

6. Verbal *-le*: Aspect and Tense

6.0 Introduction

In this chapter I turn to verbal *-le* and consider how the re-positioning of *-le/liao* relative to the main verb and its object relates to parallel changes observed in resultative constructions. Suggesting first that *-le/liao* historically underwent structural re-analysis as completive aspect similar to other V_2 elements in RVCs, I then concentrate on the synchronic status of verbal *-le* and argue that a particular process of upwards grammaticalization in the functional structure dominating VP has resulted in verbal *-le* currently being a morpheme which may actually instantiate three discrete functional heads--completive aspect, perfective aspect and also more controversially past tense. The chapter attempts to show that Smith's (1997) binary theory of situational and viewpoint aspect provides an insightful model for understanding the roles played by different functional suffixes on the verb, and argues for the possibility that functional morphemes undergoing change may naturally instantiate more than just a single functional head in any extended functional sequence. In general, the central conclusion of the chapter that affixal elements undergo grammaticalization and re-analysis in a way which significantly parallels the movement-dependent re-analysis of free-standing morphemes is shown to provide strong evidence in favor of the Minimalist hypothesis that affixes are licensed via raising to a higher functional head, and that this raising may take place either overtly or covertly at the level of LF.

6.1 The Re-positioning of *Le/Liao*

Historically it is well-documented that modern day verbal *-le* in fact originated as the full verb *liao* meaning 'to finish' in a sentence-final position and then later re-positioned itself right-adjacent to the main descriptive verb. Where the main verb is transitive with an object NP, this re-positioning is particularly obvious, as illustrated in (1):

- (1) a. V Object *liao/le* →
b. V *liao/le* Object

The change from (1a) to (1b) is reported to have taken place primarily during the Song dynasty (960-1279) (see for example Mei 1981, Z. Shi 1988, and G. Wu 1999). The obvious question, as with V_2 re-positioning in RVCs, is why such re-positioning should have taken place. One possibility which might naturally be entertained is that the change occurred for phonological reasons. It is clear that modern day verbal *-le* is phonologically much reduced from its earlier full form *liao* and is now fully dependent on the verb to its left. It might therefore be suggested that *liao* first reduced to a clitic-form *le* and then raised to the verb to encliticize to it as a suitable host element. However, such a possibility can in fact be rather quickly dismissed. In a recent very informative paper G. Wu (1999) shows that there is good evidence that *liao* first re-positioned itself right-adjacent to the verb and only much later underwent reduction to *le*. Among other evidence for this conclusion is a particularly telling argument from Korean. In the Korean textbook of Mandarin

Chinese called the *Chunggan Nogoltae* written in 1795, the element corresponding to modern day verbal *le* is transcribed as having a pronunciation equivalent to *liao* not *le*. Verbal *le* then still had its original shape *liao* at least until the end of the 18th century, five hundred years after it underwent its positional change. Consequently such re-positioning cannot be ascribed to any phonological clitic-like properties of *le* triggering movement of *le* to the verb.

Fully in line with suggestions made in a number of works (e.g., Mei 1981, Z. Shi 1988, G. Wu 1999, Sybesma 1999), I would instead like to assume that the re-positioning of *liao/le* was actually just one instance of the general phenomenon of V₂ re-positioning which occurred in resultative constructions. It has been frequently noted that the change in *liao*'s position essentially coincided with the re-positioning of V₂ elements in RVCs. The latter is suggested to have occurred around the time of the Song dynasty (probably preceded by its beginning emergence in the Tang dynasty), which is precisely when *liao* also underwent its positional change. G. Wu (1999) writes that:

The "V(O)+phase complement" structure emerged during the Wei, Jin and the Northern and Southern Dynasties, and changed into the "V+phase complement (O)" structure around Song. (p.22)

It is therefore commonly suggested that *liao* re-positioning may be thought of having been strongly influenced by V₂ re-positioning in RVCs and might even be considered to be a further occurrence of the general change in RVC word order. G. Wu (1999) continues:

. . . the grammaticalization of *liao* coincides with the development of the "verb resultative complement" structure and the formation of resultative verb compounds in the language. In other words, the grammaticalization of *liao* is actually a part of the process. (p.23)

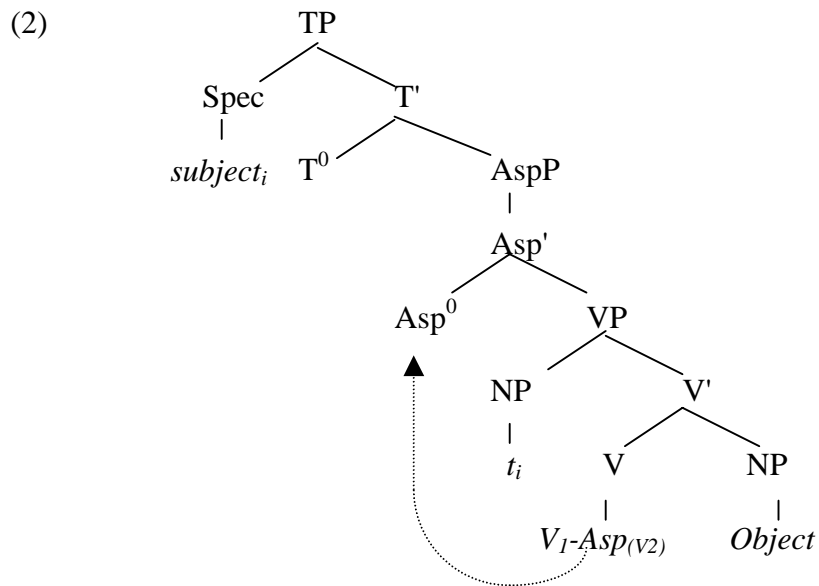
The original element *liao* did indeed also have the meaning of a typical resultative phase-type V_2 'to finish' and can therefore be taken to have signaled simple completion much in the same way as other V_2 elements such as *wan* 'to finish' do. I would therefore now like to simply assume that *liao* originally occurred in the sentence-final completive Asp^0 and then later underwent 're-positioning' to be right-adjacent to the verb for the same reasons suggested to underlie the re-positioning of RVC V_2 elements in general, i.e., *liao* became re-analyzed as an aspectual suffix on the V_1 in order that the head-final $AspP$ could be re-interpreted as being head-initial instead. Only much later on *liao* would then have phonologically reduced to its present pronunciation as *le*.

This much concerning verbal *-le* is not so new in terms of the basic underlying conclusion that *liao/le* was originally just one of the general phase- V_2 group in RVCs. The mechanism which led to its re-positioning is also taken to be essentially the same as that which occurred with other V_2 's. What is now of greater interest with verbal *le* is the possibility that *le* has in fact undergone further significant development from being just a simple completive aspect marker to encode other higher functions as well. I will therefore spend the rest of this chapter considering what kind of formal syntactic structures might correspond to the interpretations instantiated by modern day verbal *le* and how diachronic development

might have also given rise to such structures, i.e., what mechanisms might lead to the changes observed.

6.1.1 The Current Status of Verbal Le and Completive Aspect

Given the fact that *liao* had the typical completive-type meaning of other V2 elements and that it underwent re-positioning at the same basic period as other V2's it would seem to be fairly natural and straightforward to treat it as a simple V2 as suggested here and also by various other investigators. In the present approach proposed in chapter 5, this consequently means assuming that it was first generated in the sentence-final completive Asp0 and then together with the other V2's re-analyzed as a verbal suffix licensed by a higher 're-aligned' completive AspP at LF, as demonstrated in (2):



Now, although it can be maintained that such an analysis has good motivation as a *diachronic* account of the origin and re-positioning of *liao/le*, there is also evidence indicating that *synchronically* verbal *le* in fact may not have exactly the same status as other members of the V_2 set and that *le* may therefore have undergone some further syntactic change since its initial re-analysis.

One rather simple but strong piece of evidence that *le* is currently different from other V_2 aspect suffixes is that *le* may occur as a suffix *in addition* to a second regular V_2 suffix of either 'literal' or phase type, as shown in (3) and (4) below. Such examples contrast with (5) and (6) where *le* occurs just with a bare V_1 :

- (3) ta xi-ganjing-le suoyoude yifu
 he wash-clean-LE all clothes
 'He washed all the clothes clean.'
- (4) wo yijing kan-wan-le san-ben-shu le¹
 I already look-finish-LE 3-CL-book LE
 'I already finished reading 3 books.'
- (5) wo yijing chi-le fan-le
 I already eat-LE rice-LE
 'I've already eaten.'
- (6) ta zuotian qu-le Beijing
 he yesterday go-LE Beijing
 'He went to Beijing yesterday.'

¹ I do not attempt to provide any account of sentence-final *-le* here. It is included in many of the examples simply for naturalness.

In (3) and (4) it is clear that *ganjing* 'be-clean' and *wan* 'be-finished' are in the regular V_2 position signaling completion of the action and can be therefore taken to instantiate completive aspect, raising to and being licensed by Asp^0 at LF. This being so, the *le* which occurs outside the V_{2Asp} must be taken to encode some other function here.

A second reason to believe that *le* is at least in some of its occurrences not licensed as completive aspect is that *le* is also frequently found with *achievement* predicates which represent instantaneous events with no extension over time. Typical V_2 completive verbs/suffixes occur with V_1 elements which represent *activities* which do occur over a period of time; the V_{2Asp} suffix marks the end-point of the activity and signals completion of the action. In contrast to activities (such as 'run,' 'wash,' 'read,' etc.) or accomplishments (such as 'draw a circle,' 'walk to school,' etc.), achievement predicates such as 'arrive,' 'recognize someone' and 'die' are commonly interpreted as referring to events which are instantaneous and do not take any time. Consequently such predicates are normally quite unnatural with expressions of completion which require that the predicate express an action which naturally extends over a period of time before it is indeed completed. Examples in (7)-(9) below have achievement predicates whereas those in (10)-(11) have an activity and an accomplishment predicate:²

² If a hearer can interpret predicates such as 'recognize X,' and 'die' in a non-canonical way and create a special context in which they can be understood as requiring certain time, then sometimes such predicates can be acceptable. Native speakers indicate that this is particularly difficult with 'arrive' and only marginally possible with 'recognise' in a game show type context.

- (7) */??John finished recognizing Mary.
- (8) */??Mary finished arriving.
- (9) */??Bill finished dying.
- (10) John finished reading.
- (11) John finished drawing the circle.

In Chinese one finds that *le* is highly natural with all of the achievement class and no special context is required for use of *le* with achievement verbs, i.e., they are still interpreted as representing instantaneous actions/events. This indicates that *le* in such instances cannot be expressing *completion* but some other function. (12) and (13) are examples with clear achievement predicates:

- (12) ta ba-dian-shi-wu-fen jiu dao-le huo-che-zhan
he 8-hour-15-minute then arrive-LE train-station
'He arrived at the train station at 8.15.'
- (13) shou-shang-de ren dang-zhong, huran si-le liang-ge-ren
receive-injury-DE people among suddenly die-LE 2-CL-people
'Among the injured, suddenly another two people died.'

It should be noted that such predicates are completely unacceptable with other general V_{2Asp} completive suffixes such as *wan* 'finish' confirming that they are interpreted as instantaneous actions and that they are consequently incompatible with a V_2 which expresses (general) completion:

- (14) *ta zuotian si-wan-le
 he yesterday die-finish-LE
 literally: ??'He has finished dying yesterday.'
- (15) *tamen xianzai dao-wan-le huo-che-zhan
 they now arrive-finish-LE train-station
 literally: *'They have now finished arriving at the train station.'

It can therefore be concluded that *le* may express some function which is clearly distinct from simple completion. The question to be answered now of course is what exactly is this function of *le*? In order to approach the issue I will now present a brief overview of Smith's two-tiered theory of aspect and show how it provides a rather natural answer to the question of *le*'s role in examples such as (3)/(4) and (12)/(13). Anticipating the results somewhat, it will be suggested that *le* here encodes perfective aspect as is in fact suggested in various other descriptive approaches such as Li & Thompson (1981), though the notion of perfective aspect which will be adopted here is somewhat different from that assumed in certain typological works such as Bybee et al (1994). Syntactically it will be suggested that this perfective aspect is structurally distinct from completive aspect, with both types of aspect being represented by discrete functional heads/projections. Incorporating certain insights in Sybesma (1999) and others it will subsequently be argued that *le* is in fact able to encode both completive and perfective aspect with a number of verbs and that it is the natural grammaticalization of completive *le* with these verbs to a structurally higher aspect head as a result of LF movement which allows for its current generalized use as a perfective.

6.1.2 Smith (1997): Two Different Types of Aspect

Smith (1997) convincingly argues that the commonly used term 'aspect' in fact refers to two quite different types of properties, which she then describes as 'situational aspect' and 'viewpoint aspect.' Situational aspect is suggested to be an inherent property of predicates and refers to the basic types of situations represented by a predicate--the Aktionsart of a predicate in more traditional terminology. As proposed in Vendler (1957) and frequently assumed in other works, situations described by predicates may essentially be classified according to three parameters: (a) whether they are aspectually bounded/telic or not, (b) whether they are instantaneous or have extension over time, and (c) whether they are dynamic or not. The cross-classification of such properties is commonly taken to result four basic situation types, as in (16):

(16) **Situation Types**

Situation type	example	properties
<i>stative</i>	be happy	-dynamic, -instantaneous, -telic
<i>activity</i>	run, talk	+dynamic, -instantaneous, -telic
<i>accomplishment</i>	draw a circle, run to X	+dynamic, -instantaneous, +telic
<i>achievement</i>	arrive, recognize X	+dynamic, +instantaneous, +telic

Viewpoint aspect, by way of contrast, is suggested to encode how one views any of the above situation types on a particular occasion. Following earlier work such as Comrie (1976) it is noted that it is possible for a single basic situation type to be linguistically presented in different ways, this corresponding to different perspectives

or 'viewpoints' on the event/situation. If one assumes that events and situations potentially may have initial points, end points and internal stages as represented in (17) with a sequence of points, viewpoint aspect is suggested to allow for focusing on these properties in two common ways:³

(17) Potential Event Type

Initial Point..... (internal stages)..... End Point

Imperfective viewpoint aspect is suggested to focus just the internal parts/stages of a situation, and does not include either any initial or final endpoint in its focus/presentation. In English, the *be...-ing* form is the standard imperfective aspect; this focuses attention on the internal progression of the situation rather than any initial point or endpoint it may have. Note that viewpoint aspect is a type of aspect which is distinct from the classification of an event in terms of its situation aspect. The imperfective may combine with either an unbounded activity situation type as in (18a) or a bounded accomplishment as in (18b). However, because the imperfective form by definition focuses the internal stages of a situation, it cannot normally be combined with achievement situations which are +instantaneous and have no internal stages, as seen in (17c). Also, in English, the *be...-ing* imperfective does not combine with stative situations because the *be...-ing* imperfective requires a situation which is +dynamic:

³ Smith (1997) also argues for a third type of viewpoint aspect which is referred to as 'neutral' viewpoint aspect. As the existence of such a third basic viewpoint type is somewhat open to question, I here concentrate on the more traditional binary contrast of perfective and imperfective (viewpoint) aspects.

