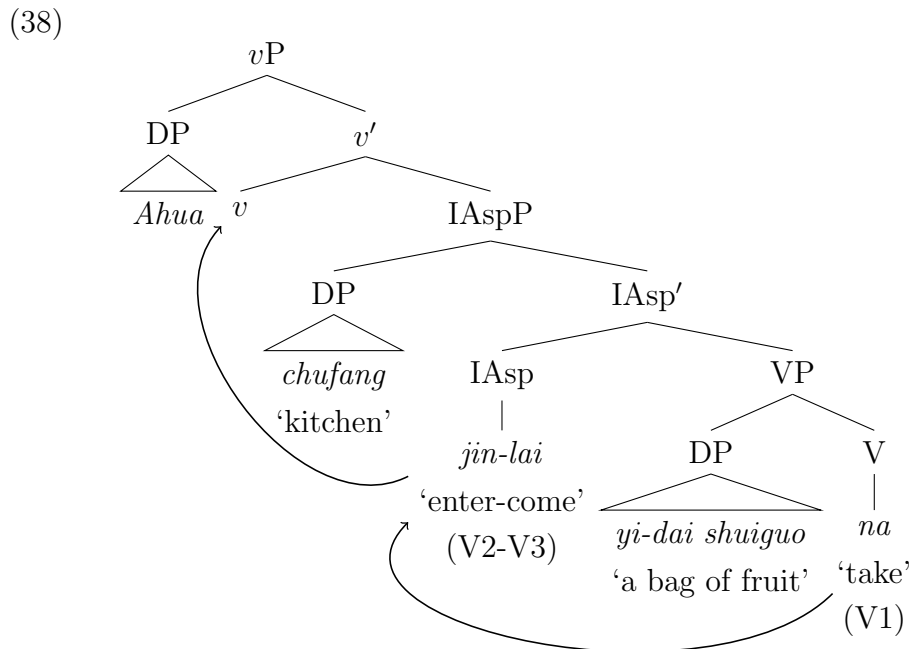
Similar to V2 in the word order V1 V2 O being an inner aspect, the compound in (31c) and (35b) is also an inner aspect, directly following V1. This inner aspect assigns an additional θ-role to its specifier position. In the case of *jin-lai* 'enter-come', it assigns a goal θ-role. Therefore, the DP *chufang* 'kitchen' in the Spec,IAspP is a goal argument. When V1 *na* 'take' undergoes cyclic head movement to v, it stops by IAsp, forming the cluster *na jin-lai* 'take enter-come' in v, thus the word order V1 V2-V3 (L) O.

The structure explains why the aspectual marker and the potential morpheme cannot appear between V2 and V3. The aspectual marker *-guo* is in Asp, which is above vP. When *-guo* affixes to the verb, it raises the whole verb cluster *na jin-*

lai 'take enter-come' in *v*, forming *na jin-lai-guo* 'take enter-come-Exp' in Asp. As a consequence, it is impossible for the aspectual marker to appear between *jin* 'enter' and *lai* 'come'. In the case of the potential morphemes *de* 'can' and *bu* 'cannot', following Chen (2016), I assume that they head a Potential Phrase, which is below IAspP and above VP.[6] After cyclic head movement, the potential morpheme can only directly follow the main verb and cannot appear between the lexical compound. Therefore, V2 and V3 cannot be separated by the potential morphemes (e.g., *na jin de lai).

Finally, let us examine (31b), repeated below. After adding a locative argument to the sentence, the possibilities are shown in (39).

(31b) Ahua na   jin   yi-dai   shuiguo lai.   (V1 V2 O V3)
       Ahua take enter one-CL fruit   come
       'Ahua brought a bag of fruit in.'

(39)   a. Ahua na   jin   yi-dai   shuiguo lai   chufang. (V1 V2 O V3 L)
           Ahua take enter one-CL fruit   come kitchen

       b. *Ahua na   jin   yi-dai   shuiguo chufang lai.   (V1 V2 O L V3)
           Ahua take enter one-CL fruit   kitchen come

       c. Ahua na   jin   chufang yi-dai   shuiguo lai.   (V1 V2 L O V3)
           Ahua take enter kitchen one-CL fruit   come

       d. *Ahua na   chufang jin   yi-dai   shuiguo lai.   (V1 L V2 O V3)
           Ahua take kitchen enter one-CL fruit   come
           'Ahua brought a bag of fruit into the kitchen.'

As with the previous sentences, the locative argument must directly follow either V2 (39c) or V3 (39a). It cannot appear directly after the object (39b), nor can

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[6]Note that the morpheme *de* can have other functions. In addition to the potential *de*, the resultative *de* expresses the degree, as in (ia), and the manner *de* depicts the manner, as in (ib). According to Sybesma (1999), the resultative *de* heads the Extent Phrase, which is between V (e.g., *pao* 'run' in (ia)) and the XP showing the degree (e.g., *hen chuan* 'pant heavily' in (ia)).

(i)   a. Laowang pao de hen chuan.   (resultative *de*)
           Laowang run DE very pant
           'Laowang ran to the extent that he panted.'
       b. Laowang pao de hen kuai.   (manner *de*)
           Laowang run DE very fast
           'Laowang funs fast.'

When *de* occurs with negation, the potential *de* is replaced by negation *bu*. In the case of the resultative/manner *de*, negation may appear either before the matrix verb or in the XP following *de*, depending on the meaning. While the resultative and the manner *de* allow a bigger constituent, say, a clause, to follow *de*, the potential *de* seems to only allow the verb to follow it. These show that the potential *de* is not the same *de* as either the resultative *de* or the manner *de* and thus should not be analyzed as the same head.

it appear directly after V1 (39d). Thus, (31b) must come from either (39a) or (39c). In (39a) and (39c), the directional complement V2 directly follows V1, so V2 should be an inner aspect. In (39a), V3 *lai* 'come' should be a resultative in Res, taking a locative argument. By contrast, in (39c), the sentence has two interpretations. One is that the locative argument is the endpoint of the event, as the translation in (39) shows. The other is that the locative argument modifies the object, that is, 'a bag of fruit in the kitchen'. When we add another locative argument after *lai* 'come' in (39c), *chufang* 'kitchen' must modify the object, as shown below:

(40)   Ahua na   jin   chufang yi-dai shuiguo lai   fangjian.
        Ahua take enter kitchen one-CL fruit   come room
        'Ahua brought a bag of fruit in the kitchen into the room.'
        *'Ahua brought a bag of fruit into the kitchen to the room.'

This suggests that *lai* 'come' in (39c) is not a genuine lexical verb, unlike *lai* 'come' in (39a), in that it cannot really take a locative argument. Recall that, in Liu's (1998) classifications, in addition to the directional usage, directional complements can also have the resultative usage and the stative usage, where a locative argument is not allowed:

(41)   a.   Ahua hai mei xiang chu banfa lai.   (resultative)
             Ahua still not think exit way   come
             'Ahua has still not come up with a way.'

        b.   Ahua zhongyu jing xia   shin lai.   (stative)
             Ahua finally   calm descend heart come
             'Ahua finally calmed down.'

In (41), *lai* 'come' clearly cannot take a locative argument, yet it still contains the deictic meaning. It seems that *lai* 'come' in (31b) behaves more like that in (39c) and (41), as all of them do not license a locative argument.[7] Assuming that (31b) is from (39c) with the locative argument being removed, *lai* 'come' here then should be treated as a defective verb. As Chen (2016) claims, *lai* 'come' in this position only contains some deictic information. With or without *lai* 'come', the core meaning is the same. This phenomenon is like a viewpoint

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[7]As we will see in Section 5.3, when V3 follows the object, it may function either as a lexical verb, as in (39a), or a defective verb, as in (39c) and (41). In (31b), when a locative argument is added after V3, this deictic verb is in Res and thus can take a locative argument. However, when a locative argument does not appear after V3, the meaning that some entity undergoing movement toward the speaker has weaken. Therefore, I treat V3 in (31b) distinct from that in (39a).

aspect, which does not affect the meaning of the event but sees the event from a different perspective. Therefore, we may treat it as a kind of viewpoint aspect.

I propose that *lai* 'come' following the object alone is in the SDeic head that I proposed in Chapter 3. The position of *lai* 'come' is then between ModP and AspP. The structure of (31b) and (39c) can be illustrated as below:

(42)
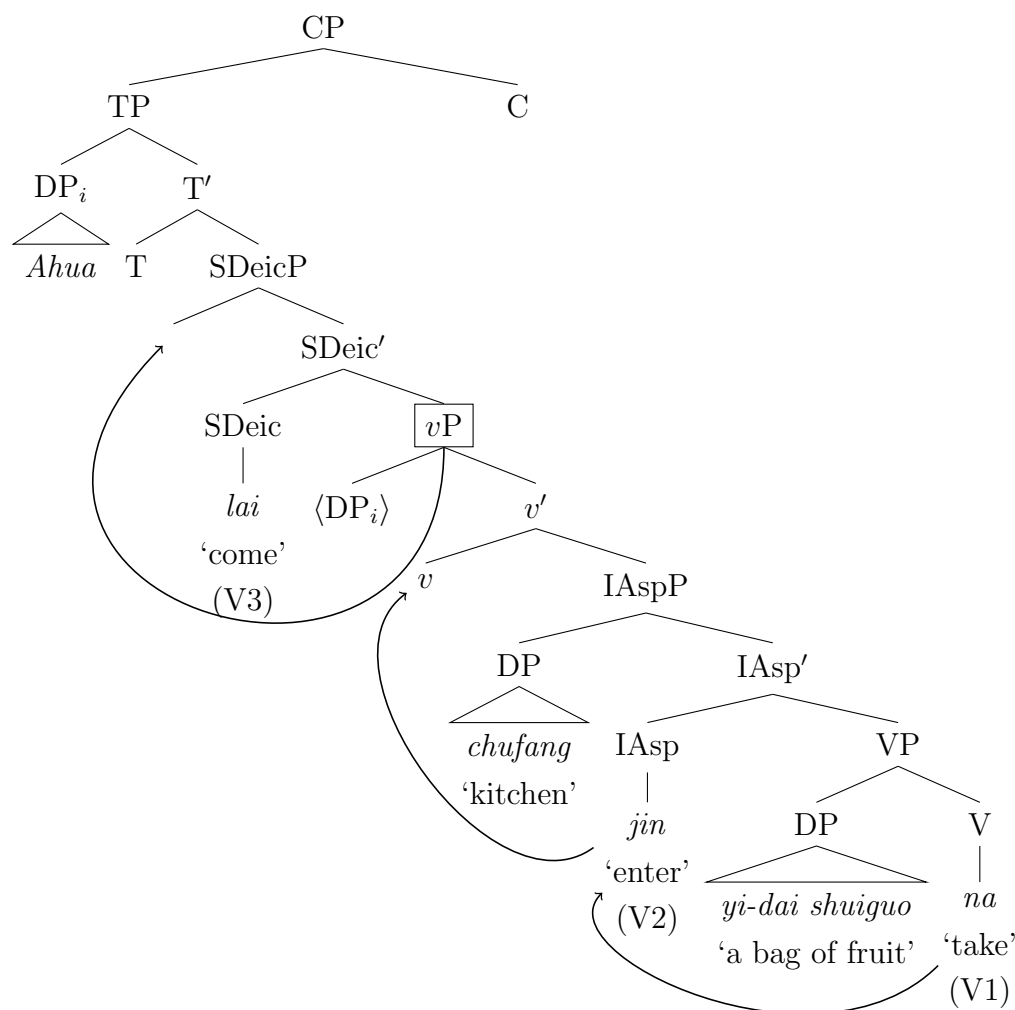
Like (24), V2 *jin* 'enter' is an inner aspect, assigning an additional θ-role, goal, to *chufang* 'kitchen' in the Spec,IAspP. When V1 *na* 'take' undergoes cyclic head movement to v, it stops by V2, making *na jin* 'take enter' in v. When the phase head C is merged, its features are inherited by the nonphase heads. The Agree feature on T first attracts the subject to move from the Spec,vP to the Spec,TP, and then the checking requirement on SDeic triggers the event, vP, to move to the Spec,SDeicP. At Spell-Out, we have the word order for (31b) and (39c), that

is, V1 V2 (L) O V3. If V3 does not involve the deictic meaning in space, as in (41), *lai* 'come' is in NDeic. The event then moves to the Spec,NDeicP.