- (18) Imperfective viewpoint aspect
- | | | |
|----|-------------------------------|-------------------------------|
| a. | John is/was running. | imperfective + activity |
| b. | Mary is/was drawing a circle. | imperfective + accomplishment |
| c. | *John was recognizing Mary. | imperfective + achievement |
| d. | *Mary is/was being pretty. | imperfective + stative |

Note also that both the imperfective viewpoint aspect and the situation aspect of any event/situation are properties which are independent of the tense property associated with that event/situation, and that tense simply functions to locate an event/situation in time. Because of this independence, the tense associated with an event/situation may clearly be varied while maintaining the viewpoint aspect constant as imperfective, as seen above in (18a/b).

In contrast to imperfective viewpoint aspect, *perfective* viewpoint aspect is argued to focus the whole of a situation and therefore critically include both the initial and the final endpoint of a situation in this focus. In many languages such perfective viewpoint aspect would actually not seem to be expressed by any distinct overt morpheme on the verb; in English. For example, there is no identifiable perfective counterpart to the imperfective *be...-ing* form; rather, it may be suggested that perfective has zero morphological expression and that a verb may come to be interpreted as perfective when it is not marked positively for imperfective viewpoint. Concretely, when a simple past tense form of a verb in *-ed* occurs, it expresses perfective viewpoint in addition to past time location as it importantly contrasts with the combination of past and imperfective which results in *was V-ing*:

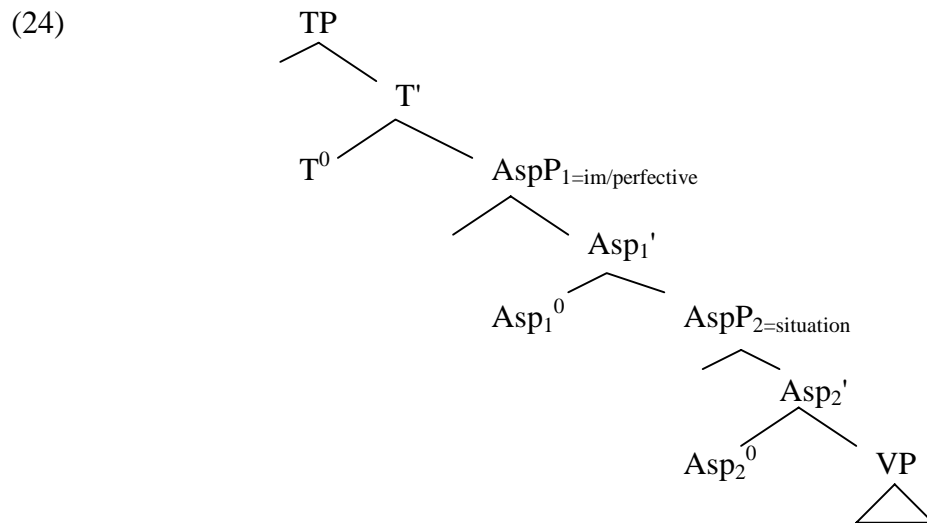
- (19) past + perfective + situation/verb
-ed + \emptyset + *walk to the park* → *(John) walked to the park.*
- (20) past + imperfective + situation/verb
 past + *be...-ing* + *walk to the park* → *(John) was walking to the park.*

As is the case with imperfective viewpoint aspect, perfective aspect is in essence independent of the situation aspect of a predicate and may therefore be combined with events encoding different situation aspects. For example, the following are all taken to encode perfective rather than imperfective aspect (largely due to the contrastive absence of *be...-ing*):

- (21) John walked to the park. perfective + accomplishment
- (22) John arrived at the park. perfective + achievement
- (23) John walked in the park. perfective + activity

Consequently it may be argued that there are (at least) three distinct formal properties potentially associated with any predicate--(a) its situation type/aspect, (b) the viewpoint aspect used to present that situation, and (c) its temporal location, i.e., the tense used to locate the situation relative to other events/situations. These three properties might also seem to occur in a natural hierarchical ordering. Compositionally, a situation/event will first be identified and defined in terms of its situation aspect; then the situation will be presented in a particular way, either as a whole with perfective aspect, or with a focus on its internal structure with imperfective aspect. Finally the situation/event so interpreted may be located in time

via the use of tense. Such a natural compositional hierarchy among the three properties is also found to be reflected in the linear ordering of tense and aspect elements in many languages. In head-initial languages where tense and aspect markers are instantiated by independent free-standing morphemes rather than by suffixes, it is commonly noted that tense morphemes precede im/perfective-type morphemes, which in turn precede morphemes relating to situation-type aspect (see Cinque 1999 for a wide range of data and relevant discussion). If one assumes that such unbound morphemes are located in (functional) head positions, in head-initial languages this leads to the simple conclusion that tense/TP hierarchically dominates perfective aspect which in turn dominates situation aspect, as schematically illustrated in (24):



A structure such as (24) also naturally encodes the selection relation between viewpoint aspect and situation aspect. For example, above in (18) it was noted that the English imperfective viewpoint aspect *be...-ing* combines only with predicates

which have the aspectual situation type of either activity or accomplishment. (Viewpoint) Asp₁⁰ can therefore be taken to select for the situation type represented by (situation) AspP₂.

The main semantic difference between the viewpoint types argued for by Smith concerns how much of a situation that the viewpoints 'make visible' in any particular instance. As noted, perfectives focus a situation in its entirety and so include the initial and final endpoints of the situation, whereas imperfectives only focus on the internal stages of an event and so exclude the endpoints from the focus. Smith points out that such a difference in the presentation of an event can be clearly observed when one attempts to qualify the description of im/perfective events with denials and continuative statements. For example, it is possible to combine imperfective aspect with a telic situation (and past tense) to describe a certain situation and then deny the completion of that situation, as in (25):

(25) Mary was walking to school, but she didn't actually get there.

This contrasts with the combination of perfective aspect with a telic situation and past tense to describe the same essential situation. Such a combination does not allow for any denial of the completion of the event:

(26) *Mary walked to school, but she didn't actually get there.

The contrast in (25) and (26) can be given the following explanation. In (26) the use of a perfective viewpoint (i.e., lack of *be...-ing* form) makes both the initial and final endpoints of the event (properties of its situation aspect) naturally 'visible' in the

description. When past tense is applied to a telic event whose endpoints are visible and focused by the perfective viewpoint, this consequently results in an interpretation in which both the initial and the final endpoint are interpreted as having been realized. Because the final endpoint of having arrived at the school is therefore understood as having occurred, it is impossible to follow this with a denial that it occurred. In (25) however, due to presentation of the same telic situation with imperfective viewpoint aspect, there is only focus on the internal stages of the event, and while it can be deduced that the initial point must have occurred in order for there to be these internal stages, there is no necessity that the final endpoint also be realized. Semantically the endpoint is simply not made visible in the presentation of a telic situation with an imperfective viewpoint, and consequently it is possible to deny that such an endpoint actually is realized. It should be carefully noted that the relevant factor here is not tense, as (25) and (26) are both given past tense (nor is it situation aspect, as the situation is identical and telic in both cases); it is critically just the viewpoint choice which is responsible for the difference in acceptability. Such simple contrasts again illustrate the conclusion that tense, viewpoint aspect and situation aspect are indeed three essentially independent properties.

The same basic patterning is seen again with attempted statements of continuation.

- (27) John was writing the letter an hour ago, and in fact he still is writing it.

(28) *John wrote the letter an hour ago, and in fact he still is writing it.

In (27) use of the imperfective does not make the endpoint visible and so it can be asserted that the endpoint effectively has not occurred. In (28) however, the perfective viewpoint does make the endpoint visible and so when combined with past tense results in an interpretation that the letter-writing was completed and therefore cannot be still continuing.

Given that examples such as (26) and (28) with past tense and perfective viewpoint applying to a telic predicate cannot be followed by any denials of completion, and given also that past tense applied to the same telic situation presented with imperfective aspect does allow for a denial of completion, one can assert the following conclusions, in line with Smith (1997):

(29)

- a. realized completion is part of the genuine meaning of past tense applied to perfective aspect presenting a telic situation and is not simply a pragmatic inference.
- b. perfective viewpoint is critical in effecting the meaning of realized completion, because past tense and a telic predicate otherwise with imperfective aspect do not result in any necessary interpretation of completion.
- c. perfective viewpoint does indeed 'exist' in English although not obviously instantiated here by an overt morpheme distinct from past tense.
- d. it is necessary to recognize three independent properties which interact with each other in different combinations--tense, viewpoint aspect and situation aspect.

Finally it can be noted that Smith (1997) argues strongly that both types of viewpoint and situation aspect are in fact always present in some form in the linguistic representation of events. It is suggested that the lower situation aspect properties of a predicate can only be semantically interpreted if some kind of viewpoint aspect is applied to make them visible and that this requirement results in the occurrence of viewpoint aspect being necessarily encoded in some way in the descriptions of all events.

6.1.3 Verbal *-le* and Perfectivity

The above discussion of Smith's well-reasoned two-tiered theory of aspect now allows for a clearer understanding of the status of verbal *-le* in V_1 - V_2 -*le* forms such as (3) and (4) repeated below:

- (3) ta xi-ganjing-le suoyoude yifu
he wash-clean-LE all clothes
'He washed all the clothes clean.'
- (4) wo yijing kan-wan-le san-ben-shu le
I already look-finish-LE 3-CL-book LE
'I already finished reading 3 books.'

It was noted that because there is already a $V_{2\text{Asp}}$ suffix instantiating completive aspect on the main verb in addition to verbal *-le*, then verbal *-le* in such instances cannot itself be taken to be completive aspect. Verbal *-le* was also seen to occur with achievement verbs with no extension over time and no process to complete, which again disallows an analysis *-le* as completive aspect with such verbs. The question therefore naturally arose as to what kind of functional head the verbal *-le* suffix might correspond to in V_1 - V_2 -*le* forms and with achievement verbs.

If one now adopts Smith's two-tiered model of aspect, a simple answer to this question suggests itself, and verbal *-le* can be assumed to instantiate perfective viewpoint aspect here. It can be suggested that corresponding to Smith's viewpoint and situation aspect syntactically there are indeed two independent functional projections encoding aspect precisely as illustrated in the tree in (24), and that

whereas Chinese V_2 -completive suffixes are licensed by the lower $Asp_{2-situation}$ head, *le* in V_1 - V_2 -*le* forms will be licensed as a perfective suffix by the higher $Asp_{1-viewpoint}$ head. Such a general assumption not only coincides with traditional views that verbal *-le* is a perfective marker, as for example expressed in Li & Thompson (1981) and many other works, but there is also simple evidence from certain co-occurrence restrictions which indicates that *-le* is here functioning as an instantiation of perfective aspect. Specifically, the element *zhengzai* is rather clearly a marker of (progressive) imperfective aspect and therefore arguably occurs in the higher $Asp_{1-viewpoint}$ head. Significantly it is not possible for *zhengzai* to co-occur with a V_1 - V_2 -*le* sequence even though *zhengzai* may appear with V_1 - V_2 forms, as seen in (30), (31) and (32):

- (30) wo zhengzai ca boli ne
 I PROG wipe glass NE⁴
 'I am just wiping/cleaning the glass (at the moment).'
- (31) wo zhengzai ca-gan boli ne (Sybesma 1999)
 I PROG wipe-dry glass NE
 'I am just wiping dry the glass.'
- (32) *wo zhengzai ca-gan-le boli ne
 I PROG wipe-dry-LE glass NE

In this case, verbal *-le* and *zhengzai* are thus in complementary distribution. Assuming *zhengzai* to be in $Asp_{1-viewpoint}$, this co-occurrence restriction is naturally

⁴ The element *ne* is a sentence-final emphatic particle which frequently co-occurs with (*zheng-*)*zai*. I do not offer an account of its syntax here.

explained if *-le* instantiates perfective aspect and needs to be licensed by the same $Asp_{1-viewpoint}$ head; the clash of im/perfective values in *zhengzai* and *-le* will simply result in *-le* failing to be licensed here. Note that in the current approach it is indeed expected that *zhengzai* and a V_2 element such as *gan* 'dry' will be able to co-occur. *Zhengzai* is argued to be in Asp_1^0 instantiating imperfective viewpoint aspect, while the V_2 *gan* is taken to be a suffix encoding completive aspect and hence licensed by the lower situation aspect head Asp_2^0 . The two elements are hence *not* competing for the same aspectual head and so one might indeed expect that they could co-occur. The same is basically true of English where it is possible to combine imperfective aspect *be...-ing* with a meaning of completion/a completive situation:⁵

⁵ Stylistically the combination of a V_1 - V_2 sequence with *zhengzai* may perhaps be avoided for the reason that both the V_2 and *zhengzai* encode a separate focus--use of a V_2 element focuses the meaning of completion and use of an overt imperfective marker such as *zhengzai* focuses the progressive nature of the action. This may result in two independent foci in a single clause/sentence which may be felt to be somewhat confusing in terms of presentation of the information (and hence avoided). However, such strings are not ungrammatical. What may not occur is the combination of *zhengzai* with a V_1 - V_2 sequence where the V_2 is a phase-type V_2 such as *wan*:

- (i) *wo zhengzai kan-wan shu ne
 I PROG look-finish book NE
 intended: 'I am finishing reading the book.'

This I believe is because *kan-wan* is taken to be an instantaneous event with no internal or prior stages/extension over time available for modification by *zhengzai*. Being imperfective aspect describing the progression of an action, *zhengzai* importantly requires an event which does have internal stages potentially available. As V_2 's such as *wan* are themselves instantaneous achievement predicates and so may disallow any focusing on any internal stages of an activity depicted by the V_1 , instead encoding the single final stage of completion of the event. Note that the instantaneous/durative distinction is one which is standardly assumed to be part of situation aspect/a predicate's Aktionsart rather than relate to higher viewpoint-type aspect, and predicates are distinguished as being either instantaneous (e.g., achievements) or durative (e.g., accomplishments, activities). Consequently it is natural that *wan* and other V_2 's which might encode instantaneity should be licensed by $Asp_{2-situation}$ rather than $Asp_{1-viewpoint}$.

(33) John is finishing reading the book.

(34) He is looking the reference up/washing the dishes clean.