Compare (42) with sentences with the post-VP deictic verb, such as (43b):

(43) a. Laowang lai   kan dianying le.
          Laowang come see movie   Prt

      b. Laowang [kan dianying] lai   le.
          Laowang see   movie   come Perf/Prt
          'Laowang has come to see the movie.'

Despite the fact that in both cases, the event moves to the specifier of a higher projection, movement is triggered by different probes. In the case of (43), the two sentences have the same meaning. The difference is that when the speaker utters (43a), the statement is neutral; when the speaker utters (43b), he focuses more on the event *kan dianying* 'see the movie'. Therefore, movement of the event is triggered by the [Foc] feature. By contrast, the two sentences in (44) do not have the same meaning:

(44) a. Ahua lai   na jin   chufang yi-dai   shuiguo.[8]
          Ahua come take enter kitchen one-CL fruit
          'Ahua will take a bag of fruit into the kitchen.'

      b. Ahua [na jin   chufang yi-dai   shuiguo] lai.
          Ahua take enter kitchen one-CL fruit   come
          'Ahua brought a bag of fruit into the kitchen.'

Since they do not have the same meaning, movement of the event *na jin chufang yi-dai shuiguo* 'take a bag of fruit into the kitchen' cannot be triggered by the [Foc] feature, hence not to the lower Spec,FocP. I propose that the event moves to the Spec,DeicP. The difference between the post-VP deictic verb and V3 following the object alone will be discussed in more detail in Section 5.3.4.

When the aspectual marker appears in the sentence, as in (45), after the main verb moves to v, it further moves to Asp for receiving the aspectual marker. In this case, SDeic attracts AspP to its specifier position.

(45) Ahua [na jin-le   chufang yi-dai   shuiguo] lai.
      Ahua take enter-Perf kitchen one-CL fruit   come
      'Ahua brought a bag of fruit into the kitchen.'

---

[8]To some native speakers, the sentence is more natural when there is *you* 'let, by' before the subject.

At first glance, movement of the event in (42) and (45) seems to violate antilocality (Abels, 2003), according to which, movement of a constituent cannot be too close. However, there may be some projections between DeicP and the event. We will return to this issue in the next subsection.

In addition to V1 V2 V3 all appearing in the sentence, Chao (1968) claims that the directional complement can be redundant sometimes:

(46)   na   chu   lai   yi-zhi   e   lai   (V1 V2 V3 O V3)
          take   exit   come   one-CL   goose   come
          'take out here a goose here'   (Chao, 1968:478)

In (46), V3 appears in two positions, one following V2 and one following the object. In our analysis, V3 directly following V2 forms a lexical compound with V2 (i.e., V2-V3). This lexical compound is an inner aspect in (46) since it directly follows V1. The V3 following the object is in SDeic, triggering the event, *na chu-lai yi-zhi e* 'take out a goose', to move to its specifier position. If each verb projects its own argument structure, as Zou (1994a, 1995, 2013) proposes, this redundancy cannot be captured.

5.2.3   V3 in the Deic head

We have argued that V3 following the object is in Deic, either SDeic or NDeic, the same as the pre-VP deictic verb in Chapter 3. Then, what is the function of this V3? Recall that when *lai* 'come' is used in the temporal domain, it can appear either before or after the time, as illustrated in (96) in Chapter 3, repeated below:

(47)   a.   *lai nian* 'next year':

          b.   *zhexie nian lai* 'over the past few years':

In both diagrams, the speaker locates himself at the endpoint of the movement. When *lai* 'come' precedes a time unit, as in (47a), the time is seen as a destination set in the future. This time then is treated as the goal of the movement, similar to a locative argument in the spatial domain. Since time moves from now to the future, *lai nian* 'next year' refers to a time in the future. By contrast, when *lai* 'come' follows a period of time, as in (47b), this period of time is regarded as the route of the movement. Time moves along the path, like how a moving object undergoes movement in the spatial domain, and reaches the time *now*, which is also the speaker's location. Since movement is from the past to now, *zhexie nian lai* 'over the past few years' refers to the time in the past.

I have argued that the pre-VP *lai* 'come' can be analyzed in the same way, parallel to (47a), as schematized in (97) in Chapter 3, repeated below:

(48)   Pre-VP *lai* 'come':
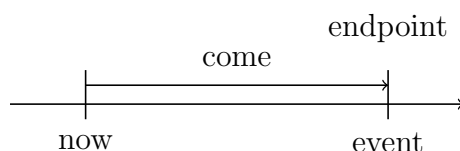
In the mental domain, the speaker also locates himself at the endpoint of the movement. When *lai* 'come' precedes an event, the event is seen as a destination set in the future. The event is then the goal of the movement, like a locative argument in the spatial domain. Since the event takes place later than *now*, the event has the future reading. When *lai* 'come' precedes an event, it refers to the state prior to the occurrence of the event.

Similar to the pre-VP *lai* 'come', I argue that in the case of V3 *lai* 'come' following the object alone in directional serial verbs, movement also takes place in the mental domain, the concept of which is parallel to (47b), as shown below:

(49)   V3 *lai* 'come' following the object:
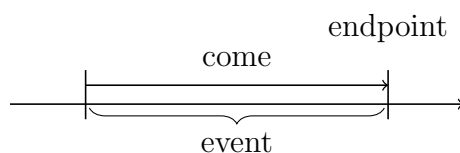
In (49), the speaker also locates himself at the endpoint of the movement. The event is treated as the route of the movement. When time moves along the event and reaches the speaker, like how a moving object in the spatial domain does,

the movement is at its endpoint. The endpoint of an event is its result state. Therefore, when *lai* 'come' appears after an event, it refers to the result state of the event.

On the other hand, when the deictic verb is *qu* 'go', the speaker locates himself at the beginning point of the movement in (49). V3 *qu* 'go' thus refers to the early part of the event. This explains why in some cases, only *lai* 'come' can be used:

(50)   a. jing xia   xin   lai/*qu
            calm descend heart come/go
            'calm down'

        b. lou   chu xiaorong lai/*qu
            show exit smile   come/go
            'show a smile'

In (50a), when we ask someone to calm down, we focus on the result state of the calming-down event rather than the stage where this person is still excited but tries to make himself calm. Similarly, in (50b), when we say someone shows a smile on his face, we emphasize on the state of his smiling as opposed to the time he begins to curve up the corners of his mouth.

Compared the two uses of *lai* 'come' related to the event, they can be illustrated as below:

(51)   Event-related aspectual *lai* 'come':
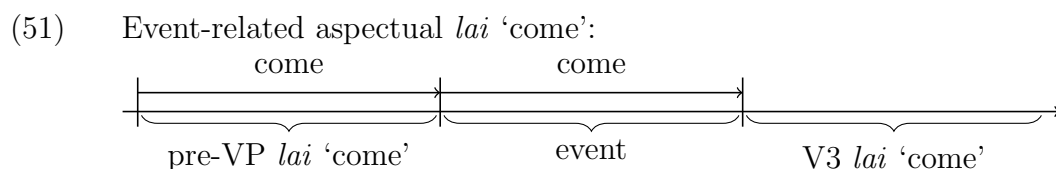
When the pre-VP *lai* 'come' precedes an event, the event is seen as the destination of the movement, and the pre-VP *lai* 'come' focuses on the route of the movement. On the other hand, when V3 *lai* 'come' in directional serial verbs follows an event, the event is regarded as the route of the movement, and V3 *lai* 'come' focuses on the state at the destination of the movement. Therefore, the pre-VP *lai* 'come' refers to the state prior to the occurrence of the event whereas V3 *lai* 'come' following the object in directional serial verbs refers to the state when the event is complete, that is, the result state.

Similarly, the two uses of *qu* 'go' related to the event can be schematized as

follows:

(52) Event-related aspectual *qu* 'go':
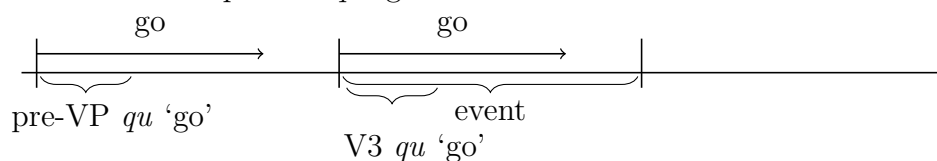
The pre-VP *qu* 'go', like the pre-VP *lai* 'come', focuses on the route of the movement. Because the meaning of *qu* 'go' does not include an endpoint, the route is not complete. Therefore, the pre-VP *qu* 'go' only focuses on the early part of the movement. On the other hand, when V3 *qu* 'go' following the object in directional serial verbs follows an event, the event is viewed as the route of the movement. Since *qu* 'go' means moving away from the speaker, the location of which is the beginning point of the event, V3 *qu* 'go' refers to the early part of the event.

As we have seen, when the aspectual deictic verb refers to the state prior to the occurrence of the event, it precedes the event; when the aspectual deictic verb refers to some part of the event, it follows the event. In the syntactic structure, I propose that there is a [+/-realize] feature on Deic, inherited from C. In the case of the pre-VP deictic verb, the event has not been realized, thus the feature being [-realize]. In the case of V3 following the object, the event has been realized, hence the feature being [+realize]. The [-realize] feature is a weak feature, so the event agrees with it in situ. The [+realize] feature is a strong feature, triggering the event to move to its specifier position. The structures of the two uses of the aspectual deictic verbs can be represented as follows:

(53) a. the pre-VP deictic verb

```
                    CP
                  /    \
                TP      C
              /    \
            DP      T′
           /\      /  \
        Subj  T   DeicP
                      \
                      Deic′
                     /    \
                  Deic     XP
                [-realize]  /\
                          event
```

   b. V3 following the object
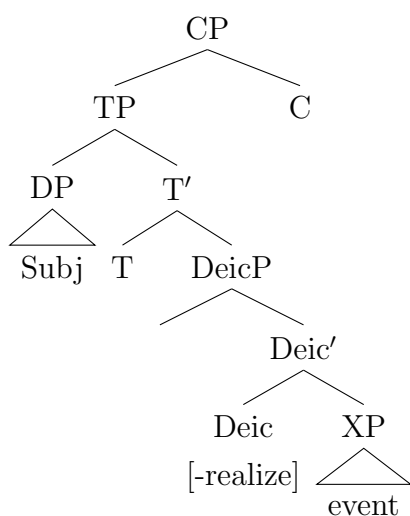
```
                    CP
                  /    \
                TP      C
              /    \
            DP      T′
           /\      /   \
        Subj  T    DeicP
                       \
                       Deic′
                      /    \
                   Deic    [XP]
                 [+realize]  /\
                           event
```
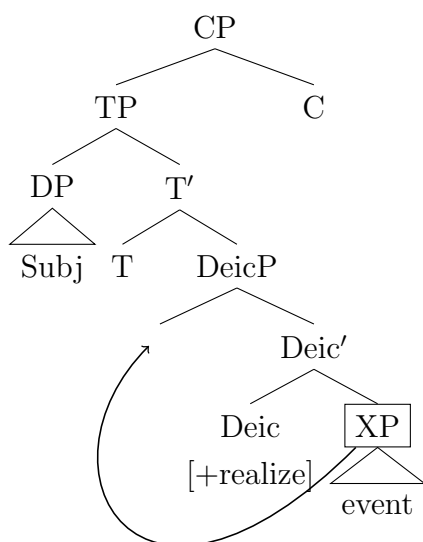
When the event has not been realized, as in (54a), we have the structure in (53a). The feature on Deic is [-realize], and the event it agrees with will not move to the specifier position. When the event has been realized, as in (54b), we have the structure in (53b). The feature on Deic is [+realize], and this feature triggers the event to move to the specifier position.