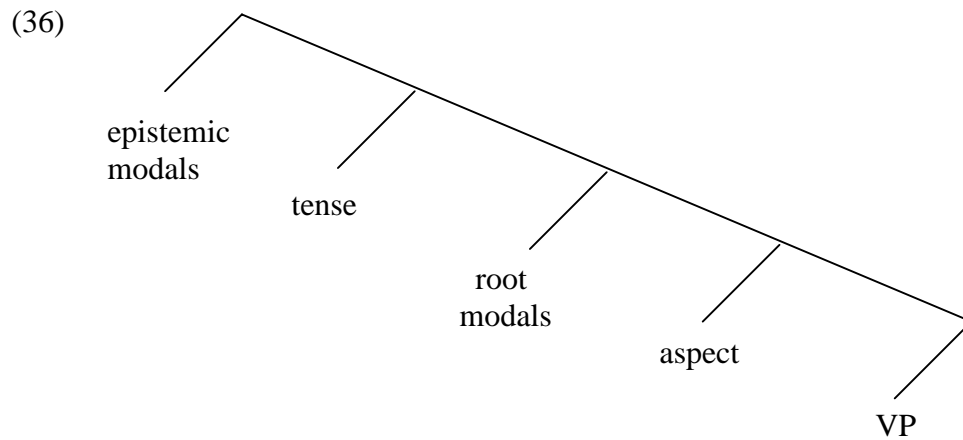
Another reason for believing that the V_1 and *-le* are respectively completive and perfective aspect aside from their interpretation concerns their relative ordering on the V_1 as suffixes. In section 6.1.2 it was noted that in terms of relative scope, viewpoint aspect is naturally higher than situation aspect--viewpoint aspect applies to a predicate which already has a certain aspectual value as +/-telic, +/-durative established by the situation aspect and functions to focus in on some particular aspectual property of the predicate (making its endpoints visible, focusing its internal stages, etc.). Such a hierarchical ordering should normally be reflected in syntactic structure and also here significantly in the ordering of morphemes on a lexical stem. For example, (as pointed out above in 6.1.2) it has been noted that when functional categories such as tense, mood and aspect are instantiated by free-standing lexical elements, these elements seem to consistently occur in a common cross-linguistic ordering and that interestingly this is precisely the inverse ordering found when the same functional types are represented by suffixes on a lexical stem (i.e., Baker's 1985 Mirror Principle). Specifically Cinque (1999) observes that in head-initial

Finally it should be noted that the unacceptability of examples such as (32) with *-le* and *zhengzai* cannot be ruled out by any similar considerations. In (32) *-le* is clearly not occurring in the V_2 position and it is therefore not possible to suggest that *-le* is unacceptable because it makes the predicate +instantaneous (thereby being in conflict with the +durative requirements of *zhengzai*). As pointed out, the +/-instantaneous property is encoded in the situation aspect and consequently by V_2 ; *-le* in V_1 - V_2 -*le* sequences is however not in the V_2 situation aspect position and therefore effects some other higher function (perfectivity, most obviously).

languages there is a broad ranking of free-standing verb-associated functional elements as in (35):

- (35) free-standing morphemes:
epistemic-modality – tense – root-modality – aspect – V

The hierarchical ranking is actually far more refined in Cinque (1999), but (35) can be taken to translate into a functional structure approximately as in (36):



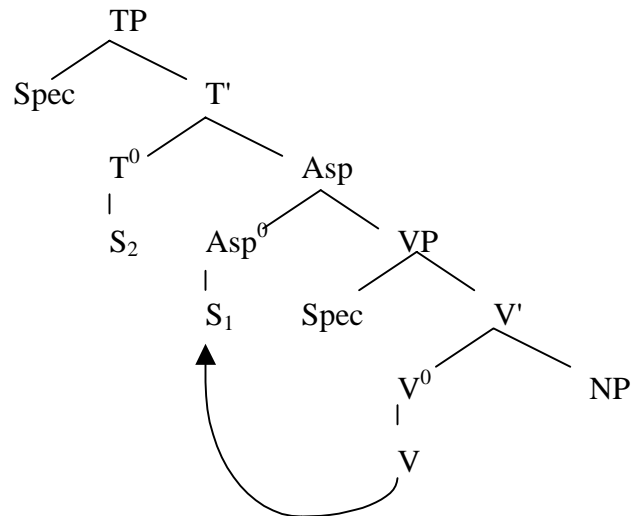
What is significant here is that if the elements representing such functional categories are not free morphemes but suffixes instead, they are consistently observed to occur bound to the verb in the inverse linear ordering, as in (37):

- (37) Suffixes:
V – aspect – root-modality – tense – epistemic-modality

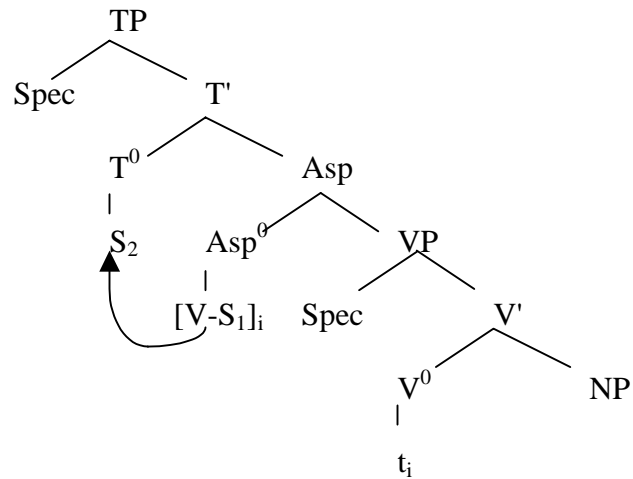
In Government and Binding theory (GB) this ordering of suffixes in a sequence which is the opposite of the linear ordering of corresponding free-standing functional equivalents has been referred to as the Mirror Principle (Baker 1985). It is suggested

that the (suffix) ordering arises due to the movement of a verb (or other lexical category) through the functional heads which dominate it, sequentially attaching the suffixes which are base-generated there. For example, supposing that a verb occurs with suffixes corresponding to aspect and tense and these suffixes are labeled S_1 and S_2 in Asp^0 and T^0 , the verb will first move to Asp^0 and attach S_1 and then subsequently raise to T^0 to attach S_2 . The final ordering will be $V-S_1-S_2$ which is the mirror image of the linear ordering of the relevant functional heads:

(38) Movement 1 \rightarrow V- S_1



(39) Movement 2 \rightarrow V-S₁-S₂



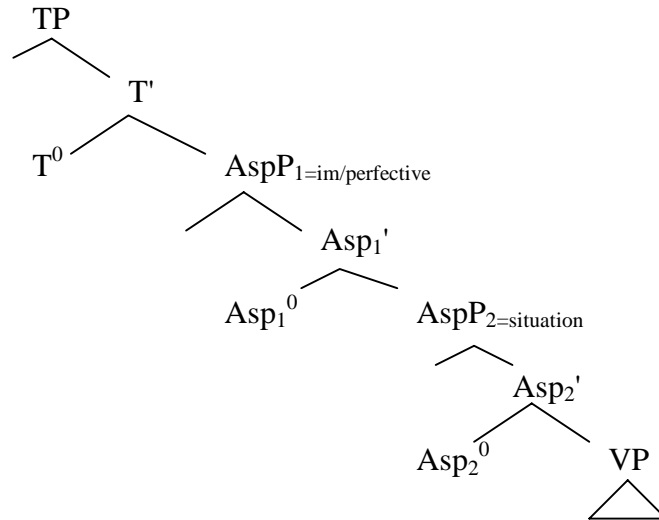
In the Minimalist Program, for a variety of reasons it is assumed that inflectional affixes are actually attached to their stems in the morphological component prior to syntactic insertion in a tree and that they are licensed (checked) via subsequently raising to the relevant functional heads during the course of the syntactic derivation. The Mirror Principle effects are accounted for by assuming that there is an inherent ordering to the checking of all suffixal elements and that inner suffixes adjacent to the lexical stem must be checked before outer suffixes. Given a base-generated sequence of a verb and two suffixes V-S₁-S₂, suffix S₁ will then have to check against a functional head before the S₂ suffix can be licensed. Consequently the functional head corresponding to S₁ will necessarily need to be lower in the tree than the functional head which licenses S₂. Concerning these two frameworks, in chapter 5 I have argued against the overt raising of V⁰ for the attachment of *-le*. Recall that in (40) overt raising of V⁰ to *-le* in Infl/Asp fails to explain why VP adjunct precedes V-*le* after the overt raising of the verb. Therefore it seems that the Minimalist

Program in which *-le* could be assumed to be a verbal suffix checked at LF would seem to be a naturally more desirable choice to take.

- (40) ta man-manr-de xi-ganjing-le yifu
he slowly wash-clean-LE clothes
'He slowly washed clean the clothes.'

Given the basic Mirror Principle patterning and considering Chinese V_1 - V_2 -*le* sequences, one would now expect that the V_2 element as an inner suffix S_1 should correspond to a licensing functional head which would be projected lower in the structure than the outer S_2 suffix *-le*, and this is indeed exactly what it entailed by the relative hierarchical ordering suggested to exist between viewpoint and situational aspect. Above it was noted that viewpoint aspect applies to a predicate which has already been determined for its situation aspect, and that viewpoint aspect is therefore hierarchically superior to situation aspect. In terms of syntactic structure, viewpoint aspect and situation aspect as functional projections in a head-initial language are therefore expected to project themselves as in (41) (=24):

(41)



In any sequence of two suffixes relating to viewpoint and situation aspect on a single verb, the inner aspectual suffix should therefore be licensed against the lower Asp_2^0 situation and the outer aspectual suffix should be licensed by the higher Asp_1^0 im/perfective. In V_1 - V_2 -*le* sequences this is exactly what is suggested to be the case--the inner ' V_2 ' suffix is argued to be an instantiation of completive (situation) aspect and so should be licensed against Asp_2^0 , and the outer *-le* suffix is suggested to be perfective aspect and so should be licensed against the higher Asp_1^0 head. The relative ordering of V_2 and *-le* as suffixes on the V_1 therefore seems to be further good confirmation that *-le* in V_1 - V_2 -*le* sequences is indeed occurring as perfective aspect.

A final relevant point supporting treatment of *-le* as perfective aspect which has often been made in the literature is that verb *-le* and the negative form *mei(-you)* 'Neg-have' would seem to be in simple complementary distribution as seen in (42):

- (42) wo mei-you xie(*-le) xin
 I NEG-have write(*-LE) letter
 'I didn't write the letter.'

Commonly it has been assumed that *mei-you* is the combination of negation and perfective aspect (see e.g. Li & Thompson 1981). In a Chomskian approach one may therefore assume that the auxiliary element *you* is in a perfective aspect head. The complementary distribution of *mei(-you)* and verbal *-le* consequently has a natural explanation. Assuming that the perfective aspect head maximally checks a single set of perfective aspect features, if *you* and *-le* co-occur and both carry perfective aspect features, one of the sets of features will remain unchecked and cause the derivation to crash. In negative perfective aspect sentences the perfective aspect head is occupied by *you* (or alternatively a phonologically null equivalent) and the features are checked in-situ ; it is therefore not possible to have a second instantiation of the same aspect type (i.e., *-le*).^{6 7}

There are therefore a variety of good reasons indicating both that *-le* is representing perfective aspect in the cases reviewed and that formally *-le* may be

⁶ The situation in Chinese here is similar to ungrammatical English sentences such as (i):

- (i) *John did not walked to school.

Parallel to the patterns with aspect in Chinese, it would seem that tense/T⁰ can not check more than a single set of Tense features.

⁷ Note that sentence-final *-le* can co-occur with *mei-you* 'have not,' as shown in (i):

- (i) wo houlai jiu mei-you zai huiqu Beijing le.
 I later then Neg-have again return Beijing LE
 'I never returned to Beijing after that.'

As with many others, I assume that sentence-final *-le* is a morpheme distinct from verbal *-le* and not an instantiation of perfect aspect. In many varieties of Chinese, such as Cantonese, the equivalent morphemes to verbal *-le* and sentence-final *-le* are indeed pronounced in quite different ways, indicating that they are different morphemes.

assumed to be licensed as a functional suffix by raising (at LF) to a higher Asp_{1-perfective} head position which dominates Asp_{2-completive}.

6.1.4 Grammaticalization and the Dual Status of Verbal *-le*

Section 6.1 began with the suggestion that verbal *-le* historically was a member of the V₂ set and grammaticalized as an instantiation of completive aspect in sentence-final position just like all the other V₂ elements. This analysis of *-le* as a simple V₂ was supported by its literal completive meaning and by the fact that it underwent re-positioning to the V₁ at essentially the same time that other V₂ elements re-positioned themselves adjacent to V₁. Now however it has been suggested that verbal *-le* should be taken to instantiate perfective aspect rather than completive situation aspect in a number of rather clear synchronic cases. The question now is obviously how to reconcile these two rather different views of *-le*.

I would like to suggest that the element *liao/le* did indeed originate as an instantiation of completive aspect as indeed proposed in 6.1, but that since this time *-le* has in fact undergone further grammaticalization and re-analysis as perfective aspect, and that both this diachronic development of *-le* and its current sometimes ambivalent status can be neatly and naturally captured in a development of the movement-and-re-analysis approach to grammaticalization introduced in chapter two.

6.1.4.1 Parallel grammaticalization of independent X^0 -heads and affixes

It may be remembered that the analysis of *ge* in chapter two made use of an idea (originally suggested in Simpson 1998) that grammaticalization may often result from a combination of movement and re-analysis within the functional structure dominating a lexical element. In the case of *ge* it was argued that *ge* originated in Cl^0 but then later became re-analyzed as an instantiation of D^0 following continued raising from Cl^0 to D^0 . The process which leads to grammaticalization and category change is then taken to be a sequence of movement to a particular functional head/Spec and then subsequent re-analysis relative to/in that position. Essentially there are three basic stages to the process:

(43) Stages of grammaticalization (for X^0 -head elements)⁸

Stage 1: an element α is base-generated and remains throughout the derivation in its position of origin, X^0

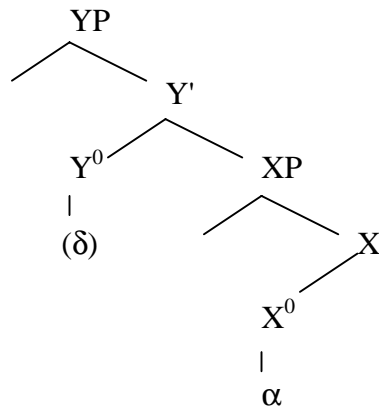
Stage 2: α is base-generated in X^0 but then raises up to a second functional head position Y^0 as α is associated with the interpretation of position Y^0

Stage 3: α becomes re-analyzed as being base-generated in Y^0 and no longer is interpreted as instantiating the properties of X^0 ; consequently a new element β is/can be base-generated in X^0

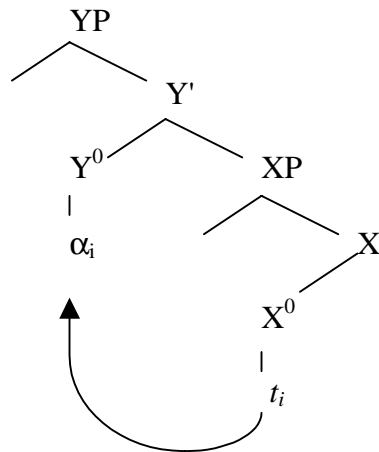
Trees (44)-(46) show the process of change from stage 1 to stage 3. In stage 1 the element α is simply base-generated in X^0 and remains there. In stage 2 α is base-generated in X^0 but also raises up to the functional head Y^0 and is licensed/checked

also against Y^0 . In stage 3 α is re-analyzed as being directly base-generated in Y^0 and has effectively grammaticalized as an element which only instantiates a head of type Y^0 . A direct consequence of α being re-analyzed as being base-generated in Y^0 is that X^0 may be filled with a new discrete element, here β .

(44) Stage 1

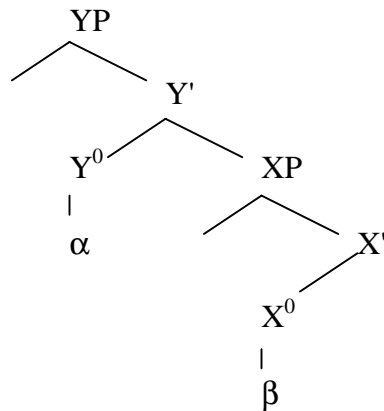


(45) Stage 2



⁸ XP elements may go through a similar route of grammaticalization, as Simpson (1998) suggests for French *pas* (see chapter two).

(46) Stage 3



Such an approach to grammaticalization was initially developed to account for category changes occurring with free-standing heads and phrases which also undergo overt positional changes. For example, French *pas* was noted to have undergone raising from canonical object position and then later grammaticalized as a simple marker of negation (Simpson 1998b), the English modal set is commonly taken to occur base-generated in a position higher than lexical verbs having earlier undergone raising from the V^0 position and grammaticalized in a higher functional head (Lightfoot 1979), and Chinese *ge* was similarly argued to have raised from Cl^0 to D^0 and then grammaticalized as a D^0 . If it is assumed that the same essential modes of interpretation should be equally open to both morphologically free and phonologically dependent elements, i.e., affixes, then it might be imagined that the basic underlying process of re-analysis outlined above should also in theory be available with affixal elements, although somewhat different in its surface execution due to the phonological free/bound distinction. Inflectional affixes are indeed interpreted as instantiating functional heads and hence correspond to a genuinely real

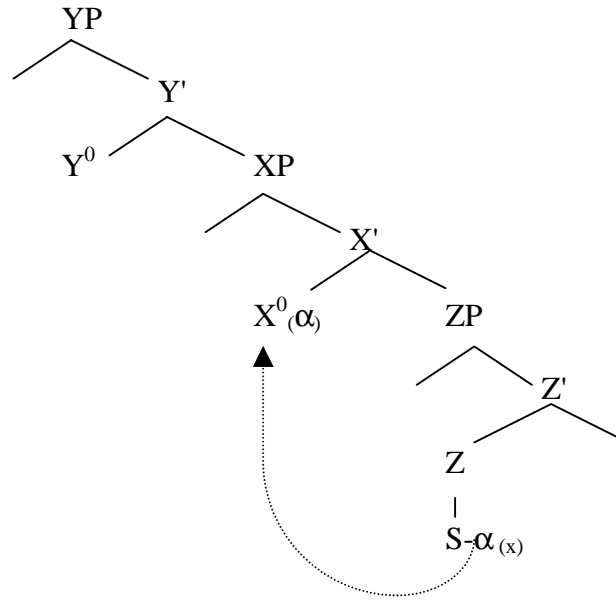
part of the syntactic structure projected in a tree. It is simply due to their phonologically dependent nature that affixes first require attachment to some host before they can be raised and matched against a relevant syntactic head. Given then that the free/bound distinction is therefore really just a phonological property and is not assumed to correspond to any kind of fundamental semantic difference (i.e., tense as a suffix will not be interpreted differently from tense instantiated by a free-standing morpheme), it would be natural to assume that the re-interpretation of an element as a different functional type should not be restricted to just free-standing morphemes but also occur with morphologically bound elements. Below I therefore now outline exactly how a process of grammaticalization with affixal elements might formally be understood to take place, and then suggest that just such a sequence of change and re-analysis has in fact occurred with Chinese verbal *-le*.

In a Minimalist approach to inflectional morphology, affixes are assumed to be licensed not immediately when inserted on their lexical host (e.g. in V^0) but only later on in the derivation when they are raised to the relevant licensing functional head. In this sense they become 'active' only when matched against a particular functional head during the course of movement through the functional structure dominating a lexical element. Grammaticalization and re-analysis of affixes will below essentially be suggested to occur when a particular affix first comes to be 'active' and licensed against a series of two distinct functional heads, and then is interpreted as being actively licensed only against the higher of these heads. The movement and re-analysis sequence found with free morphemes will then also occur

with affixes, but with the difference that because affixes are phonologically parasitic on a secondary host throughout the derivation, they may not be simply base-generated independently in a different higher position after an occurrence of re-analysis but will instead be simply re-interpreted as being 'active' and engaged in licensing relations with functional heads during a different progressively higher portion of raising through the functional structure.

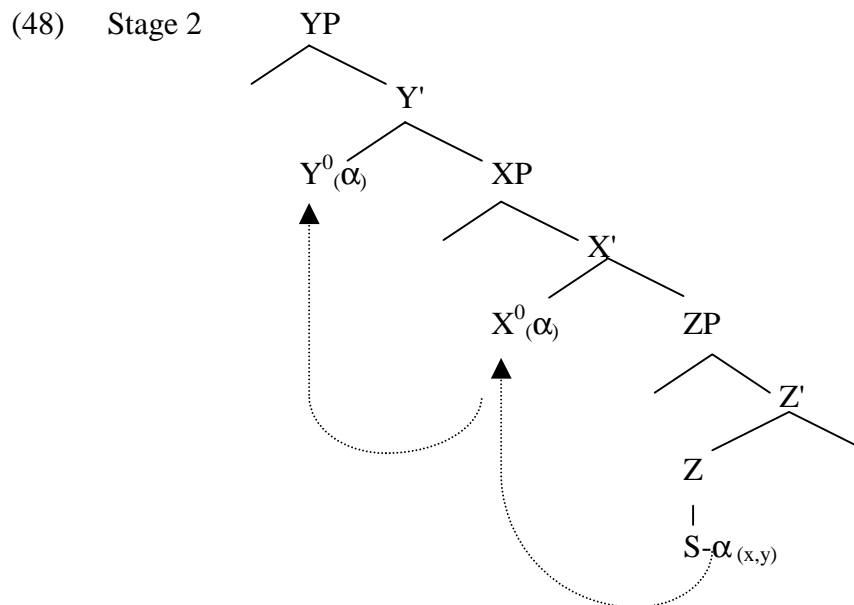
In more detail, the following sequence of steps can be suggested to take place in affixal re-analysis. Stage 1 represented in (47) is the simple case of a suffix α attached to a lexical host S raising with S to be licensed against a functional head X^0 . The functional head X^0 essentially represents the interpretation given to α (e.g. +past tense), and at an abstract level of analysis it is assumed that a set of features corresponding to the meaning of X^0 (i.e., +past) is lexically added to or built into the overt entity α . The morpheme α is therefore the physical host for a feature-set (i.e., meaning) which corresponds to a parallel specification in the functional head X^0 . S and α are base-generated together in the head-position Z^0 and then raise together up to X^0 . The lower bracketed (x) following α is a visual specification of the type of functional head that α needs to be matched/checked against. Similarly on the functional head X^0 there is a lower bracketed α indicating that X^0 corresponds to the meaning taken to be instantiated by α . In (47) $S-\alpha_{(x)}$ simply raises up to X^0 and the features carried by α are checked and licensed against those on X^0 :

(47) Stage 1



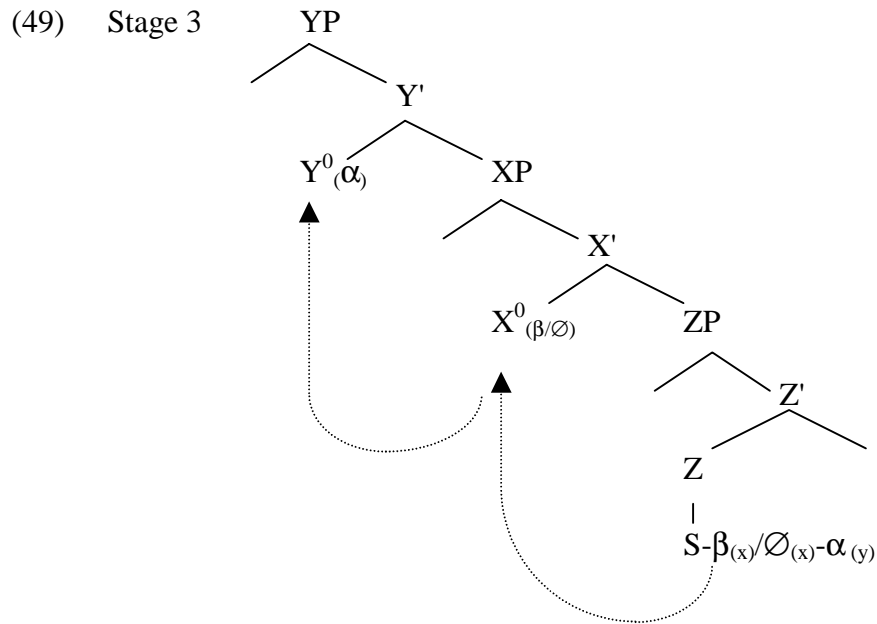
In stage 2 with free-standing morphemes such as *ge* and French *pas* it was argued that *ge/pas* both fulfil two functions. *Ge* in stage 2 instantiates both the Cl^0 head and the D^0 head, and *pas* is both an object DP and an emphatic marker in negative contexts. With affixes it can be assumed that this same kind of multi-functionality may also sometimes occur; in stage 2 of affixal change it can therefore be suggested that a single affix α is able to act as the physical lexical host for two different feature sets. This will essentially result from α being understood to be 'active' and engaged in a checking relation not only against X^0 but also a higher functional head Y^0 as it raises up to Y^0 with the lexical stem S . One may suppose that prior to this change the relevant features on Y^0 would have been checked either by (features on) a phonologically null affix attached to $S-\alpha$ or via the base-generation of a phonologically null head with a feature-set directly in Y^0 (i.e., base-generation of a free-standing head in the Y^0 position). From an initial situation (stage 1) in which

features on Y^0 are checked by an element with zero phonological realization and α is interpreted as checking only features on X^0 , in stage 2 α comes to be interpreted as being in a licensing relation with both X^0 and Y^0 . This dual function stage 2 is represented in (48). As seen, the suffix α is followed by a lower bracket enclosing an ordered sequence of x and y indicating the functional heads which it is understood as checking against; X^0 and Y^0 also both have lower-bracketed specifications for α encoding the fact that these heads are interpreted as having meanings licensed by the presence of the element α on S:



In stage 3 with free-standing morphemes, *ge* and *pas* were argued to have undergone re-analysis as instantiating only the higher position raised to (D^0 and SpecFocP respectively). In affixal terms, stage 3 will correspond to a situation in which the suffix α in the model here is re-analyzed as only representing the interpretation of the higher head Y^0 . Formally, features encoding the meaning of only the functional

head Y^0 will be lexically added to α , and during the course of raising the suffix α will only be in an active licensing relation with the higher head Y^0 and not X^0 . Re-analysis of free-standing morphemes in a higher position in stage 3 was seen to allow for the original base-generated site to be occupied by another different element (a classifier in the case of *ge*, and an object DP with *pas*). When a suffix such as α undergoes stage 3 re-analysis as only relating to a higher head, this should allow for a new affixal element to be base-generated in suffixal slot previously occupied by α , or alternatively a phonologically zero affixal element is understood as carrying the relevant features relating to X^0 . The above is all represented in the stage 3 tree (49). Note that the suffix α now only has a lower bracket specification for Y^0 , and a new suffix β (or a phonologically zero suffix \emptyset) carries the features which will be licensed against X^0 :



Note furthermore that the above sequence of change and re-analysis may be taken to apply equally to either overt movement of an element from Z^0 to X^0 to Y^0 or to covert LF raising. In Chomsky (1995) it is suggested that raising at LF only involves purely formal feature-sets, and other semantic-type features are stranded. This perhaps might lead one to assume that LF movement would simply raise an unstructured cluster of features rather than a structured object such as the hypothetical form $[S-\beta_{(x)}/\emptyset_{(x)}-\alpha_{(y)}]$. However, there is good reason to believe that what raises at LF cannot in fact be fully unstructured. If ordering and hierarchical structure were absent from the LF-raised feature-sets which correspond to a lexical stem and its affixes, one would not expect to find Mirror Principle type affixal ordering phenomena in languages where movement occurs only at LF. Specifically, supposing a verb were to have tense and aspect suffixes but only raised to Asp^0 and T^0 at LF, if the LF feature-set were to be fully unordered then one might expect that the tense and aspect suffixes would not need to occur in any particular order on the verbal stem and that they would simply be checked when the feature-set raised through the appropriate heads. However, Mirror Principle suffixal ordering phenomena occur in the same way both in languages with overt movement and languages where the raising occurs only at LF. In the case of a verb with tense and aspect suffixes, it is found that aspect suffixes come closer to the verbal stem than tense both when raising of the verb is overt and when it is covert (Baker's 1985 Mirror Principle). What this indicates clearly is that LF raising actually involves an element with as much and effectively the same internal structure as equivalent forms

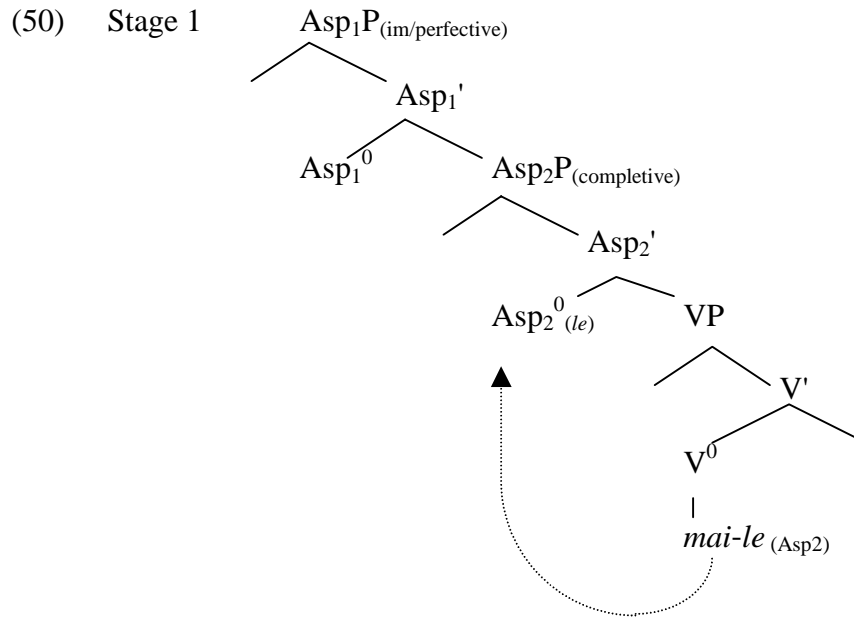
which are raised overtly. In the case of the stage 3 sequence in (49) then, the hypothetical form $[S-\beta_{(x)}/\emptyset_{(x)}-\alpha_{(y)}]$ will essentially raise with the same internal structuring whether this raising is overt or at LF.