(54) a. wo lai   kai   men.
          I   come open door
          'I'll open the door.'

      b. jing xia   xin lai
          calm descend heart come
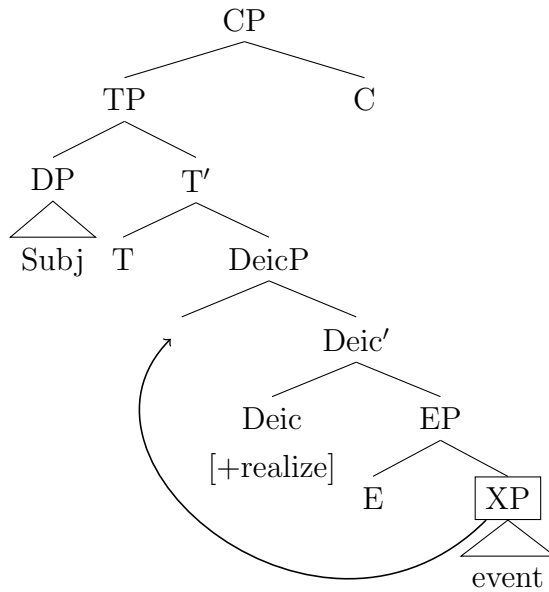   'calm down'

The movement in (53b) seems to violate antilocality (Abels, 2003), according to which movement of a constituent cannot be too close, for example, from a complement position to the specifier position of the same head. However, there may be some projections between the Deic head and the event XP. We have seen that Travis (2010) proposes an Event Phrase, EP, to distinguish from irrealis to realis.[9] She argues that the position of EP is between Asp and v as a boundary between L-syntax and S-syntax. However, if EP is Pollock's (1989) AgrP in the split Infl, the position of which is between negation and the adverb, EP should be higher than AspP. As we have seen, when the adverb and the aspectual marker co-occur, the adverb precedes the aspectual marker:

(55) a. Laowang kaixinde chi-zhe bingqilin.
          Laowang happily eat-Dur ice cream

      b. *Laowang chi-zhe kaixinde bingqilin.
          Laowang eat-Dur happily ice cream
          'Laowang is eating ice cream happily.'

If EP is higher than the adverb, it should be higher than AspP as well. Therefore, I argue that EP is above AspP and below DeicP. Antilocality is then not violated due to EP being the complement of the Deic head, as shown below:

---

[9]Borer (2005) also proposes an EP, the head of which 'is responsible for establishing a mapping from predicates to events' (Borer, 2005:82). This EP is above TP, and the subject moves to the Spec,EP after receiving the nominative case in the Spec,TP. By contrast, in Travis's EP, which is between TP and VP, the infinitival marker, like *-er* in *parl-er-a* 'speak' in the future tense in French, heads this position. Since Travis's EP has empirical evidence and Borer's EP is abstract, I follow Travis to assume that EP is between TP and VP rather than above TP.

(56)

```
                    CP
                   /  \
                 TP    C
                /  \
              DP    T′
             / \   /  \
          Subj  T   DeicP
                   /   \
                  /    Deic′
                 /    /   \
                / Deic     EP
                [+realize] /  \
                          E   [XP]
                                |
                              event
```

What moves to the Spec,DeicP is the complement of EP. The [+realize] feature agrees with V and raises the whole phrase. When the landing site of V is v, vP moves to the Spec,DeicP. When the landing site of V is Asp, AspP moves to the Spec,DeicP.

In this section, we have examined three word orders in directional serial verbs. When the object directly follows V1 (i.e., V1 O V2 V3), V2-V3 is a compound in Res. When the object directly follows V3 (i.e., V1 V2 V3 O), V2-V3 is a compound in IAsp. When the object directly follows V2 (i.e., V1 V2 O V3), V2 is an inner aspect in IAsp. As for V3 following the object, it is a viewpoint aspect, which is related to the event. Being in the Deic head with the [+realize] feature, V3 triggers the event to its specifier position. When V3 is *lai* 'come', it refers to the result state of the event; when V3 is *qu* 'go', it refers to the early part of the event. In either case, the event has started and thus differs from the pre-VP deictic verb, which refers to the state prior to the occurrence of the event, therefore the event having not started yet.

5.3   Deictic verbs as directional complements

We have seen that directional complements may appear in three positions: (1) in the Res head as a resultative, (2) in the IAsp head as an inner aspect, and (3) in the Deic head as a viewpoint aspect. In this section, I am going to investigate sentences with only a deictic verb as the directional complement. I will compare

it with sentences with only a directional verb as the directional complement and examine if they behave similarly.

5.3.1 Intransitive V1 with V3

When the main verb is intransitive, it is usually a motion verb indicating the manner of movement, such as *pao* 'run', *pa* 'crawl', *tiao* 'jump', and so on:

(57)   a.   Ahua pao lai   (huochezhan).   (V1 V3 L)
              Ahua run come train station

        b. *Ahua pao (huochezhan) lai.   (V1 L V3)
              Ahua run train station come
              'Ahua ran to the train station (toward me).'

When the locative argument follows V3 (57a), the sentence is grammatical; when it follows V1 (57b), the sentence is ungrammatical. If we consider the meaning of both verbs, the distribution in (57) is predictable. V1 *pao* 'run' only takes one argument, which is the subject Ahua. Since the locative argument is not an argument that V1 *pao* 'run' takes, it cannot appear directly after V1. On the other hand, V3 *lai* 'come' optionally takes a goal as one of its arguments. Therefore, the locative argument can follow V3.

Compare the meanings of V2 and V3. The deictic verb *lai* 'come' means movement toward the speaker, so the speaker's location is viewed as the reference point. Without a locative argument, the meaning can still be conveyed. By contrast, the directional verb V2 needs a locative argument to be its reference point. As a consequence, V2 requires a locative argument to appear. Like V2 being the directional complement with an intransitive V1, I propose that V3 in (57a) is a resultative, hence being the complement of V1.

When the main verb is not a motion verb, it is still possible for V3 to be the directional complement, as shown below:

(58)   Ahua zhongyu xing lai   le.
        Ahua finally   wake come Prt
        'Ahua has finally woken up.'

In (58), *lai* 'come' has lost its spatial meaning. Therefore, it is not possible to have a locative argument as the endpoint. What the sentence means is that Ahua was unconscious for a period of time, and now she is awake. This is the

metaphorical use which Clark (1974) and Huang (1978) treat to be related with the normal state and Tang (1979) regards as extension to the temporal sense. I argue that the endpoint for *lai* 'come' in (58) is the time *now*, and V3 *lai* 'come' is an inner aspect. When the event reaches the endpoint, it is connected to the time *now*.

5.3.2   Transitive V1 with V3

When the main verb is transitive, the fact that a locative argument can appear is usually neglected in previous analyses. Therefore, I will again add a locative argument to the sentence and examine the distributions. Consider again (6) in Chapter 4, repeated below:

(59)   a.   Ahua na   yi-dai   shuiguo lai.   (V1 O V3)
             Ahua take one-CL fruit   come

       b.   Ahua na   lai   yi-dai   shuiguo.   (V1 V3 O)
             Ahua take come one-CL fruit
             'Ahua brought a bag of fruit.'

In (59a), V3 follows the object, and in (59b), V3 follows V1. Unlike V2, when V3 follows the object without a locative argument, the sentence is grammatical.

Let us first consider (59b) with a locative argument:

(60)   a.   *Ahua na   lai   yi-dai   shuiguo chufang.   (V1 V3 O L)
             Ahua take come one-CL fruit   kitchen

       b.   Ahua na   lai   chufang yi-dai   shuiguo.   (V1 V3 L O)
             Ahua take come kitchen one-CL fruit

       c.   *Ahua na   chufang lai   yi-dai   shuiguo.   (V1 L V3 O)
             Ahua take kitchen come one-CL fruit
             'Ahua brought a bag of fruit to the kitchen.'

As we saw in the previous sections, the locative argument must directly follow V3 (60b). It cannot follow the object (60a), nor can it directly follow V1 (60c). Since V1 *na* 'take' does not take a locative argument, it is reasonable that the locative argument cannot directly appear after V1. Like the case of V2 directly following V1, I propose that V3 is an inner aspect in the word order V1 V3 (L) O. Therefore, (59b) and (60b) have the following structure:

(61)
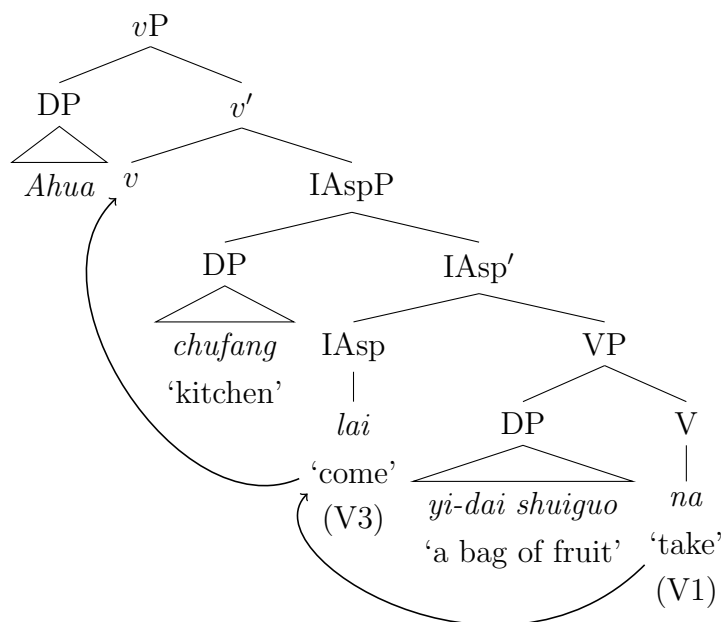
In (61), V3 *lai* 'come' is in IAsp. This inner aspect may assign an additional θ-role to its specifier position. Since *lai* 'come' can take a goal argument, the inner aspect *lai* 'come' assigns a goal θ-role to *chufang* 'kitchen' in the Spec,IAspP. When the main verb undergoes cyclic head movement to v, it stops by IAsp, making *na lai* 'take come' in v. The word order V1 V3 (L) O is then derived.