Finally a word should be said about the hierarchical direction of affixal re-analysis. If such a process basically parallels the grammaticalization of free-standing elements, then one would expect that re-analysis should follow the path of movement and only go in an upward direction; specifically one would expect that an affix originally encoding the meaning of a functional head X^0 would possibly allow for re-analysis as relating to a higher head Y^0 , but not allow for downward change and re-analysis as relating to a functional head W^0 hierarchically lower than X^0 . Careful research on affixal change is obviously first necessary to establish that there is indeed an 'upward' direction to re-analysis with phonologically bound elements, but imagining this to be a likely conclusion one might suggest the following to account for the patterning. It may be suggested that an affix essentially becomes 'active' when it and its host raise up to the head against which the affix is licensed and that before such a point the affix is effectively completely ignored. Having once become 'active' though, it may be possible for the affix to be interpreted as also engaging in a licensing relation with some subsequently higher functional head, especially if this head is otherwise interpreted as being licensed by a phonologically zero affix/form. Re-analysis would then be possible only in an upward direction after an affix had become active in licensing terms, and never in a downward direction - prior to becoming active the affix will simply not be visible for any possibility of re-

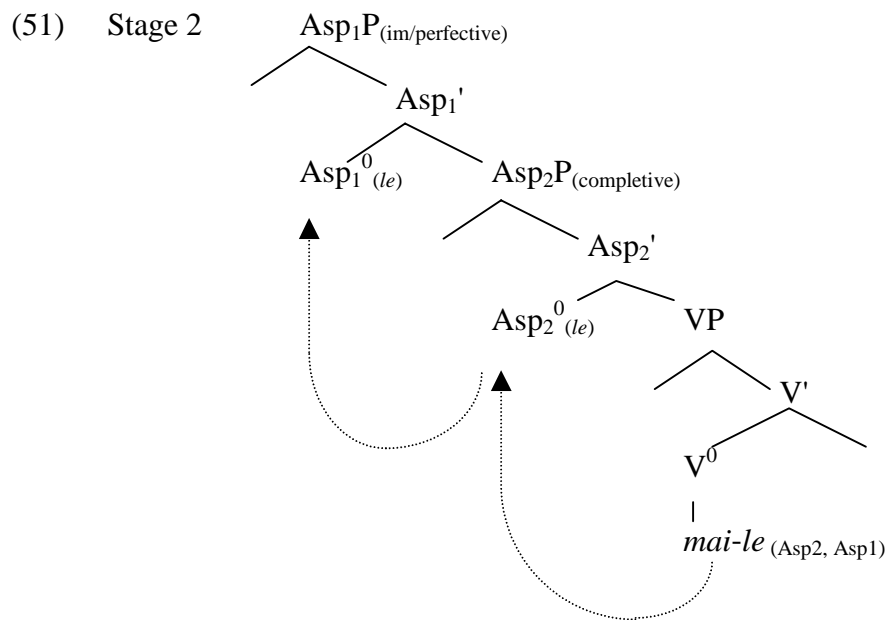
interpretation. In such a way then affixal re-analysis would also be dependent on the upward direction of movement in a tree.

Turning back to Chinese, I would like to suggest that the hypothetical three-stage process of affixal re-analysis proposed here now allows for a simple and natural explanation of the diachronic patterning and synchronic status of verbal *-le*. In sections 6.1.1 above it was argued that there are good reasons to believe that verbal *-le* originated as an instantiation of completive aspect; *liao/le* both originated as a verb meaning 'to finish' and hence had the typical lexical meaning of other completive phase V_2 's, and *liao/le* underwent re-positioning adjacent to the verb at the same basic time that other V_2 's are taken to have re-positioned themselves. In section 6.1.3 however, other evidence has indicated that synchronically verbal *-le* appears in many situations to be rather clearly instantiating perfective viewpoint aspect--notably when it occurs in V_1-V_2-le forms and also with achievement predicates. The view of affixal grammaticalization and re-analysis proposed above now allows one to reconcile these apparently conflicting views. I would like to suggest that *-le* as a suffix has over time gone through a process of upwards re-analysis, beginning as an instantiation of completive aspect/ Asp_2^0 and then becoming re-interpreted as perfective aspect licensed against the structurally higher Asp_1^0 . This hypothetical process of grammaticalization is illustrated in (50-52) below.

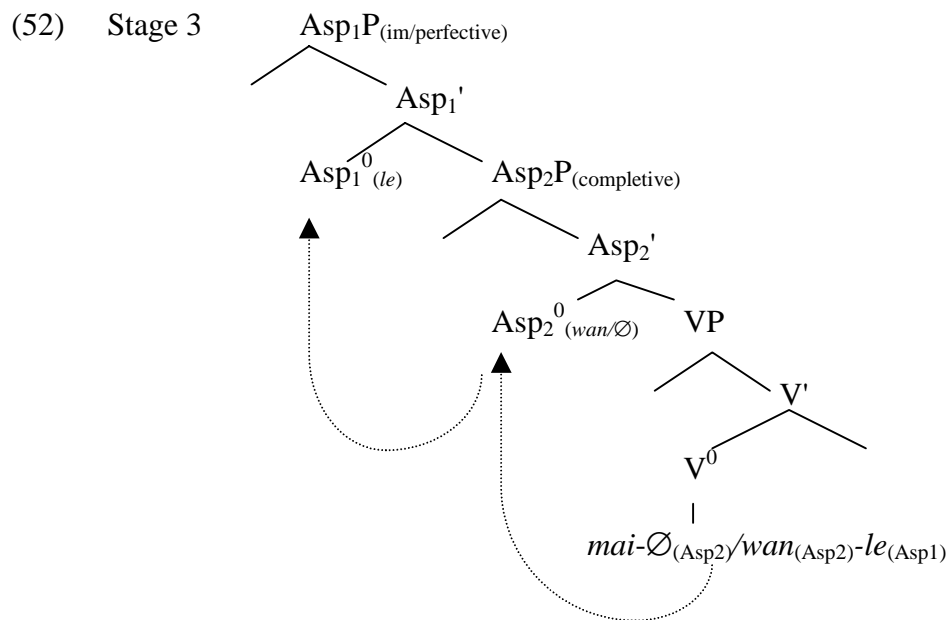
In stage 1 of the process *-le* is taken to be a simple instantiation of completive aspect licensed against Asp_2^0 after raising at LF as in (50) (using the verb *mai* 'to sell' as a verbal stem):



In stage 2, *-le* is re-interpreted as instantiating not only completive aspect but also perfective aspect, being active in a checking relation not only with Asp_2^0 but also the higher Asp_1^0 , as in (51):



In stage 3 of the process, *-le* comes to be re-analyzed fully as potentially instantiating only the higher aspect type $Asp_{1\text{perfective}}$. This then allows for a new suffixal instantiation of the lower $Asp_{2\text{completive}}$ to be inserted in the completive aspect position immediately right-adjacent to the verbal stem, as shown in (52) (using the completive suffix *wan* 'be finished'; alternatively completive aspect features might be carried by a suffix with zero phonological realization $\emptyset_{(Asp2)}$):



Such a process of upward affixal grammaticalization within the functional structure is able to provide a rather simple account of both the origins of *le/liao* and its current status in V_1 - V_2 -*le* forms. Having begun as completive aspect, *-le* is taken to have grammaticalized further up the functional structure to be re-interpreted as perfective aspect, allowing for its current co-occurrence with clear completive aspect suffixes such as *wan* 'finish' etc.

6.1.4.2 Current distinction between completive and perfective -le: evidence for diachronic development

The suggested diachronic development of *-le* modeled in (50-52) might also seem to be supported by certain interesting patterns pointed out in Sybesma (1999) and Lü (1980). In the latter work it is suggested that there are 28 verbs in Modern Chinese which verbal *-le* combines with as a V_2 resultative type element similar to other phases.⁹ Examples both in Lü (1980) and Sybesma (1999) with verbs such as *mai* 'sell,' *guan* 'close,' *wang* 'forget,' and *chi* 'eat' show that there are distinct contrasts in the patterning of these verbs and other verbs not in the group of 28. Basically the verbs from this 28-verb group can combine with *-le* without indicating perfectiveness, although a completive reading of the action verb is intended. For example, it is possible to combine many of the group of 28 with *-le* and a higher modality verb such as *xiang* 'think of (doing X),' *keyi* 'be allowed to' or *yao* 'want to,' whereas other verbs do not allow this. The examples below are mostly taken from Lü and Sybesma:

- (53) ni bu ai ting, keyi guan-le shouyinji.
you NEG like listen, can close-LE radio
'If you don't want to listen, you can turn the radio off.'

⁹ Those 28 verbs listed in Lü (1980) are: *wang* 'forget,' *diu* 'throw/get rid of,' *guan* 'close, shut,' *he* 'drink,' *chi* 'eat,' *yan* 'swallow,' *tun* 'swallow,' *po* 'splash,' *sa* 'spill,' *reng* 'throw/get rid of,' *fang* 'release,' *tu* 'scribble,' *mo* 'wipe,' *ca* 'wipe,' *peng* 'bump,' *za* 'break,' *shuai* 'throw,' *ke* 'crack,' *zhuang* 'hit,' *cai* 'step on,' *shang* 'injure,' *sha* 'kill,' *zai* 'kill,' *qie* 'cut,' *chong* 'flush,' *mai* 'sell,' *huan* 'return,' *hui* 'destroy.'

- (54) wo xiang mingtian mai-le nei-liang-che
 I want tomorrow sell-LE that-CL-car
 'I'm thinking of selling off that car tomorrow.'

In (53) and (54) the verbs *guan* 'close' and *mai* 'sell' are members of Lü's group of 28. In (55) and (56) it is seen that verbs such as *xie* 'write' and *kan* 'look at' not in this group do not allow combination with similar modality verbs and *-le*:

- (55) *wo xiang/yao xie-le yi-feng-xin
 I want/want write-LE one-CL-letter
 intended: 'I want to write a letter.'

- (56) *ni yao zhidao, keyi kan-le zhei-ben-shu
 you want know can look-LE this-CL-book
 intended: 'If you want to know (this), you can read this book.'

Sybesma also notes that verbal *-le* may combine with verbs such as *wang* 'forget,' a member of the group of 28, and the habitual adverb *zongshi* resulting in a completion type reading, but that this kind of combination is again not possible with verbs from outside the group of 28, as seen in (57-58):

- (57) wo zongshi wang-le ni-de-mingzi
 I always forget-LE you-DE-name
 'I always forget your name.'

- (58) *wo zongshi kan-le ta xie de shu
 I always look-LE he write DE book
 intended: 'I always read the books he writes.'

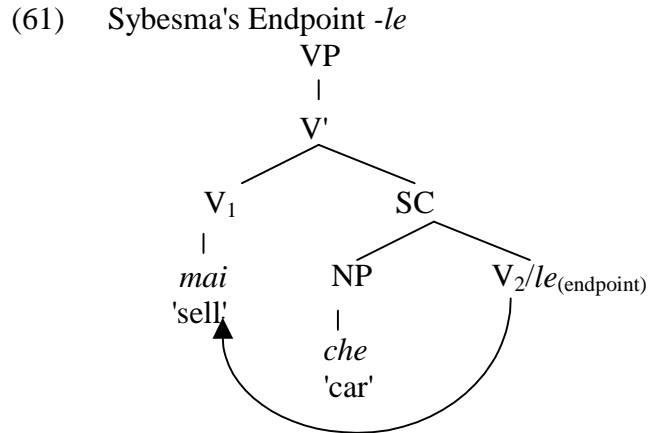
Note that *-le* does not have a perfective meaning in (57), and that (57) describes a situation which is not closed with visible endpoints.

Finally, Sybesma shows that members of the group of 28 may actually co-occur with the negative perfective element *mei-you* 'Neg-have,' which is not at all possible with verbs from outside the group of 28:

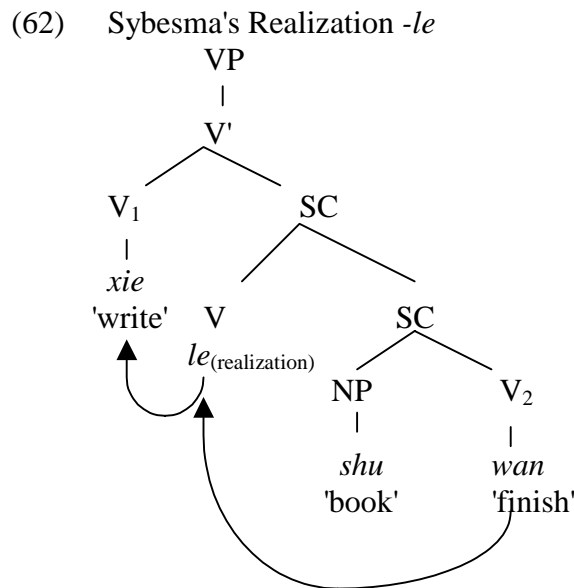
(59) wo hai mei-you mai-le nei-liang-che
I still NEG-AUX sell-LE that-CL-car
'I still didn't sell off that car.'

(60) *wo hai mei-you xie-le nei-feng-xin
I still NEG-AUX write-LE that-CL-letter
intended: 'I still didn't write that letter.'

From all this patterning Sybesma concludes that there must indeed be two distinct verbal *-le*'s, one which occurs as a phase V_2 element with a restricted group of verbs (the group of 28), and a second element which is fully general in its occurrence. The first of these Sybesma calls 'Endpoint' *-le* and the second 'Realization' *-le*. Both are treated as small clause predicates base-generated as complements to the main verb V_1 . (61) corresponds to a surface string *mai-le che* 'sell-LE car' with *-le* occurring as a phase V_2 signaling simple endpoint with one the group of 28 verbs:



(62) is the structure suggested by Sybesma to underlie the use of Realization *-le* and a surface sequence such as *xie-wan-le shu* 'write-finish-LE book.' Note that here the V_2 *wan* has to raise to left-adjoin to *-le* and then the sequence *wan-le* has to raise and right-adjoin to *xie* in order for the word order to match the surface string:



For a variety of reasons given earlier in chapter 5 I decided to explore an alternative solution to the small clause analysis of RVCs and *-le*. With regard to 'Realization' *-le* two more brief criticisms may now be added. First of all the small clause analysis

really appears to build functional categories into positions under the lexical VP and selected by the main predicate which is intuitively rather strange. Functional categories (such as for example 'realization') are normally assumed to be functions which take lexical objects as their arguments rather than the reverse (i.e., lexical elements selecting functions). Secondly the structure in (62) in which realization *-le* predicates of a (second) small clause as its subject leads one to expect that it should be possible for *-le* to stand alone with this small clause in an isolated predication relation. However, whereas this may sometimes be possible, and (64) corresponding to the hypothetical lower small clause part of (63) is indeed a well-formed string, in other cases this is not at all acceptable, as (66) relating to (65) shows:

(63) ta xi-ganjing-le yifu
he wash-clean-LE clothes
'He washed the clothes clean.'

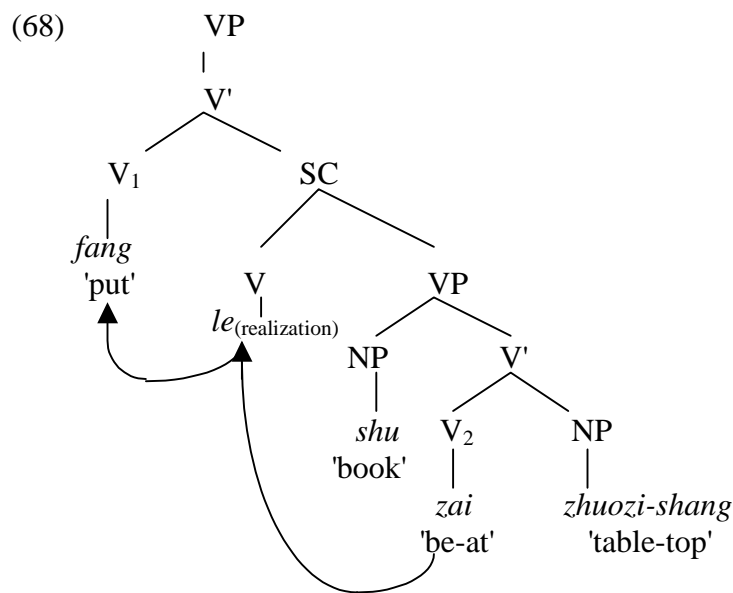
(64) yifu xianzai ganjing-le
clothes now clean-LE
'The clothes are now clean.'

(65) ta kan-wan-le shu
he read-finish-LE book
'He finished reading the book.'

(66) *shu xianzai wan-le
book now finish-LE
'The book is now finished.'

It is not clear if the *-le* in (64) and (66) is a verbal *-le* or a sentence-final *-le*, although the contrast in small clause possibility clearly exists. A clearer example against verbal *-le* heading a small clause presents itself in (67). For (67), Sybesma has to assume a structure such as (68) to account for *fang-zai-le* 'put-at-LE' string, which in turn wrongly predicts that the small clause headed by *-le* can be separated from V_1 . As shown in (69), V_2 *zai* can clearly be separated from V_1 in (69a). However, (69b) indicates that when *-le* is present, *zai-le* has to co-occur with V_1 as in (67), otherwise the sentence is ungrammatical.

- (67) ta ba shu fang-zai-le zhuozi-shang¹⁰
 he BA book put-be-LE table-top
 'He put the book on the table.'



¹⁰ Note that sentences such as (67) are not acceptable with *-le* in all dialects of Mandarin, but can nevertheless frequently be found in mainland Chinese writing. No dialect (to my knowledge) however allows for sentences such as (69b).

- (69) a. shu zai zhuozi-shang
 book be-at table-top
 'The book is on the table.'
- b. *shu zai-le zhuozi-shang
 book be-at-LE table-top

This would therefore seem to confirm that when *-le* occurs with a V_1 and a V_2 as in (63), (66) and (67), it is *not* hierarchically lower than the V_1 , predicating of a small clause as its subject (as per (62)), but rather a higher function applying to the whole [V_1 - V_2 NP] as suggested in the perfective aspect analysis put forward here.

The observations made concerning Lü's group of 28 verbs can now be interpreted in a potentially revealing way in the present attempted modeling of the grammaticalization of verbal *-le*. Sybesma's interesting insight (following Lü) is that *-le* with a restricted set of verbs might seem to function in Modern Mandarin like an instantiation of the V_2 group. If this is true, and *-le* can indeed simply instantiate completive aspect with certain verbs, it would seem to substantiate the assumption made on other grounds that verbal *-le* indeed originated as a completive aspect suffix. Typically, as mentioned in chapter 5, each member of the V_2 group would seem to be lexically selective and combine with a limited number of V_1 elements. If there is an element *-le* which only combines with a particular set of 28 verbs resulting in a completive meaning, this would seem to identify *-le* in these cases as really being a canonical (completive aspect) V_2 element. Such a conclusion concerning the synchronic patterning of *-le* with a subset of verbs now arguably leads to a strengthening of the grammaticalization account. It can be suggested that

after re-positioning adjacent to the main verb V_1 , *-le* originally was a completive aspect suffix in stage 1 of the re-analysis process represented in (50). At this point in time *-le* would have only occurred with a restricted set of V_1 elements just as other V_2 completives did. Later on *-le* can be argued to have entered into stage 2 of the grammaticalization process shown in (51) potentially instantiating both completive aspect and perfective aspect. Here I think it is natural to assume that the possibility of a stage 2 interpretation of *-le* with certain verbs (i.e., as instantiating completive aspect as well as perfective aspect) would not have necessarily immediately excluded a stage 1 interpretation of *-le* as instantiating only completive aspect. In other words it may be assumed that *-le* was only optionally interpreted as instantiating both completive and perfective aspect and that both stage 1 and stage 2 type interpretations could actually be available during a single time period (formally, any perfective aspect features present could be added either to *-le*, or to some other phonologically null affix so that *-le* would be interpreted as only instantiating completive aspect). Such an assumption essentially reflects the intuition that certain types of diachronic change are not effected catastrophically at a single point in time but instead occur over extended periods of time.

The arrival at stage 2 with *-le* optionally being interpreted as instantiating perfective aspect/carrying perfective aspect features is however highly significant. It can be argued that once perfective aspect features could be added to *-le* with a certain set of verbs, then this option might have also become quite generally available and *-le* could have come to be interpreted as encoding perfectivity with a full and wide

range of verbs. In the V_2 completive aspect (suffix) position, *-le* would have contrasted with a large number of other V_2 elements and so it is not unreasonable to accept that it would be lexically restricted, each V_2 selecting a certain set of situations. However, when in stage 2 optionally instantiating perfective aspect, *-le* would not have stood in contrast with other (overt) instantiations of perfective and so it is consequently very natural that it should have become a fully general marker of perfectivity. Furthermore, although completive aspect Asp_2^0 selects directly for a predicate VP and hence a complement with clear descriptive content, perfective aspect Asp_1^0 selects for an Asp_2P which is essentially just a telic situation and hence far more abstract. It is therefore not surprising that lexical restrictions should occur in the selection relation between the instantiation of $Asp_{2completive}$ and VP but not between $Asp_{1perfective}$ and Asp_2P and that *-le* as a perfective marker should be quite general in its applicability. This point at which *-le* may be taken to instantiate just perfective aspect with verbs which do not allow *-le* as a simple completive is stage 3 of the process - *-le* is available as a pure instantiation of the higher head $Asp_{1perfective}$. The hypothetical sequence of change is partially summarized in (70):

(70)

- a. *liao* occurs as completive aspect sentence-finally
- b. *liao* re-positions adjacent to the verb as a suffix and reduces to *-le* still as completive aspect = stage 1; *-le* is (assumed to be) lexically restricted as other $V_{2\text{completive}}$ elements are
- c. *-le* can optionally be interpreted as instantiating perfective aspect as well as completive aspect; this possibility corresponds to stage 2. A stage 1 interpretation of *-le* with a restricted set of verbs as just instantiating completive aspect is also still possible
- d. the possibility that *-le* can instantiate perfective aspect initiated with the restricted set of verbs becomes fully general, arguably due to the lack of contrast of perfective *-le* with other parallel perfective morphemes. This represents stage 3 of the process.

It is important to stress here that although stage 1-3 of the re-analysis process are taken to be sequentially ordered, the occurrence of a later stage of the process does not necessarily exclude an earlier stage still being available as an interpretation. Thus in order for stage 3 to be reached it is assumed that there was first the possibility of a stage 1 interpretation and later a stage 2 interpretation. However, the possibility of a stage 3 interpretation does not mean that a stage 2 interpretation should necessarily no longer be available. The stage 1-3 interpretations for *-le* are listed in (71) below:

- (71) Stage 1 interpretation: *-le* instantiates only completive aspect
Stage 2 interpretation: *-le* instantiates completive and perfective
aspects
Stage 3 interpretation: *-le* instantiates only perfective aspect

What these stages represent are possibilities--the possibility of associating *-le* with a certain type of interpretation. In terms of formal features, stage 2 represents the possibility of adding perfective aspect features to *-le* in addition to completive aspect features, and *-le* being interpreted as being potentially active in a checking relation with both the lower $Asp_{2completive}$ and the higher $Asp_{1perfective}$. However, in a situation of ongoing re-analysis over time it can be imagined that once a possibility (a new interpretation) becomes available, it does not have to be used in every instance; concretely in terms of the change with *-le*, the arrival of the possibility of adding perfective features to *-le* (i.e., interpreting *-le* as perfective) does not mean that every time that *-le* might be used perfective features would have to be added to it in addition to completive aspect features, and not every occurrence of *-le* would have to be interpreted as perfective in addition to being completive. Similarly the possibility of a stage 3 interpretation of *-le* as instantiating just perfective aspect would not necessarily mean that a stage 2 interpretation should no longer be available with verbs from the group which tolerate *-le* as instantiating completive aspect.

What this is intended to suggest in general is that re-analysis of an element of type A as possibly instantiating a second function B does not have to result in the loss of the original A-type interpretation, even though this may in fact even frequently occur over time. In the case of Mandarin *-le* I would like to suggest that

the patterning highlighted by Sybesma (1999) showing critical differences between Lü's group of 28 verbs and other predicates when combined with *-le* indicates that *le* synchronically may still indeed be interpreted with stage 1 status when occurring with members of the group of 28 verbs. When appearing with all other verbs *-le* occurs interpreted with its stage 3 meaning of perfectivity alone.

Finally there may be evidence that *-le* can also be interpreted as instantiating both completive and perfective aspect with verbs in the group of 28, i.e., stage 2. First of all it is clear that *-le* can occur with verbs in this group instantiating just perfective aspect, i.e., stage 3. In (72) below there is an overt completive V_2 element occurring in addition to *-le* and so *-le* must here be instantiating perfective rather than completive aspect:

- (72) ta chi-wan-le san-tiao-yu
he eat-finish-LE 3-CL-fish
'He ate three fish.'

When *-le* occurs without a second distinct completive V_2 as in (73) the interpretation is effectively the same as in (72) and all three fish are understood to have been consumed:

- (73) ta chi-le san-tiao-yu
he eat-LE 3-CL-fish
'He ate three fish.'

If completion of the eating of all three fish results from the use of completive aspect, it may consequently be suggested that *-le* in (73) also instantiates completive aspect and hence has a stage 2 interpretation.

Summarizing then, it has been argued that *-le* has developed over time from an original status as a marker of completive aspect similar to other V₂ elements to also instantiate perfective viewpoint aspect. Synchronically it has been suggested that *-le* actually has an ambivalent current status and that there is evidence indicating that it may still occur instantiating either stage 1, 2, or 3 of the hypothesized route of diachronic change, this being represented in the table below:

Current potential interpretations of *-le*

- | | |
|-------------------------|--|
| Stage 1 interpretation: | <i>-le</i> occurs with a restricted group of 28 verbs instantiating just completive aspect |
| Stage 2 interpretation: | <i>-le</i> occurs with a restricted group of 28 verbs instantiating both completive aspect and perfective aspect |
| Stage 3 interpretation: | <i>-le</i> occurs as a general instantiation of perfective aspect |

Quite generally in this section I have argued for the significant conclusion that affixes are subject to the same type of (further) grammaticalization and re-analysis that occurs with free-standing morphemes. It was argued that as with the re-analysis of free-standing morphemes, this process of change takes place in a way which importantly parallels the direction of syntactic movement upward in a tree, *-le* as a completive aspect suffix coming to be re-interpreted as a perfective aspect suffix licensed by an Asp₁P which is higher in the functional structure than the completive

aspect head Asp_2^0 . If this conclusion is correct and affixal re-analysis does mirror the re-analysis of free morphemes in relating an element to successively higher functional projections, it is clearly important for two reasons. First of all, it would seem to provide strong evidence in support of the Minimalist assumption that affixes are licensed via *movement* to higher functional heads--specifically, if affixal re-analysis shows parallels to the grammaticalization of free morphemes and the latter occurs as a result of movement to a higher functional position and re-analysis in this position, parallel affixal re-analysis can then also be assumed to result from movement and re-analysis relative to a licensing functional head. Secondly, the particular case of *-le* would further seem to substantiate the Minimalist hypothesis that movement for the licensing of functional morphemes/heads (i.e., feature-checking) may frequently take place covertly at LF. As *-le* does not appear to occur overtly raised out of V^0 , it must be assumed that the movement to Asp_2^0 and Asp_1^0 must occur at some later derivational point hence LF. Considerations of language change and affixal re-analysis such as outlined here can thus be suggested to provide important evidence and arguments in favor of critical Minimalist assumptions concerning the licensing of functional interpretations in syntax.

6.2 Verbal *-Le* and Tense

In this last section of the chapter I would like to explore the rather contentious possibility that verbal *-le* is currently coming to instantiate *past tense* in Modern

Chinese in addition to its other specifications.¹¹ Such a speculation has been specifically argued against by linguists such as Li & Thompson (1981) and there would furthermore seem to be a quite wider tacit assumption that *-le* cannot be tense. However, here I will attempt to show that not only are there good reasons to support an analysis of *-le* as plausibly instantiating tense, there are also quite reasonable counter-arguments to Li & Thompson's objections to such an analysis. The structure of the section is as follows. First I will outline the evidence and patterning which suggests that *-le* may be coming to instantiate past tense. Then I will discuss the relation of aspect to tense, in particular focusing on the notion of perfectivity and argue that the categories tense and perfective must be taken to correspond to discrete syntactic heads, which may however be phonetically instantiated by a single overt morpheme. Subsequently showing how *-le* can rather naturally be analyzed as representing also tense in the model of grammaticalization proposed above, I will then go on to re-examine Li & Thompson's reasons for rejecting an analysis of *-le* as tense and point out how they are actually not as strong as might be initially assumed. Ultimately it will be concluded that even though certain aspects of the patterning of *-le* may remain in need of further explanation, a close re-consideration of all the

¹¹ Chiu (1993) assumes that TP is a universal projection in all languages and in Chinese *-le* is a past tense marker that heads this universally projected TP in Chinese. See also Tsang (1978), Rohsenow (1978), Z. Shi (1990), Ross (1995) and Hsieh (1998) for other attempted suggestions that *-le* might be a *relative* past tense marker (vs. *absolute* tense marker: see the discussions in Comrie 1985). The particular focus and interests of this chapter/section are (a) to attempt to show how the development of *-le* as a past tense marker is a natural consequence of a certain formal approach to grammaticalization, (b) to show how the development of *-le* as a past tense marker can be understood better once a more explicit analysis of Aspect is assumed (as argued for above), and (c) to provide clear and principled attempted explanations of the wide variety of counter-arguments frequently given against any analysis of *-le* as a past tense marker.

evidence and assumptions concerning the interaction of tense and aspect does indeed support the contention that verbal *-le* is now coming to functionally represent tense.

The evidence in favor of an analysis taking *-le* to instantiate past tense are really very simple. First of all it is well-observed that the use of verbal *-le* very frequently co-incides with an interpretation of the predicate as having taken place in the past. This simple fact is noted in almost all descriptions of the patterning of *-le* and in analyses of *le*'s distribution in experimental studies. For example, Smith (1997) refers to Chang's (1986) investigation of *-le*'s occurrences in newspaper articles as noting that *-le* was frequently found to be used as a past realis marker. In another experimental study, Spanos (1979) reports that subjects used *-le* when the context made it 'necessary to explicitly state the realization of an action.' (p.81). This characterization of a 'realized action' locates an event as having occurred and would seem to be a description of past tense simply using other terms. As noted earlier, Sybesma (1999) also refers to (one type of) *-le* as 'Realization *-le*' and this again is arguably just a camouflaged description of past tense. It is therefore quite uncontentious and a well-established observation that *-le* does indeed consistently occur in past time contexts, this clearly suggesting and supporting an analysis that it is used and interpreted as a past tense marker.