Next, consider (59a) with a locative argument. There are three possibilities:

(62)   a.   Ahua na   yi-dai   shuiguo lai   chufang.   (V1 O V3 L)
                 Ahua take one-CL fruit   come kitchen

    b. *Ahua na   yi-dai   shuiguo chufang lai.   (V1 O L V3)
               Ahua take one-CL fruit   kitchen come

    c. #Ahua na   chufang yi-dai   shuiguo lai.   (V1 L O V3)
              Ahua take kitchen one-CL fruit   come
              'Ahua brought a bag of fruit to the kitchen.'

As what we have seen, the locative argument must follow V3 (62a). When it follows the object (62b), the sentence is ungrammatical. When it appears between V1 and the object (62c), the sentence is grammatical only under the interpretation that the location modifies the object, that is, 'a bag of fruit in the kitchen'. It cannot mean that the kitchen is the endpoint of the movement. Since V1 *na* 'take' does not take a locative argument, the interpretation is predictable. Like the case of V2 directly following the object, I propose that *lai* 'come' in (59a)

and (62a) is a resultative, the structure of which can be represented as below:

(63)

```
                          vP
                  ╱              ╲
               DP                 v′
              ╱  ╲            ╱        ╲
           Ahua    v        IAspP
                      ╱            ╲
                  IAsp              VP
                              ╱            ╲
                          DP_i              V′
                      ╱        ╲         ╱      ╲
              yi-dai shuiguo     V       ResP
              'a bag of fruit'   |     ╱      ╲
                                na  PRO_i      Res′
                               'take'       ╱       ╲
                                (V1)     Res          DP
                                          |        ╱    ╲
                                         lai    chufang
                                        'come'  'kitchen'
                                         (V3)
```
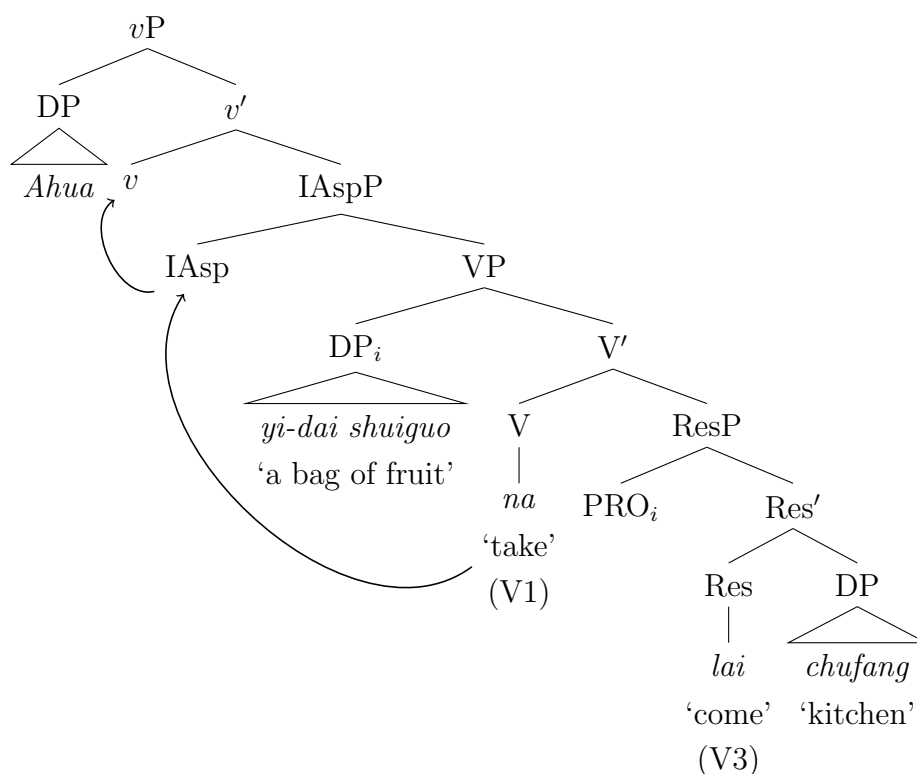
In (63), V3 *lai* 'come' is in Res. The locative argument *chufang* 'kitchen' is an argument that *lai* 'come' optionally selects. The null element PRO that *lai* 'come' selects as a theme is co-indexed with the nearest c-commanding DP *yi-dai shuiguo* 'a bag of fruit'. After V1 *na* 'take' undergoes cyclic head movement to v, the word order V1 O V3 (L) is derived.
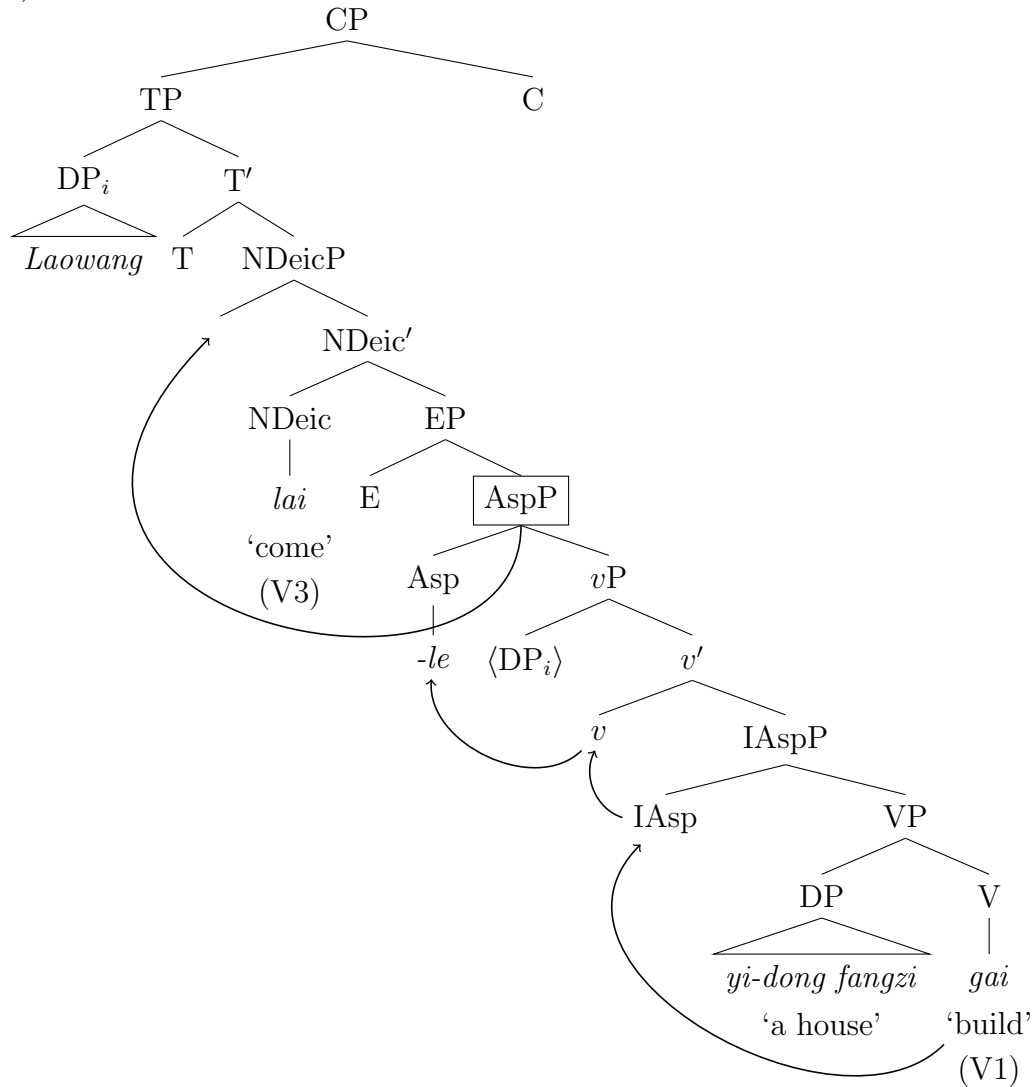
In addition to an entity arriving at the speaker's location, when *lai* 'come' follows an object and does not take a locative argument, it can also indicate the result state of the event. This is clearer when physical movement is not involved:

(64)   Laowang gai-le   yi-dong fangzi lai.
        Laowang build-Perf one-CL house come
        'Laowang built a house.'

In (64), the house does not undergo movement. Since the sentence is not related to an endpoint in space, *lai* 'come' cannot be a resultative in Res. I argue that *lai* 'come' in (64) refers to the evaluative viewpoint in the sense of Clark (1974), which shows that the speaker is more involved with the event. For example, it is possible that Laowang built the house for the speaker. As I proposed in

Chapter 3, the aspectual deictic verb in this use is in NDeic. The structure can be represented as below:

(65)

```
                          CP
                  ┌────────┴────────┐
                 TP                  C
            ┌─────┴─────┐
          DP_i          T'
        ┌──┴──┐      ┌───┴────┐
    Laowang   T      T       NDeicP
                          ┌───────┴─────┐
                              NDeic'
                        ┌───────┴───────┐
                      NDeic             EP
                        │          ┌─────┴─────┐
                       lai         E        ┌AspP┐
                     'come'            ┌──────┴──────┐
                      (V3)            Asp            vP
                                       │        ┌─────┴─────┐
                                      -le    ⟨DP_i⟩         v'
                                                      ┌──────┴──────┐
                                                      v            IAspP
                                                            ┌────────┴────────┐
                                                           IAsp              VP
                                                                       ┌──────┴──────┐
                                                                       DP            V
                                                                     ┌──┴──┐         │
                                                              yi-dong fangzi        gai
                                                                'a house'         'build'
                                                                                    (V1)
```

In (65), the aspectual deictic verb is in NDeic. When the phase head C is merged, its uninterpretable features are inherited by the nonphase heads. The Agree feature on T attracts the subject to move from the Spec,vP to the Spec,TP; the checking requirement on Asp triggers the main verb *gai* 'build' to move from v to Asp; and the [+realize] feature on NDeic attracts the event to move to the Spec,NDeicP. In this case, the event is AspP rather than vP as the landing site of V is Asp.

As we have seen, V3 can appear in three positions. In addition to Deic, it can also function as a resultative and an inner aspect, both of which are positions for

V2 as well.

5.3.3 The shape of the object

Despite the fact that both V2 and V3 can be an inner aspect, there is difference between them. So far we always use an indefinite object to test in the sentence. When we use a noun without a specific number, V2 and V3 behave differently:

(66) a. *Ahua na   wenjian   hui.   (V1 O V2)
          Ahua take document return

      b. Ahua na   hui   wenjian.   (V1 V2 O)
          Ahua take return document
          'Ahua took the document back.'

(67) a. Ahua na   wenjian   lai.   (V1 O V3)
          Ahua take document come

      b. ??Ahua na   lai   wenjian.   (V1 V3 O)
          Ahua take come document
          'Ahua brought the document.'

We have seen that the difference between (66a) and (67a) lies in the argument structures of the motion verbs. The directional complements in both sentences are in Res. While V2 *hui* 'return, back' requires a location to be its reference point, therefore a locative argument being obligatory, the reference point of V3 *lai* 'come' is the speaker's location, thus the locative argument being optional. However, in (66b) and (67b), the directional complements are both regarded as an inner aspect, why does the noun without a specific number sound natural in (66b) but not in (67b)?

I assume that it stems from the difference in meaning between V2 and V3. The directional verb V2 *hui* 'return, back' needs a locative argument to be its reference point. In other words, the event has to be telic. In (66b), the bare noun object serves as the event-measuring DP. Therefore, without a specific number, *wenjian* 'document' in (66b) is interpreted as a definite DP. The event is thus a telic event. By contrast, the deictic verb V3 does not require a locative argument to be its reference point. While the meaning of V3 *lai* 'come' is moving toward the speaker, it does not require the movement to reach its endpoint. As we saw in Shen's (1996) 'start-to-come' *lai* 'come', the endpoint is not entailed:

(68)   ta yijing   lai-le,   xianzai zheng zai lu-shang ne.
          he already come-Perf now   right at way-on Prt
          'He has left for here already, and he is on the way right now.'
          (Lit. '*He has come already, and he is on the way right now.')
          (Shen, 1996:510)

In order for the event to be telic, an event-measuring DP is needed. Therefore, when *wenjian* 'document' in (67b) does not appear with a specific number, the sentence sounds odd. However, if we add an aspectual marker or a sentence-final particle *le*, the sentence with only *wenjian* 'document' being the object sounds natural again:

(69)   a.   Ahua na   lai-le   wenjian.
               Ahua take come-Perf document
               'Ahua brought the document.'

        b.   Ahua na   lai   wenjian   le.
               Ahua take come document Prt
               'Ahua has brought the document.'

I assume that it is due to the aspectual marker and the sentence-final particle *le* implying that the event has taken place and has been complete. Thus, the object *wenjian* 'document' is interpreted as a definite DP. Since it is a definite DP, it can be an event-measuring DP, which makes the sentence sound natural.

However, consider the following example:

(70)   a.   Ahua na   (yi-dai) shuiguo jin   chufang.   (V1 O V2 L)
               Ahua take one-CL fruit   enter kitchen

        b.   Ahua na   jin   chufang ??(yi-dai) shuiguo.   (V1 V2 L O)
               Ahua take enter kitchen   one-CL fruit
               'Ahua took a bag of fruit into the kitchen.'

In (70b), the directional complement is V2. If the event-measuring DP is *chufang* 'kitchen', it should not matter whether the object appears with a specific number or not. However, (70b) suggests that the object at the end of the sentence also has to measure out the event. This is similar to Travis's (2010) observation regarding the double object construction:

(71)   a.   Mary gave the child a book for two years.
        b.   Mary gave the child books for two years.   (Travis, 2010:118)

In (71a), 'for two years' refers to the time for having the book while in (71b), 'for two years' refers to the time for the book-giving event. The different interpretations come from the shape of the direct object. Travis (2010) states that perhaps both objects measure out the event, though this assumption needs further research. I will also leave the explanation for (70b) for future investigation.

5.3.4   Post-VP deictic verbs vs. V3 deictic verbs

We have compared the pre-VP deictic verb with V3 following the object in directional serial verbs. The former focuses on the state prior to the occurrence of the event whereas the latter focuses on either the early part of the event, in the case of *qu* 'go', or the result state of the event, in the case of *lai* 'come'. In addition, we have seen that the pre-VP deictic verb can be interchangeable with the post-VP deictic verb, as shown below:

(72) a. Laowang lai   kan dianying le.
          Laowang come see movie   Prt

      b. Laowang kan dianying lai   le.
          Laowang see movie   come Perf/Prt
          'Laowang has come to see the movie.'

If both the post-VP deictic verb and V3 following the object in directional serial verbs can appear after an event, what is the difference between these two? In the case of the post-VP deictic verb, I have argued that *le* after the post-VP deictic verb functions as both the aspectual marker and the sentence-final particle. This sentence-final *le* cannot be omitted, as in (73a). By contrast, in directional serial verbs, *le* at the end of the sentence is only a sentence-final particle. Without it, the sentence is still grammatical, as in (73b).

(73) a. Laowang [chi fan] lai   *(le).
          Laowang eat rice come   Perf/Prt
          'Laowang has come for a meal.'

      b. Laowang [da-(le)   dianhua] lai   (le).
          Laowang call-Perf phone   come Prt
          'Laowang has called.'

In (73a), *lai* 'come' refers to the state prior to the occurrence of the event, hence the meal-eating event may have not taken place yet. The event undergoing movement in syntax, as the brackets show, does not include the aspectual marker.

By contrast, in (73b), *lai* 'come' indicates the result state of the event, therefore the event having happened. The event undergoing movement in syntax, as the brackets show, includes the aspectual marker.

In addition to syntax, they also differ in the aspectual class of the event. In the case of the post-VP deictic verb, as long as the event is durative, it is acceptable. This allows the post-VP *lai* 'come' to co-occur with activity and accomplishment events:

(74) a. Laowang [gai   yi-dong fangzi] lai   le.   (accomplishment)
          Laowang build one-CL house   come Perf/Prt
          'Laowang has come to build a house.'

      b. Laowang [chang ge]   lai   le.   (activity)
          Laowang sing   song come Perf/Prt
          'Laowang has come to sing songs.'

On the other hand, when the aspectual *lai* 'come' is in directional serial verbs, it refers to the result state of the event, which means that the event must be a change-of-state event so that there is a result state to refer to. Therefore, *lai* 'come' can co-occur with accomplishment events but not with activity events:

(75) a. Laowang [gai-le   yi-dong fangzi] lai.   (accomplishment)
          Laowang build-Perf one-CL house   come
          'Laowang built a house.'

      b. *Laowang [chang-le ge]   lai.   (activity)
          Laowang sing-Perf song come
          'Laowang sang songs.'

In the case of (73b), at first glance, *da dianhua* 'call on the phone' seems to be an activity, as when the frame adverbial 'in an hour' modifies the event, it can only refer to the period of time before the event starts rather than the period of time that the event takes to finish:

(76) Laowang yi   xiaoshi nei da   dianhua.
      Laowang one hour   in   call phone
      'Laowang started to call in an hour.'
      *'Laowang finished calling in an hour.'

However, when we utter (73b), we are talking about a particular calling event that Laowang makes as opposed to a general activity. Therefore, *da dianhua* 'call

on the phone' in (73b) should be regarded as an accomplishment. This is clearer if we add a specific number before *dianhua* 'phone', as in (77). The object *san-tong dianhua* 'three phone calls' is an event-measuring DP and thus the frame adverbial 'in an hour' refers to the period of time the event takes, showing that the event is an accomplishment.

(77)   Laowang yi   xiaoshi nei da-le   san-tong dianhua lai.
       Laowang one hour   in call-Perf three-CL phone   come
       'Laowang called three times in an hour.'

Apart from being in Deic, V3 following the object may also be in Res as a resultative. This makes *lai* 'come' in some sentences ambiguous between the post-VP *lai* 'come' and the resultative *lai* 'come':

(78)   a.   Laowang na   shu lai   *(le).
            Laowang take book come Perf/Prt
            'Laowang has come to take the books.'
       b.   Laowang na-(le)   shu lai   (le).
            Laowang take-Perf book come Prt
            'Laowang has brought the books.'

We have seen that the post-VP deictic verb cannot co-occur with the aspectual marker affixing to the main verb. In addition, when the post-VP deictic verb is *lai* 'come', the sentence-final *le* must appear. Thus, when the aspectual marker affixes to the main verb or when the sentence-final *le* is not used, as in (78b), *lai* 'come' is in Res. The books undergo movement to the speaker. However, when the aspectual marker does not appear in the sentence but the sentence-final *le* does, the sentence is ambiguous between the books moving to the speaker (i.e., a resultative V3), as in (78b), and the book-taking event being about to happen (i.e., the post-VP deictic verb), as in (78a). The difference in meaning also explains the following contrast:

(79)   a.   Laowang kan dianying lai   le.
            Laowang see movie   come Perf/Prt
            'Laowang has come to see the movie.'
       b.   *Laowang kan dianying lai.
            Laowang see movie   come
            Intended: 'Laowang saw the movie; as a result, the movie came.'

In the grammatical (79a), the post-VP *lai* 'come' refers to the state prior to

the movie-seeing event. In the ungrammatical (79b), *lai* 'come' is in Res, which shows an object undergoing movement toward the speaker. However, the object *dianying* 'movie' that the verb *kan* 'see' takes is not an object that can undergo movement, not even metaphorically. As a result, (79b) is ungrammatical.

In this section, we have seen that V3 can also function as either a resultative or an inner aspect, as with V2. When V3 directly follows V1, it is an inner aspect; when it follows the object, it is a resultative. In addition to being treated as a resultative, when V3 follows the object, it may also be a viewpoint aspect referring to some part of the event. When V3 is used this way, it is in Deic. Despite the fact that both V2 and V3 can appear in IAsp, V3 seems to have additional requirement on the object; that is, without an aspectual marker or a sentence-final particle *le*, the object must have a specific number. I have argued that it stems from the meaning of V3, which takes the speaker as the reference point and does not obligatorily include the endpoint of the movement in the case of *lai* 'come'. In order for the event to be telic, the object has to be an event-measuring DP, thus disallowing a DP without a specific number.

5.4 Directional verbs *qi* and *kai*

We have investigated directional verbs that take a locative argument. We left aside two directional verbs that cannot select a locative argument, which are *qi* 'rise, up' and *kai* 'away'. In this section, I am going to examine these two directional verbs.

5.4.1 *Qi* and *kai* as main verbs

When *qi* and *kai* are used as main verbs, they behave differently from when they are used as directional complements. As a main verb, *qi* has various meanings. One which is related to direction denotes the action that the body moves up:

(80)   Ahua qi   shen likai.
         Ahua rise body leave
         'Ahua stood up and left.'

In this usage, the object of the verb *qi* 'rise' is not a location but rather something undergoing movement. In (80), it is Ahua's body.

Similarly, when *kai* is used as a main verb, it also has various meanings. The most common usage is 'open':

(81)   Ahua kai   men le.
         Ahua open door Prt
         'Ahua has opened the door.'

When Chao (1968) introduces *kai* as one of the directional complements, he translates this word as 'open, apart, away'. However, since it is called a directional complement, the meaning should be associated with direction. The words 'open' and 'apart' in English are not related to direction, so it does not sound like a good translation for *kai*. Liu (1998) states that as a directional complement, *kai* means being away from somewhere. Then, it seems more appropriate to translate it as only 'away'.

We have seen that *qi* 'rise, up' and *kai* 'away' are two directional verbs that do not take a locative argument. After considering how they behave as main verbs, it is reasonable that they cannot take a locative argument. The object of *qi* 'rise' is what undergoes movement, and the object of *kai* 'open' is something that is being opened. In both cases, the location is irrelevant. Therefore, a locative argument cannot be an argument that *qi* 'rise' and *kai* 'open' take. This also accounts for the reason why they do not have the counterpart usages of directional complements when used as main verbs.

5.4.2   *Qi* and *kai* as directional complements

When *qi* 'rise, up' and *kai* 'away' are used as directional complements, like other directional verbs, they can follow V1 but not the object:

(82)   a.   Aming na   qi yi-fen   wenjian.   (V1 V2 O)
              Aming take rise one-CL document

         b. *Aming na   yi-fen wenjian   qi.   (V1 O V2)
              Aming take one-CL document rise
              'Aming picked up a document.'

(83)   a.   Aming ban   kai   yi-kuai shitou.   (V1 V2 O)
              Aming move away one-CL stone

         b. *Aming ban   yi-kuai shitou kai.   (V1 O V2)
              Aming move one-CL stone   away
              'Aming moved away a stone.'