A second simple observation indicating that *-le* is coming to instantiate past tense is the fact that in non-subordinate contexts *only* a past time interpretation is available when *-le* is used (with one potential exception to which I later return). For

example, (74) below can only be interpreted as having taken place in the past and neither a present tense nor a future reading is available:

- (74) wo zai Beijing canguan-le Gugong
I in Beijing visit-LE Imperial Palace
'I visited the Imperial Palace in Beijing.'
Not: 'I am visiting/will visit/will have visited the Imperial Palace in Beijing.'

In (75) and (76) it is also shown that it is not possible to over-ride the past time reading by providing suitable future, present-time or habitual adverbs:

- (75) *wo mingtian (hui/cai-yao) zai Beijing canguan-le Gugong
I tomorrow (will/then-will) in Beijing visit-LE Imperial Palace
intended: 'Tomorrow I will visit/will have visited the Imperial Palace.'
- (76) *wo mei-tian/xianzai gen Zhangsan canguan-le Gugong
I every day/now with Zhangsan visit-LE Imperial Palace
intended: 'Every day I visit/I am now visiting the Imperial Palace with Zhangsan.'

The fact that it is not possible to over-ride the past time interpretation occurring with *-le* here would seem to indicate that past time interpretation is not simply a conversational implicature which might arise when *-le* occurs as perfective aspect but significantly now actually part of the meaning of *-le* in these contexts.

One also finds that *-le* might sometimes seem *necessary* to signal a past time interpretation even though contextually a past time interpretation might appear to be obvious:

- (77) A: ni zuotian wanshang zuo-le shenme?
 you yesterday evening do-LE what
 'What did you do last night?'
 B: wo shang*(-le) Fawen ke
 I attend LE French class
 'I attended French classes.'¹²

There is then simple reason to believe that *-le* may be more than just a marker of perfective aspect but also have an association with the higher functional category of tense, specifically instantiating past tense in a way which cannot be cancelled as an implicature. Further plausibility to the contention that *-le* instantiates tense comes from a reflection on the likelihood of such an interpretation. If it is supposed that *-le* originated as a marker of completive aspect and then grammaticalized to instantiate perfective aspect, it would be a highly natural third development for it to possibly re-analyze further as an instantiation of tense. Not only do completives and perfectives commonly give rise to past time implicatures which may naturally strengthen over time to become an encoded part of the meaning of a morpheme, formally it can be shown that such a re-analysis would also be very natural in the model of

¹² Note that if a phrase such as *zai xuexiao* 'at school' is added into the structure of (77b), as in (i), it might seem that *-le* is not in fact necessary.

- (i) wo *(zai xuexiao) shang Fawen ke
 I be-at school attend French class
 'I was at school attending French classes.'

As an answer to (77A), the phrase *zai xuexiao* 'be at school' is obligatory and the interpretation of (i) is as glossed, and not 'I attended French classes at school.' I suggest that in such cases *zai xuexiao* 'at school' is in fact the first part of a serial verb construction with *zai* being a verb 'to be at.' It has frequently been noted (for example, Li and Thompson 1981, T'ung and Pollard 1997) that *-le* combines with serial verb constructions in ways which are different from clauses with a single verb. The proper study of serial verb constructions is beyond the scope of the present chapter.

grammaticalization proposed here. *Le* as a suffix could simply be re-interpreted as being active in a checking relation not only with Asp_1^0 perfective but also with the T^0 head which occurs above Asp_1P , i.e., *-le* would be interpreted as instantiating an additional higher head in the functional structure which the verb raises to at LF.

If there are then rather straightforward indications of an association between *-le* and tense suggesting that *-le* may instantiate past, one should obviously ask why it is that this has not been previously assumed and why a tense-*le* link has even been explicitly denied. In order to do this I will first briefly re-examine the notions of tense and aspect, emphasizing that they are formally distinct properties and sketching out a hypothetical analysis of *-le* as tense and then turn to look at the specific objections Li & Thompson (1981) raise to the assumption that *-le* is tense.

6.2.1 *Tense, Aspect and Perfectivity*

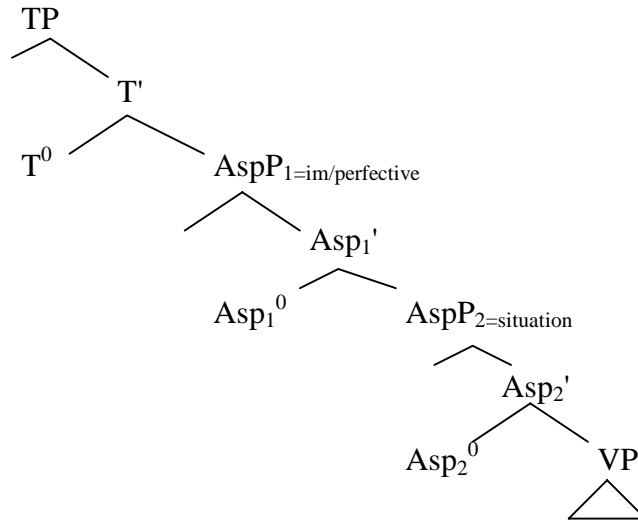
Section 6.1.2 presented an overview of Smith's two-tiered view of aspect which justifies the division of aspect into two clear major types - situation aspect and viewpoint aspect. Situation aspect corresponds to Vendler's (1967) notion of Aktionsart and the classification of a predicate according to its telic, durative and dynamic properties. Viewpoint aspect was then argued to apply to a predicate which already has a situation aspect characterization and present it from a particular perspective (viewpoint), essentially either as imperfective and focusing on the internal stages of an event or perfective and focusing on the event as a whole by making both its endpoints visible. These functions of aspect were then shown to be

independent of tense. In (78) below the situation type is +telic as the predicate is naturally bounded, and the viewpoint type encoded by the *be...-ing* form is imperfective, this resulting in a focusing of the internal stages of the event. It is also significantly seen that tense is an independent function which can be varied quite separately from both the situation aspect and the imperfective viewpoint--either a present, future or past tense specification can co-occur in the sentence:

(78) Mary is/was/will be drawing a circle.

Commenting on the tense/aspect distinction, Smith (1997, p.98) observes that: "Temporal location (*i.e.*, *tense*) and aspect are complementary temporal systems. The former locates a situation in time, while the latter specifies the internal temporal structure of the situation." Assuming therefore that there is indeed good justification for taking tense and viewpoint aspect to correspond to formally distinct functions, and arguing furthermore that completive aspect is licensed by a discrete functional head potentially encoding situation aspect, the expanded structure in (79) was adopted for a head-initial language such as Chinese. In (79) each distinct function is represented by a distinct functional projection/head. In the course of the analysis, various overt instantiations of both types of aspect heads were argued for, and although tense was not discussed there are also obvious free-standing candidate morphemes which may be taken to independently fill the T^0 position, e.g. *hui* 'will':

(79)



Considering in particular perfective now, following Smith (1997) its functional role has indeed been taken to be a focusing of the endpoints of a telic situation, and as with imperfective, such a role is assumed to be formally quite distinct from the addition of tense to a structure. A somewhat different view of perfective is to be found in Bybee, Perkins, & Pagliuca (1994). These authors define perfectives as signaling a situation which is temporally bounded (p.54), but also seem to assume that perfective is often a complex category combining both aspect and past tense. Perfective is described as standing in contrast with imperfective aspect, but *not* being distinct from or combining with any simple past tense morpheme. In other words, whereas an imperfective aspect morpheme may combine with a discrete simple past tense morpheme to result in a past imperfective interpretation, commonly it is found that perfective morphemes do not combine with the same past tense morpheme to indicate past perfective; instead they signal past time 'inherently' without other overt support. Cross-linguistically this may perhaps often be true and there may well only

be a single overt morpheme resulting in the interpretation of 'past perfective.' However, it is important to recognize that there are nevertheless two distinct formal properties involved here--the property of perfective aspect contrasting with imperfective and the property of past time reference contrasting with present/future. As such properties are semantically quite distinct and also represented by discrete morphemes when the aspectual specification is imperfective, it is only natural to assume that there are indeed two functional heads/projections present in the syntactic structure (as in (79)) even when the two properties of past and perfective are phonetically encoded in a single overt morpheme.

The observation which Bybee et al (1994) make that it is common across languages for there to be a distinct morpheme encoding past tense with imperfective aspect markers, but not so with perfective morphemes is however interesting, and indicates that perfective morphemes potentially may also signal a past time specification *in some way*. Structurally it must be assumed that distinct tense and perfective aspect functional heads must be present, but in terms of overt morphology it is actually a single element (the perfective morpheme) which may encode both the relevant properties. This is in essence what I have already argued in the case with *-le* and aspect, namely that the single overt morpheme *-le* may sometimes carry the specifications of two functional heads, completive and perfective aspect. In a development of the same theme in this section I will now go on to suggest that *-le* may also instantiate past tense in addition to perfective aspect.

First however, I would like to note that a developmental connection between aspect markers such as *-le* and the encoding of past time reference is indeed a common cross-linguistic phenomenon. Bybee et al (1994) observe that simple past and perfective markers which both signal past time reference frequently derive from completives and resultatives, i.e., elements of the V_2 type in Chinese RVCs and hence also *-le* in its origins. Harris (1982) and Bybee and Dahl (1989) similarly discuss how resultative constructions often evolve into perfectives and pure past tense markers, referring to languages such as French, Italian, Dutch, German and Turkish among others. Harris and Campbell (1995) also point to the Mayan language Cakchiquel as another instance in which a completive aspect marker has been re-analyzed as a past tense morpheme. This common process of change is generally assumed to result from a natural increase in the strength of a past time association with resultatives and completives. Use of a resultative to make reference to a result state is most common if the action leading to the result state has already occurred; consequently the use of resultatives often infers a past action (so does completives). Such a natural past time inference then may over time become strengthened to the point of becoming part of the genuine meaning of a morpheme. Writing about Chinese in particular, Smith (1997) writes that: 'Temporal location is often conveyed by a perfective or imperfective viewpoint. There is a conventional association of the imperfective with the Present and the perfective with Past. In the absence of other information, including adverbials, the viewpoints are taken to convey these times.' (p.279). Smith therefore assumes that perfective markers such

as *-le* also give rise to natural inferences of past time interpretation in Chinese as in other languages.

While the suggestion that resultatives and perfectives frequently infer past time is both natural and easy to accept, it is important to note that there comes a time during language change when a conversational implicature strengthens to the point of becoming a real part of the meaning associated with a morpheme so that this meaning can no longer be denied or over-ridden. Smith explicitly argues that the past time interpretation found with perfective markers in Chinese is still essentially a conversational implicature (a 'conventional association') which is made: '*in the absence of other information, including adverbials. . . .*' However, as shown in (75) and (76) repeated below, in fact this is not true, and it is actually not possible to use adverbials to over-ride the past time inference with *-le*:

- (75) *wo mingtian (hui/cai-yao) zai Beijing canguan-le Gugong
I tomorrow (will/then-will) in Beijing visit-LE Imperial Palace
intended: 'Tomorrow I will visit/will have visited the Imperial Palace.'
- (76) *wo mei-tian/xianzai gen Zhangsan canguan-le Gugong
I every day/now with Zhangsan visit-LE Imperial Palace
intended: 'Every day I visit/I am now visiting the Imperial Palace with Zhangsan.'

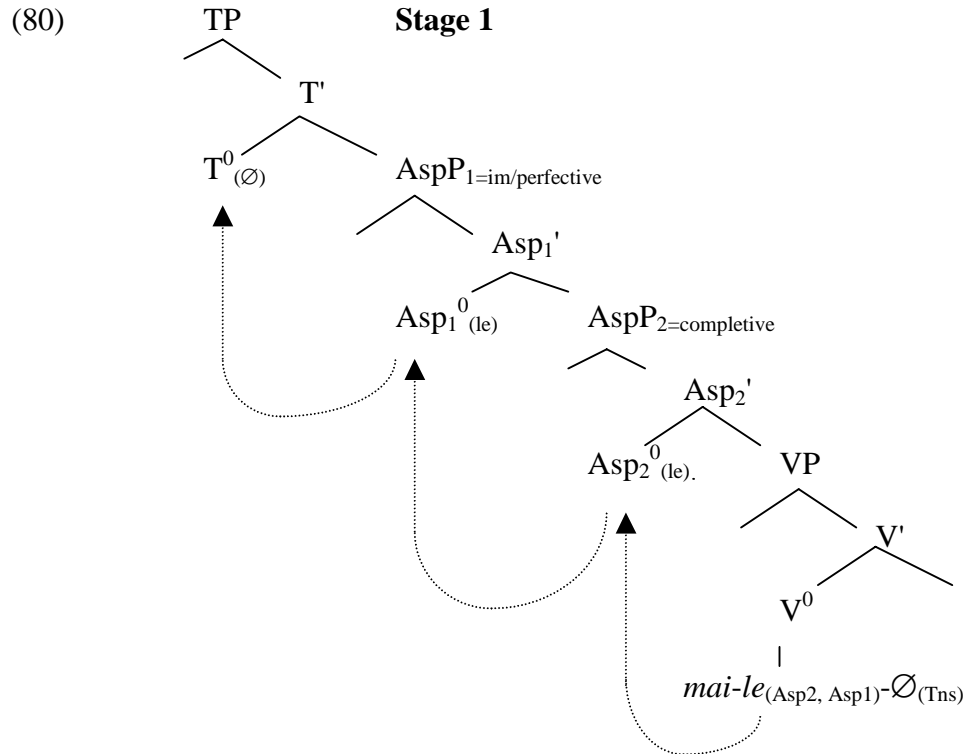
What this then now strongly suggests is that diachronically *-le* has indeed followed a very common and natural route of change originating as a completive and later turning into a perfective marker, but that synchronically *-le* now also encodes past

time not simply as a pragmatic inference but genuinely as an instantiation of tense/T⁰.

Considered from the point of view of the more formal model of grammaticalization developed in 6.1.4, such a change to a situation in which tense is taken to be encoded on *-le* is also very natural. Attempting to account for the earlier aspectual change where *-le* hypothetically instantiated completive aspect with a restricted set of verbs to the present situation where *-le* occurs as a general perfective marker it was suggested that this resulted from *-le* raising at LF with the rest of the verbal complex and being re-interpreted as instantiating not only the lower Asp₂⁰ head (completive aspect) but also as being licensed against the higher Asp₁⁰ head (perfective). Here with regard to tense it can be suggested that *-le* simply becomes interpreted as being actively engaged in a licensing/checking relation with a higher head still, the T⁰ head which selects for the perfective Asp₁P. As noted above, a past time/tense interpretation of a perfective/completive morpheme is a natural pragmatic inference resulting from the inherent meaning of completion/resultatives, and so the re-interpretation of perfective *-le* as instantiating not only perfective aspect but also the structurally higher past tense would also be a very normal extension of its original interpretation.