When they directly follow V1, they are in IAsp, showing the beginning point of the event. *Qi* 'rise, up' means moving up from the beginning point and *kai* 'away' means moving away from the beginning point. By contrast, when they directly follow the object, they are in Res. Since Res is a lexical head, it requires the argument structure of the verb. In the case of *qi* 'rise', it takes an agent subject and a theme object. The sentence would be like below:

(84)   *Aming na   yi-fen   wenjian   qi   shen.
        Aming take one-CL document rise body
        'Aming took a document; as a result, the document stood up.'

The agent of *qi* 'rise' is PRO, co-indexed with *yi-fen wenjian* 'a document'. The document does not have a body and cannot stand up by itself. Thus, the sentence is ungrammatical. Example (84) can only mean Aming took a document and stood up, which differs from the resultative showing the endpoint of the event denoted by the first verb.

In the case of *kai* 'open', it also takes an agent subject and a theme object. When *kai* 'open' is in Res, the sentence would be like below:

(85)   *Aming ban   yi-kuai shitou kai   men.
        Aming move one-CL stone open door
        'Aming moved a stone; as a result, the stone opened the door.'

In (85), the agent of *kai* 'open' is PRO, co-indexed with *yi-kuai shitou* 'a stone'. A stone cannot open the door by itself. Thus, (85) is ungrammatical. This sentence can only mean Aming moved a stone and then opened the door, or Aming opened the door by moving a stone, both of which do not show that the resultative indicates the endpoint of the event denoted by the first verb.

When *qi* 'rise, up' and *kai* 'away' co-occur with the deictic verb, not all the word orders are grammatical:

(86)   a.   Aming na   yi-fen   wenjian   qi   lai.   (V1 O V2 V3)
             Aming take one-CL document rise come

       b.   Aming na   qi   yi-fen   wenjian   lai.   (V1 V2 O V3)
             Aming take rise one-CL document come

       c.   Aming na   qi   lai   yi-fen   wenjian.   (V1 V2 V3 O)
             Aming take rise come one-CL document
             'Aming picked up a document.'

(87) a. *Aming ban   yi-kuai shitou kai   lai.   (V1 O V2 V3)
        Aming move one-CL stone   away come

     b. Aming ban   kai   yi-kuai shitou lai.   (V1 V2 O V3)
        Aming move away one-CL stone   come

     c. Aming ban   kai   lai   yi-kuai shitou.   (V1 V2 V3 O)
        Aming move away come one-CL stone
        'Aming moved away a stone.'

As we previously examined, V2-V3 in the (a) examples is a resultative and (c) examples an inner aspect. In the (b) examples, V2 is an inner aspect and V3 is a viewpoint aspect. Since the directional complements *qi* 'rise, up' and *kai* 'away' do not have counterparts when used as main verbs, the ungrammaticality of (87a) is due to *kai-lai* 'away-come' being treated as a lexical verb. The question then would be why (86a) is grammatical.

While *kai-lai* 'away-come' is not a lexical verb, *qi-lai* 'rise-come' is one, which is commonly used:

(88) a. Aming qi-lai-le   ma?
        Aming rise-come-Perf Q
        'Has Aming got up?'

     b. renmin qi-lai   fankang zhengfu.
        people rise-come resist   government
        'People rose against the government.'

     c. ni   qi-lai!
        you rise-come
        'You stand up! (when asking someone to leave his seat)'

Despite different translations in English, the main concept of this word is 'to rise', whether physically or metaphorically. Since *qi-lai* 'rise-come' can be a lexical verb, it can appear in Res. Therefore, (86a) is grammatical.

5.4.3   More on *qi* and *qi-lai*

In addition to the directional meaning, Chang (1994) states that *qi-lai* 'rise-come' can also have the inchoative and the completive meaning, which are categorized as stative usage in Liu's (1998) classifications. The examples are illustrated below:

(89) a. Aming turan   ku qi-lai   le.   (inchoative)
          Aming suddenly cry rise-come Prt
          'Suddenly, Aming started to cry.'

      b. Aming ba shu   shou qi-lai   le.   (completive)
          Aming BA book put   rise-come Prt
          'Aming finished putting books away.'

This distinction is actually similar to *aha* in Malagasy. As a nontelic language, Malagasy needs an inner aspect to ensure the completion of the event, as we saw in (12) and (13), repeated below (Travis, 2010:250-251):

(12) a. namory   ny ankizy ny mpampianatra. (n+an+$\sqrt{\text{vory}}$)
          PST.AN.meet DET children DET teacher
          'The teacher gathered the children together.'

      b. ... nefa tsy nanana   fotoana izy.
          ... but NEG PST.have time   3P
          '... but s/he didn't have time.'

(13) a. nahavory   ny ankizy ny mpampianatra. (n+a+ha+$\sqrt{\text{vory}}$)
          PST.A.HA.meet the children the teachers
          'The teachers gathered the children.'

      b. *... nefa tsy nanana   fotoana izy.
          ... but NEG PST.have time   3P
          '... but they didn't have time.'

In (12), the affix *an* is a causative in *v*; in (13), the affix *aha* includes a stative *a* in *v* and *ha* in IAsp. It is *ha* in IAsp that makes the event become telic. However, when *aha* is used with an activity, which does not have a natural endpoint, *aha* refers to the beginning point of the event, as in (15), repeated below:

(15) a. nandihy   ny ankizy.
          PST.AN.dance the children
          'The children danced.'

      b. nahadihy   ny ankizy.
          PST.A.HA.dance the children
          'The children were able (to begin) to dance.'   (Travis, 2010:251)

Examining (89) again, in (89a), *qi-lai* 'rise-come' co-occurs with an activity. Due to lacking a natural endpoint, *qi-lai* 'rise-come' refers to the beginning point of the event, thus the inchoative reading. By contrast, in (89b), *qi-lai* 'rise-come' co-occurs with an accomplishment, which includes a natural endpoint. As a consequence, *qi-lai* 'rise-come' refers to the endpoint of the event, therefore the

completive reading.

In terms of the morphological status of *qi-lai* 'rise-come', Chang (1994) does not assume that *qi* 'rise' and *lai* 'come' have distinct functions, yet she allows *qi-lai* 'rise-come' to be separated by the object:

(90)   Aming chang qi   ge   lai   le.
         Aming sing   rise song come Prt
         'Aming started to sing.'

Due to *chang ge* 'sing songs' being atelic, it seems plausible to assume that the inchoative reading comes from *qi-lai* 'rise-come' in spite of it being separated. However, *qi* 'rise' alone as a directional complement already has the inchoative meaning:

(91)   ai   hu   diqiu, cong ni   wo zuo qi   (*lai).
         love protect earth from you I   do rise come
         'To protect the earth, it starts from us.'

In (91), *qi* 'rise, up' refers to the beginning point of the doing event. It cannot be replaced by *qi-lai* 'rise-come'. Furthermore, if we make *qi-lai* 'rise-come' in (89b) separated by removing the BA-construction, the completive reading becomes the inchoative reading:

(92)   Aming shou qi   zhexie shu   lai   le.
         Aming put rise these book come Prt
         'Aming started to put these books away.'

Since *shou zhexie shu* 'put these books away' is still an accomplishment, the completive meaning is supposed to be obtained whether *qi-lai* 'rise-come' is separated or not, according to Chang (1994). However, (92) only has the inchoative meaning, suggesting that the inchoative reading in (90) comes from *qi* 'rise, up' as opposed to *qi-lai* 'rise-come'. Following my previous proposal, I argue that when *qi* 'rise' and *lai* 'come' are adjacent, they form a lexical compound; when they are separate, *qi* 'rise' has the directional or the inchoative meaning while *lai* 'come' refers to the result state of the event. The aspectual reading of the compound *qi-lai* 'rise-come' depends on the verb it co-occurs with. If it appears with an activity event, *qi-lai* 'rise-come' has the inchoative reading; if it appears with an accomplishment event, *qi-lai* 'rise-come' has the completive reading.

In this section, we have examined the directional complements *qi* 'rise, up' and *kai* 'away'. We have seen that they cannot take a locative argument due to their meaning not involving movement related to a location. Thus, they can only function as an inner aspect, which explains the only possible word order V1 V2 O. When they co-occur with V3, the lexical verb *qi-lai* 'rise-come' can appear in Res but not the non-lexical verb *kai-lai* 'open-come'. In addition, the inchoative and the completive reading of *qi-lai* 'rise-come' observed by Chang (1994) come from *qi-lai* 'rise-come' being an inner aspect interacting with different aspectual verb classes. When it interacts with an activity, *qi-lai* 'rise-come' has the inchoative reading. When it interacts with an accomplishment, *qi-lai* 'rise-come' has the completive reading.

5.5 Aspectual directional and deictic verbs in Japanese

I have argued that in directional serial verbs, in some cases, the directional verb and the deictic verb function as aspects. This concept seems to not only exist in Mandarin Chinese but also in Japanese. In this section, let us look at the aspectual uses of the directional verbs and the deictic verbs in Japanese.

5.5.1 Directional verbs in the IAsp head

In Japanese, the directional verb following another verb is analyzed as a part of a lexical compound. There are two kinds of lexical V-V compounds in Japanese: thematic and aspectual (Kageyama, 2013, cited in Kageyama, 2016). In the thematic compound, V1 modifies V2, which is left to right modification. It can be paraphrased as V1-te V2, as shown in (93a), where V1 and V2 happens sequentially.[10] In the aspectual compound, there are two subtypes. One is that V2 modifies V1, which is right to left modification. It can be paraphrased as V2 preceding V1, as illustrated in (93b). The other is that V2 adds *Aktionsart* meaning to V1, such as making an atelic verb become telic, as in (93c).[11]

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[10]Note that V1-te V2 here is not a complex predicate since only limited verbs can be used as V2 in V1-te V2 complex predicates. The morpheme *te* here is 'some kind of perfective inflection or a conjunctive particle' (Nakatani, 2016:387).

[11]The mark $\doteqdot$ in (93) denotes that the meaning of the left phrase is similar to the meaning of the right phrase.

(93) a. osi-akeru ⇌ osi-te akeru
          push-open   push-te open
          'open by pushing, push open'

      b. huri-sikiru ⇌ sikiri   ni   huru
          fall-continue   do.repeatedly DAT fall
          '(rain or snow) fall incessantly'

      c. tukuri-ageru
          make-complete
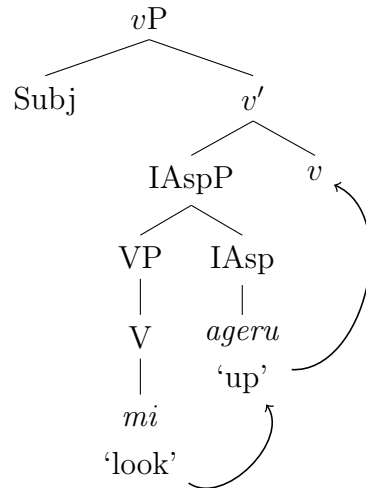   'finish making'   (Kageyama, 2016:293)

In the thematic compound, both V1 and V2 have their own argument structures, which are related to the subject and the object. By contrast, in the aspectual compound, only V1 has the argument structure. Consider the examples in (93). In (93a), both 'push' and 'open' are transitive verbs, with an agent and a theme. When they combine together to form a compound, they are still transitive verbs. The agent is the one who pushes and opens, and the theme is what the agent pushes and opens. On the other hand, in (93b) and (93c), it is V1, 'fall' and 'make' respectively, that determines the argument structure of the whole compound. In (93b), *huru* 'fall' is intransitive, and *huri-sikiru* 'fall incessantly' is also intransitive; in (93c), *tukuru* 'make' is transitive, and *tukuri-ageru* 'finish making' is also transitive.

The directional verbs in the V2 position are categorized as spatial aspect in aspectual compounds (along with temporal aspect and social aspect) by Kageyama (2016):

(94) a. mi-ageru
          'look up'

      b. mi-mawasu
          'look round'

      c. tobi-dasu
          'dash out'   (Kageyama, 2016:297)

Since the directional verbs are V2 in aspectual compounds, they do not have their own argument structure. In (94), the directional verb V2 cannot be paraphrased as V2 modifying V1. Therefore, they should belong to the subtype that V2 adds *Aktionsart* meaning to V1. Because it involves telicity, we can assume that, rather than forming a lexical compound with V1, these directional verbs appear in IAsp and (94a) can be represented as follows:

(95)

```
                    vP
              ┌──────┴──────┐
            Subj           v′
                      ┌─────┴────┐
                    IAspP        v ↰
                  ┌───┴───┐
                 VP     IAsp
                  │       │
                  V     ageru
                  │      'up'
                 mi
                'look'
```

The structure is then similar to Mandarin Chinese. When the main verb under-
goes cylic head movement to v, left-adjunction gives us the correct word order
mi-ageru 'look up'.

5.5.2   Deictic verbs in the Deic head

In terms of the deictic verbs in Japanese, *kuru* 'come' and *iku* 'go', when they
follow a main verb, they are analyzed as one of the complex predicates V-te V,
where only limited number of verbs can be used as the second verb.[12] Nakatani
(2016) states that when *kuru* 'come' and *iku* 'go' are the second verb, they can
indicate physical movement (96a), non-physical (and also non-aspectual) move-
ment (96b), and aspectual function (96c).

(96)   a.   Taroo ga   hon o   kat-te   ki-ta.
            Taro NOM book ACC buy-GER come-PST
            'Taro bought a book and came; Taro bought a book and brought/
            took it along.'

       b.   Taroo ga   boku ni   tegami o   okut-te   ki-ta.
            Taro NOM I   DAT letter   ACC send-GER come-PST
            'Taro sent me a letter.'

       c.   Syoonen wa   dandan   tuyoku nat-te   ki-ta.
            boy   TOP gradually strong become-GER come-PST
            'The boy was getting stronger and stronger.'
            (Nakatani, 2016:390-391)

_____

[12]In order to be easier to compare with directional serial verbs in Mandarin Chinese, I will
use V1 for the main verb and V3 for the deictic verb.

In the physical movement, the subjects of V1 and V3 are the same: *Taroo* in (96a) is the subject of both V1 'buy' and V3 'come'. In the non-physical movement, by contrast, the subjects of V1 and V3 are different: *Taroo* in (96b) is the subject of V1 'send' but not of V3 'come'. In the aspectual function, V3 'come' shows the gradual change of the event: the verb 'come' in (96c) gradually unfolds the event 'the boy became strong'.

Nakatani (2016) compares two sentences with the verb *iku* 'go' as V3 and a locative argument:

(97)　　a.　Kare wa　kaban o　kaisya ni　kakae-te　　　　　it-ta.
　　　　　　　he　TOP bag　ACC office　LOC hold.under.arm-GER go-PST
　　　　　　　'He went to his office, holding his bag under his arm.'
　　　　b.　Kare wa　sirase o　(*kaisya ni)　kii-te　　it-ta.
　　　　　　　he　TOP news　ACC (office　LOC) hear-GER go-PST
　　　　　　　'He heard the news and (then) went (*to his office).'
　　　　　　　(Nakatani, 2016:411)

In the two sentences above, there is a locative argument, *kaisya ni* 'to his office'. While the appearance of the locative argument is grammatical in (97a), it is not in (97b). To account for the contrast, Nakatani (2013, cited in Nakatani, 2016) proposes that under the situation that an argument exclusive to the result event is overt, the causation flow is obligatory:

(98)　　If the causing event involves a theme, the result event should depict what
　　　　happens to the theme (rather than to the agent).
　　　　(Nakatani, 2016:413)

The locative argument *kaisya ni* 'to his office' in (97) is the overt argument that is exclusive to the result event. In (97a), the causing event is 'he held the bag in his arm.' According to (98), the result event should describe the theme in the causing event, that is, 'the bag'. Example (97a) is grammatical, as the result event is 'the bag reached the office'. By contrast, in (97b), the causing event is 'he heard the news'. The theme in the causing event is 'the news', so the result event should depict 'the news'. However, what the result event in (97b) describes is the experiencer 'he' as opposed to the theme 'the news'. Therefore, the sentence with an overt locative argument is ungrammatical.

If we add a locative argument in the physical movement in (96a), the result conforms to (98):

(99)   Taroo ga   hon o   gakkoo ni   kat-te   ki-ta.
         Taro   NOM book ACC school   LOC buy-GER come-PST
         'Taro bought a book and came to school; Taro bought a book and
         brought/took it to school.'

In (99), the causing event is 'Taro bought a book'. Since there is a theme 'book' in the sentence, the result event should depict it, therefore the book arriving at the school.

The non-physical movement in (96b), repeated below, can be accounted for by (98) as well.

(96b)   Taroo ga   boku ni   tegami o   okut-te   ki-ta.
          Taro   NOM I   DAT letter   ACC send-GER come-PST
          'Taro sent me a letter.'   (Nakatani, 2016:391)

Despite the goal *boku ni* 'me' not being exclusive to V3 (i.e., it is shared by V1 'send' and V3 'come'), the result event also depicts the theme in the causing event, that is, 'letter'. Therefore, in both physical and non-physical movement, the result event describes the theme in the causing event.

In terms of the aspectual function, Nakatani (2016) posits that the theme undergoes 'domain-shift' from physical object to event. For example, in (100), it is the whole event, the sky grew light, as opposed to the theme, the sky, that comes to the speaker's perspective.

(100)   Sora ga   akaruku nat-te   ki-ta.
          sky   NOM bright   become-GER come-PST
          'The sky started to grow light.'   (Nakatani, 2016:410)

Consider also the following example:

(101)   Taroo ga   denwa   o   kake-te   ki-ta.
          Taro   NOM telephone ACC place-GER come-PST
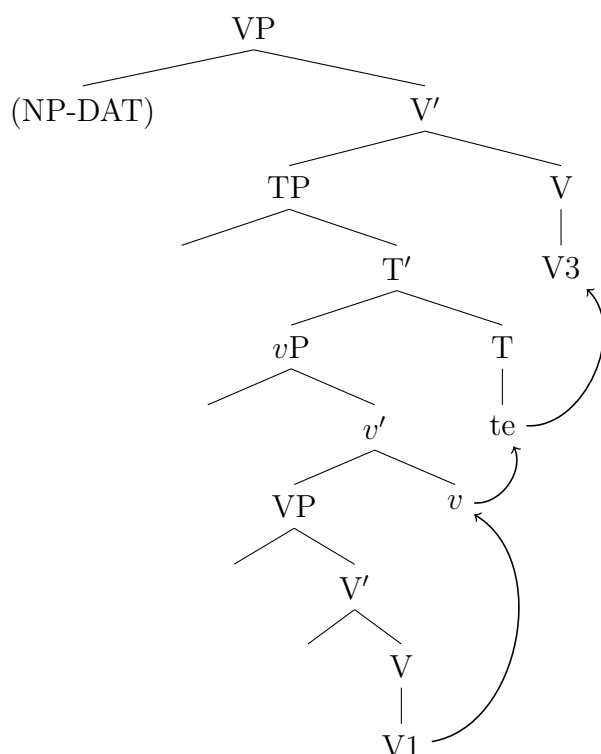   'Taro called (me).'   (Nakatani, 2016:415)

Nakatani (2016) claims that, in (101), what comes to the speaker is neither the telephone nor Taro; rather, it is the phone call that comes to the speaker.

While it looks like the complement of V3 is the V$_1$P event, Nakatani (2013, cited in Nakatani, 2016) argues that the complement of V3 is actually the 'stretch' of

the V_1P event. In other words, what comes to the speaker is the continuation or the consequence of the V_1P event. Taking (101) as an example, the consequence of the calling event is the phone call. Therefore, it is the phone call that comes to the speaker.

Nakatani posits that *te* in V-te V complex is a relative past tense marker, a non-finite variant of the past tense marker *ta*. The complement of V3 is V_1P-te rather than V_1P. According to him, the structure would look like below:

(102)

```
                        VP
             ┌──────────┴──────────┐
        (NP-DAT)                   V′
                          ┌────────┴────────┐
                         TP                 V
                   ┌──────┴──────┐          │
                               T′          V3
                         ┌──────┴──────┐
                        vP             T
                   ┌─────┴─────┐       │
                             v′       te
                      ┌───────┴───┐
                     VP           v
                ┌─────┴─────┐
                          V′
                     ┌─────┴───┐
                              V
                              │
                             V1
```

In (102), V1 is merged within vP, which is the complement of TP. The relative past tense marker *te*, a bound morpheme, is merged in T. Due to the morphological reason, V1 moves to T, becoming V1-te. TP is the complement of V3, and V1-te further moves to V3, becoming V1-te-V3. If there is any locative argument, it merges beyond V1-te-V3, thus an argument of V1-te-V3.

It seems that, similar to *lai* 'come' in Mandarin Chinese, in Japanese, when there is an object undergoing movement, it must be the theme to undergo movement, whether the subject moves along with it (physical movement) or not (non-physical movement). As I have proposed, the distinction of physical and non-physical movement is not determined by syntax but by the meaning of V1. When V1 is not an intransitive verb, what is important is the movement of the object in both cases, which is accounted for by causation flow.

With respect to the aspectual function use of *kuru* 'come', similar to *lai* 'come' in Deic in Mandarin Chinese, it is not related to an object undergoing movement but rather an event. In both Japanese and Mandarin Chinese, the deictic verb following the main verb has a similar interpretation. However, Mandarin Chinese does not have a past tense marker like *ta* in Japanese, let alone a non-finite variant one. In Nakatani's (2013, cited in Nakatani, 2016) analysis, *te* in V-te V complex seems to play an important role in the aspectual function reading. It serves as a function to logically or pragmatically infer the theme to be the 'stretch' of the V_1P event. However, V1 and V3 are linked by *te* in all the readings (physical movement, non-physical movement, and aspectual function). In other words, without the 'stretch' meaning, *te* is still used to link the two verbs. Therefore, it is unlikely that the 'stretch' reading comes from *te*. If we assume that *te* appears in v, similar to '-ing' in English (Adger, 2003:283), rather than in T, the aspectual function use of *kuru* 'come' in Japanese can be in Deic, the same as the aspectual *lai* 'come' in Mandarin Chinese:

(103)
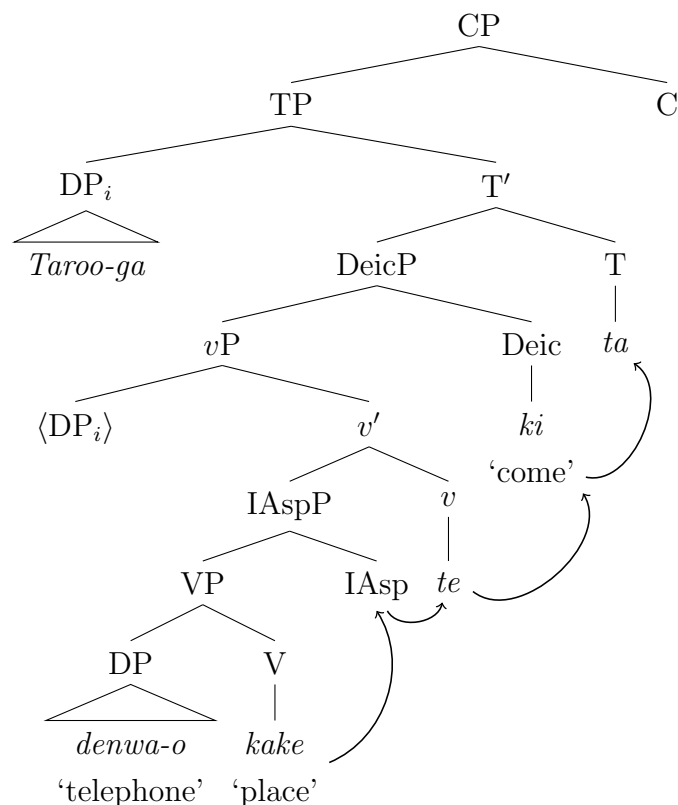
In (103), the aspectual *ki* 'come' is merged in the Deic head between TP and vP. Like the aspectual *lai* 'come' in Mandarin Chinese, *ki* 'come' also indicates the result state of the event, thus the domain shifting from spatial to mental. Due to Japanese being a head-final language, the heads all appear on the right. After

the main verb *kake* 'place' undergoes cyclic head movement to T, the word order is V1 V3, on a par with the Chinese counterpart. The 'stretch' reading then does not come from the non-finite variant of the past tense marker, *te*, but from the deictic verb in Deic, which refers to the result state of the event.

5.6 Chapter summary

We have seen that directional verbs and deictic verbs can function as either main verbs or directional complements. Following Chen (2016) and differing from Chao (1968) and Li and Thompson (1981), we treat the adjacent directional and deictic verbs as lexical compounds, thus disallowing any element to insert in between.

We have examined directional complements with a locative argument and found that the locative argument must appear directly after the directional complement. I have argued that different word orders stem from two distinct structures. The directional complement may be either as a resultative in the Res head or as an inner aspect in the IAsp head. When it is a resultative, the directional complement is a lexical verb and therefore has its own argument structure. This accounts for the reason why *V1 O V2 cannot be an acceptable word order, as V2 (except *qi* 'rise, up' and *kai* 'away') needs a locative argument to receive the θ-role. When V2 is in IAsp, it is an aspect and does not have an argument structure. Thus, a locative argument is not compulsory in the V1 V2 O word order.

I have proposed that the deictic verb following the object alone is in the Deic head between ModP and AspP, triggering the event to move to its specifier position. When the deictic verb *lai* 'come' follows the event, it refers to the result state of the event; when the deictic verb *qu* 'go' follows the event, it refers to the early part of the event. The contrast in meaning explains the reason why in some cases, *lai* 'come' but not *qu* 'go' can appear as V3.

Some issues still need further investigation. For instance, we have argued that *lai* 'come' may be in three positions: Res, IAsp, and Deic. However, none of these positions seem to be able to account for the word order in (35c), repeated below:

(35c) Ahua na jin   chufang lai   yi-dai shuiguo. (V1 V2 L V3 O)
       Ahua take enter kitchen come one-CL fruit
       'Ahua brought a bag of fruit into the kitchen.'

V3 *lai* 'come' in (35c) cannot be in Res as a resultative. If it were, the object

would not follow V3. It cannot be in IAsp either, as this position is already occupied by V2. Then the only possibility is Deic. However, our proposal is that the event moves to the Spec,DeicP. If V3 is in the Deic head, why can the object *yi-dai shuiguo* 'a bag of fruit' follow *lai* 'come', under the assumption that the object is inside *v*P? One may assume that the object undergoes extraposition. However, consider the following example:

(104)   a.   Ahua na   jin   chufang lai   le yi-dai   shuiguo.
             Ahua take enter kitchen come LE one-CL fruit

        b.   Ahua na   jin   chufang lai   yi-dai   shuiguo le.
             Ahua take enter kitchen come one-CL fruit   Prt
             'Ahua has brought a bag of fruit into the kitchen.'

As we can see, the morpheme *le* can appear either directly after *lai* 'come' or at the end of the sentence. If we assume that *le* in (104a) is a sentence-final particle and the object undergoing extraposition moves to a position after it, we cannot explain why *le* can also appear after the object that has been extraposed, as in (104b). I have no explanation for this now. I leave it for future research.

Chapter 6

Conclusion

Two constructions have been examined in this thesis. In both constructions, the deictic verb interacts with a verb phrase. In Chapter 1, I asked a research question: what is the function and the meaning of the deictic verb when it co-occurs with a verb phrase and does not have a clear spatial reading? After examining the two constructions, my answer is that it functions as a viewpoint aspect. When the deictic verb precedes a verb phrase, it refers to the state prior to the occurrence of the event; when it follows a verb phrase, it indicates either the early part of the event, in the case of *qu* 'go', or the result state of the event, in the case of *lai* 'come'.

In addition to the aspectual deictic verb not being related to movement in space, I have argued that when the deictic verb co-occurring with a verb phrase is associated with physical movement, it is also a viewpoint aspect. The difference between the two aspectual deictic verbs is that the nonspatial deictic verb only considers movement in the mental domain while the spatial deictic verb concerns movement both in the mental and the spatial domain.

I have proposed two Deictic Phrases for the aspectual uses of the deictic verbs, the positions of which are between ModP and AspP. When the aspectual deictic verb involves physical movement, the deictic verb is in the SDeic head; when the aspectual deictic verb is not related to movement in space but concerns the speaker's perspective, it is in the NDeic head. With respect to the relative position of the two DeicPs, NDeicP is higher than SDeicP.

The first construction we examined is Tang's (1979) auxiliary use of the deictic verb, where the aspectual deictic verb co-occurs with a verb phrase, including three word orders: the aspectual deictic verb appearing before the verb phrase, after the verb phrase, or in both positions simultaneously. In the case of the

deictic verb appearing before the verb phrase, the deictic verb is in SDeic when movement is associated with space, as in (1a); when movement does not take place in the spatial domain but is related to the speaker's point of view, the deictic verb is in NDeic, as in (1b).

(1)　　a.　Laowang lai　mai hua　le.
　　　　　　Laowang come buy flower Prt
　　　　　　'Laowang has come to buy flowers.'

　　　　b.　wo lai　kai　men.
　　　　　　I　come open door
　　　　　　'I'll open the door.'

In the case of the deictic verb appearing after the verb phrase, the deictic verb is in SDeic. The event denoted by the verb phrase moves to the lower Spec,FocP in order to be emphasized, the position of which is between NDeicP and SDeicP. This explains why the sentence always involves physical movement in the appearance of the post-VP deictic verb, as shown below:

(2)　　a.　Laowang mai hua　lai　le.
　　　　　　Laowang buy flower come Perf/Prt
　　　　　　'Laowang has come to buy flowers.'

　　　　b.　wo kai　men lai　le.
　　　　　　I　open door come Perf/Prt
　　　　　　*'I'll open the door.'
　　　　　　'I have come to open the door.'

When the deictic verb appears both before and after the verb phrase, the pre-VP deictic verb is in NDeic and the post-VP deictic verb is in SDeic. The verb phrase moves to the lower Spec,FocP to be emphasized. Like sentences with only the post-VP deictic verb, when the deictic verb occurs in both positions simultaneously, movement in space must be involved as well, as illustrated below:

(3)　　a.　Laowang lai　mai hua　lai　le.
　　　　　　Laowang come buy flower come Perf/Prt
　　　　　　'Laowang has come to buy flowers.'

　　　　b.　wo lai　kai　men lai　le.
　　　　　　I　come open door come Perf/Prt
　　　　　　*'I'll open the door.'
　　　　　　'I have come to open the door.'

The second construction we examined is Tang's (1979) complement use of the deictic verb and also some of the metaphorical use, both of which belong to directional serial verbs in Mandarin Chinese. Directional serial verbs can consist of up to three verbs, which are a main verb, a directional verb, and a deictic verb. The order of the verbs is strict but the object can follow of any verb:

(4)   a.   Laowang na   yi-ben shu jin-lai.
              Laowang take one-CL book enter-come

        b.   Laowang na   jin   yi-ben shu lai.
              Laowang take enter one-CL book come

        c.   Laowang na   jin-lai   yi-ben shu.
              Laowang take enter-come one-CL book
              'Laowang brought a book in.'

Following Chen (2016), I have argued that when the directional verb and the deictic verb are adjacent, they form a lexical compound. When the directional complement, which may be a directional verb, a deictic verb, or a compound, directly follows the main verb, I have proposed that it is an inner aspect, such as *jin* 'enter' in (4b) and *jin-lai* 'enter-come' in (4c). When the directional complement follows the object, it is a resultative, like *jin-lai* 'enter-come' in (4a).

The difference between an inner aspect and a resultative is that the former is a functional head and the latter is a lexical head. This distinction makes the appearance of a locative argument obligatory when the directional verb is in Res but optional when the directional verb is in IAsp:

(5)   a.   Laowang na   yi-ben shu jin   *(fangjian).
              Laowang take one-CL book enter   room

        b.   Laowang na   jin   (fangjian) yi-ben shu.
              Laowang take enter room   one-CL book
              'Laowang took a book into the room.'

In addition to the directional complement being a resultative, when the deictic verb follows the object alone, it may function as a viewpoint aspect, as *lai* 'come' in (4b), where *lai* 'come' refers to the result state of the event. I have argued that the aspectual use of the deictic verb in directional serial verbs is also in the Deic head. When the speaker's physical location is involved, the deictic verb is in the SDeic head; when the speaker's point of view is expressed, the deictic verb is in the NDeic head.

I have proposed a [+/-realize] feature on Deic, inherited from C. When the event has not been realized, the feature is [-realize], which refers to the state prior to the occurrence of the event. The [-realize] feature agrees with the event in situ, as what we have seen in the first construction. When the event has been realized, the feature is [+realize], which refers to some part of the event. The [+realize] feature triggers the event to move to the Spec,DeicP, resulting in the aspectual deictic verb appearing after the verb phrase, as what we have seen in directional serial verbs.

Some questions need further investigation. There seem to be some constraints on the use of the aspectual deictic verb. If the deictic verb in the Deic heads is simply a viewpoint aspect indicating a certain period related to the event, why is it incompatible with the directional verb being a main verb when the deictic verb appears preverbally, given that it only refers to the state prior to the occurrence of the event, as in (6a)? In addition, as Chen (2016) observes, why does the co-occurrence with the resultative verb compound result in ungrammaticality when the aspectual deictic verb appears after the verb phrase, if *lai* 'come' only indicates the result state of the event, as in (6b)?

(6)   a. *Laowang lai   chu guo.
               Laowang come exit country
               Intended: Laowang will leave the country.

       b. *Laowang da-po   beizi lai.
               Laowang hit-break cup   come
               'Laowang broke the cup.'

I leave these questions to future research.

Abbreviations

BA	a marker used before the object in the BA-construction
CL	classifier
DE	a possessive marker; a relative clause marker;
	a particle for emphasizing the statement; a potential morpheme;
	a marker before the phrase showing the result or depicting the manner
Deic	deictic
Dur	durative aspectual marker
E	event
Exp	experiential aspectual marker
IAsp	inner aspect
NDeic	nonspatial deictic
Perf	perfective aspectual marker
Prog	progressive aspectual marker
Prt	particle
Q	question marker
Res	resultative
SDeic	spatial deictic

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