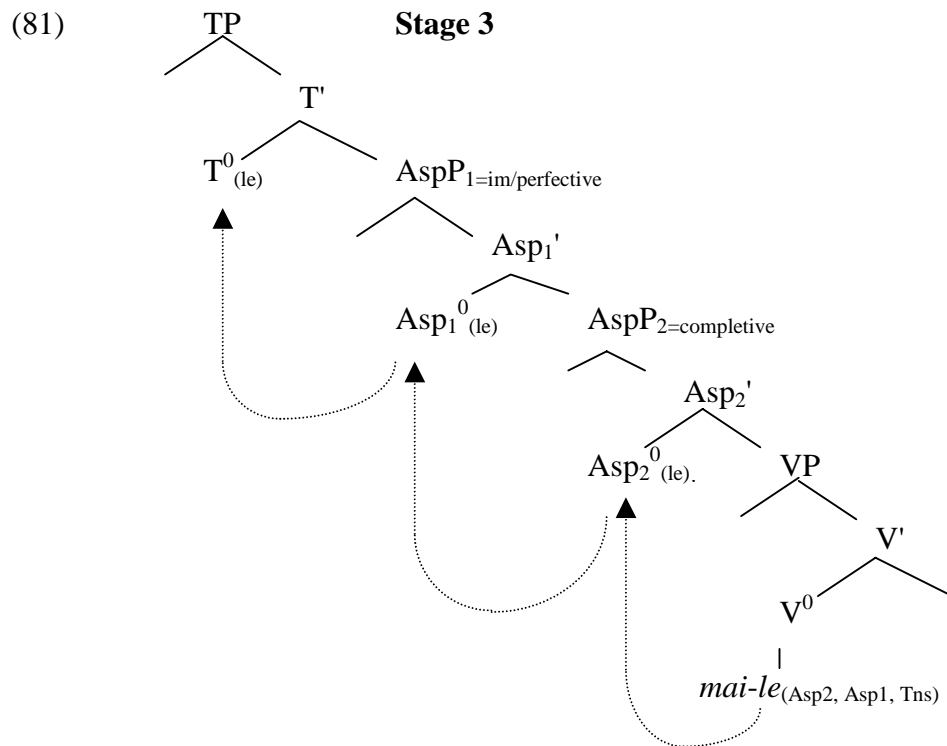
Formally the following stages of re-analysis can be suggested to result in the present synchronic situation. At an initial stage it may be assumed (as in 6.1.4) that *-le* is base-generated with completive/perfective aspect features and that tense features are inserted on a phonologically null suffix $\emptyset_{(Tns)}$ as in (80) (or alternatively

base-generated on a free-standing phonologically zero morpheme inserted directly into T^0). (80) considers a case where the verb stem attaches both completive and perfective aspect encoded by *-le* (raising through the functional structure as indicated at LF):



In stage 2 *-le* comes to have an association with past time reference, but this has the status of an implicature which can be cancelled given appropriate means (adverbials, etc.). This association of *-le* with past time in a way which allows for cancellation can be described somewhat formally as signifying that *-le* at such a stage is *optionally* understood as representing past tense. In terms of feature-theory, the 'implicature period' may be suggested to correspond to a stage 2 in which (past) tense features are only optionally added to *-le* and checked against T^0 . If synchronically

there is evidence that past tense/past time reference has in fact now become a part of the meaning of *-le* which cannot be cancelled by adverbials, this can be taken to indicate that past tense features will now always be added to *-le* for subsequent checking against T^0 as schematically represented in (81) (the 'optional' period Stage 2 simply corresponds to the choice of either the derivation in (80) or (81)):



Ultimately then, the hypothesis that further grammaticalization of *-le* has led to *-le* coming to instantiate past tense would seem to have much to support it. First of all, cross-linguistically the re-analysis of resultatives and completives similar to *-le* into higher functional types encoding past time reference is well-attested, and such a change is easily understood to be the simple result of a pragmatic inference naturally available with such elements becoming standardized as part of the inherent meaning

of these morphemes over time. Secondly, there is clear synchronic evidence that *-le* may often only have a past time interpretation and such an interpretation cannot be over-ridden via the use of any adverbs. Thirdly, the hypothesized development of *-le* from perfective into tense is also highly natural in the modeling of grammaticalization argued for here, where categorial re-analysis results from upward movement within a tree. Lower affixal elements come to be re-analyzed as optionally instantiating higher functional heads when raised up to such positions in larger feature-sets. In the case of *-le*, it is naturally interpreted as potentially being active in a checking relation not only with the lower heads Asp_2^0 and Asp_1^0 but also with the higher T^0 head which selects for Asp_1P .

In what follows I re-examine the classic objections to an analysis of *-le* as tense, and argue that in all cases the objections are either misconceived or alternatively allow for other explanations.

6.2.2 Possible Objections to an Analysis of -Le as Tense

In Li & Thompson's (1981) chapter 6: '*-Le* Does Not Mean Past Tense,' (pp. 213-215) there are four essential arguments against the assumption that *-le* instantiates past tense. To these can be added two other obvious reasons why one might not initially think of taking *-le* as a morpheme encoding tense.

Li & Thompson's claim that *-le* does not mean past tense is based on the following observations.¹³ First of all, it is noted that even if an event is interpreted as having taken place in the past it is often not necessary for *-le* to occur. If *-le* were to be a past-tense marker it is therefore inferred that one might expect it to be necessary in all references to events occurring in the past. (82) and (83) are two of the examples given:

- (82) wo zao zhidao you yi-dian bu dui.
I early know be a-little not right
'I knew a long time ago that something was wrong.'
- (83) zuotian ye-li wo meng-jian wo muqin.
yesterday night-in I dream-meet I mother
'Last night I dreamed about my mother.'

Secondly, it is noted that *-le* need not signal past time in certain subordinate clauses such as (84):

- (84) wo chi-le fan zai zou.
I eat-LE rice then go
'I'll go after I eat.'

Thirdly, Li & Thompson point out that *-le* does not encode any past time reference when it occurs in imperative sentences such as (85):

¹³ Note that the order of presentation of these points is slightly changed from that in Li & Thompson. This is done simply in order that they can be sequentially addressed as problems in the most natural and logical order.

- (85) he-le ta
 drink-LE it
 'Drink it!'

Finally, it is shown that there is even one instance in which *-le* may apparently occur in a matrix clause with a non-past meaning:

- (86) mingtian wo jiu kaichu-le ta
 tomorrow I then expel-LE him
 'I'll expel him tomorrow!'

In addition to Li & Thompson's arguments it can be added that there is a widely-held assumption articulated in Bybee et al (1994) that for a morpheme to be considered a marker of past tense it should be fully general in its potential application and combine with verbal elements of all types and aspects. With regard to such a criteria, it can be noted that *-le* is commonly taken *not* to be able to combine with a whole range of simple verbs such as *shuo* 'say,' *jueding* 'decide,' *xiwang* 'hope (to),' etc. This may therefore be taken to suggest that it is not in fact a simple marker of past tense:

- (87) Ta shuo(*-le) Zhangsan mai-le yi-liang xin che le
 he say LE Zhangsan buy-LE 1-CL new car LE
 'He said that Zhangsan has bought a new car.'
- (88) Ta jueding(*-le) mai yi-ge-fangzi
 he decide(-LE) buy 1-CL-house
 'He decided to buy a house.'

Finally, as well as not being able to combine with a certain sub-set of quite regular activity and achievement verbs, *-le* is also argued (e.g., in Smith 1997 and many other works) to be unavailable as a simple marker of past with all of the stative verb group. It is commonly stated that although *-le* may in fact occur with stative verbs, this does not result in a simple interpretation of a past event/state but rather in an inchoative interpretation. For example, (89) is not interpreted as 'Zhangsan was ill.' (a simple past interpretation) but as 'Zhangsan *became* ill.' (inchoative). Such a patterning is again seen as a reason not to consider *-le* as past tense:

- (89) Zhangsan bing-le.
Zhangsan be-sick-LE
'Zhangsan got sick.'

There might therefore seem to be a range of potentially good reasons not to consider verbal *-le* as tense in fact, despite the evidence and arguments presented in 6.2.1 supporting such an account. In the following I will however argue against these objections.

6.2.3 *Objections to the Objections*

I will now proceed to re-examine the above objections one by one and attempt to show that they can in fact be quite satisfactorily answered while still maintaining the suggestion that *-le* has indeed come to be an instantiation of tense.

6.2.3.1 Optionality of -le

The first of Li & Thompson's objections I will re-consider is their observation that *-le* often need not occur in situations where there is a past time interpretation, as in (82) and (83) above. It is inferred that if *-le* were to be a genuine marker of past tense then it would be expected to have to occur here and in all instances of past time reference. Such a position would seem to be influenced by considerations of the synchronic state of English and various other languages, where past tense must always be marked in past time situations. From a cross-linguistic and a diachronic point of view however, it is certainly *not* true that languages always encode tense explicitly wherever this may be possible. Bybee et al (1994) note that one common property of grammaticizing morphemes is "frequency increase," and that from a stage where new functional elements are only used when obligatory in otherwise potentially ambiguous environments, they later come to be simply applied wherever their meaning is compatible with the general context. An example they give is that the English simple past tense *-ed* is (now) used not only where it supplies new information that a situation occurred in the past, but also in contexts where it is very clear from other elements such as adverbs and previous occurrences of past tense that the interpretation must be past time. The use of past tense in Modern English is then frequently rather redundant. However, similar obligatory use of functional morphemes in every compatible situation is by no means fully common. Bybee et al note for example that the past habitual form *used to* need not be used in every case

where there is a past habitual interpretation, and that (91) has the same interpretation as (90) even without the overt past habitual form:

(90) When she lived with him, she *used to sing* to him every day.

(91) When she lived with him, she *sang* to him every day.

Bybee et al also mention Cheyenne as an example of a language where none of the tense markers are obligatory (p.98). It is therefore not true that a functional morpheme must appear in every compatible context in order to be classed as a functional element. Such rather redundant overuse is simply a possible stage in the development of grammatical elements, and functional morphemes which are only used when really necessary are by no means any less functional than those which are used wherever possible.

Relevant and interesting here is also the diachronic development of the English past tense form in *-ed* which arguably came into use as an optional encoding of an *emphatic* past tense form (see Bybee et al p.150). The original source of the *-ed* suffix was in fact the Old English free-standing auxiliary *dyde* (Modern English *did*). Old English being verb-final the auxiliary frequently occurred following the main verb and *dyde* over time naturally became the reduced suffixal element *-ed*, as abstractly diagrammed in (92) (see also section 5.4 in chapter 5 of this dissertation on suffix-creation in SOV languages):

(92) John to London walk did. → John to London walk-ed.

Diachronically then it can be argued that the English past tense morpheme would have originally occurred when the speaker also intended a certain emphasis and would not have occurred in every past time environment. This I believe is quite possibly also true with the use of Chinese *-le*. Basically it might seem that *-le* occurs in two particular types of situation. Studies such as Spanos (1979) reported in Smith (1997) have agreed with other investigations that *-le* is used when the context makes it 'necessary to explicitly state the realization of a given action.' (p.81), and that speakers used *-le* commonly when past time reference was not clear from the context. *Le* therefore frequently occurs when past time reference must be made clear and explicit--arguably a disambiguating function. Elsewhere it might appear that *-le* is often used when the speaker wishes to *emphasize* an action. In Chang's (1986) study reported in Smith (1997) it is argued that *-le* occurs predominantly as 'an explicit marker for the peak event in a discourse segment.' (p.265). Smith (1997) also observes that *when*-type clauses in Chinese such as in (93) function to foreground the event in the main clause and that this usually means that the verb in the main clause needs to carry a viewpoint morpheme such as *-le*:

- (93) Ta zai Beijing de shihou xue-le Hanyu
he be-in Beijing DE time study-LE Chinese
'When he was in Beijing he learned Chinese.'

If the *when*-clause is the background, then this means that the verb carrying the viewpoint morpheme is highlighted/focused. T'ung & Pollard (1997) additionally note that *-le* 'is not necessary when describing circumstances (i.e., the background to

an event) or relating sequences of events (if it is used, it breaks the sequence into separate steps).' (p.144). It therefore might seem that speakers use *-le* when the event depicted requires a certain emphasis, and hence that *-le* is actually rather similar to (the development of) the English emphatic past *dyde/-ed*. Largely following the conclusions of other researchers, the distribution of *-le* can consequently be suggested to be largely dictated by two main factors: *-le* is used when the context requires *disambiguation* as past, and *-le* is also used to mark an *emphatic* past event.¹⁴ Given the apparent optionality of *-le* it is rather natural that the use of overt phonetic material should in fact result in an emphasized interpretation. Similar patterns are elsewhere found where a language has both null pronominals (*pro*) and overt pronouns; the overt forms are basically only used when there is either ambiguity or in order to emphasize the referent. Elsewhere where no emphasis or disambiguation is required, overt forms are avoided, this being reflected in Chomsky's (1981) suggestion of an Avoid Pronoun Principle. With optional elements such as *-le* one may assume that a parallel and general Avoid Overt Realization Principle also leads speakers to only use *-le* when necessary (or for emphasis).

Ultimately then, the optionality of *-le* does not argue against its status as a tense element in any convincing way. There are both other languages in which tense

¹⁴ It is commonly noted that verbal *-le* must also appear when the object of the verb is quantified and specific. This can be considered to be a sub-case of the focusing use of *-le*. If an object is explicitly quantified in object position, then both the quantified object and the predicate are arguably in focus.

is clearly only given optional phonetic realization and also simple reasons why one can understand the avoidance of overt forms if this is possible in a language.

6.2.3.2 Lack of generality: with certain simple verbs

An understanding of the potentially emphatic properties of *-le* now also allows for an explanation of some of the lack of generality noted with *-le* above. Whereas Li & Thompson point out that *-le* sometimes *need* not occur in past time descriptions, it was also noted that *-le* apparently *may* not occur with certain simple verbs such as *shuo* 'say, *jueding* 'decide,' *zhidao* 'know' and *dasuan* 'decide to' as in (87-88) repeated below together with an example with *zhidao* (94):

- (87) Ta shuo(*-le) Zhangsan mai-le yi-liang xin che le
he say LE Zhangsan buy-LE 1-CL new car LE
'He said that Zhangsan has bought a new car.'
- (88) Ta jueding(*-le) mai yi-ge-fangzi
he decide(-LE) buy 1-CL-house
'He decided to buy a house.'
- (94) Ta zhidao(*-le) Mali yao he Zhangsan jie-hun le
he know LE Mali want with Zhangsan marry LE
'He knew that Mali wanted to get married with Zhangsan.'

Here I believe there is a very simple explanation of the unacceptability of these examples. With all of these rather general verbs it is their following clausal complement which encodes the new and hence focused information in the sentence. This being so it is quite inappropriate for *-le* to be used on the embedding verb as *-le*

is essentially licensed as a means to emphasize and focus a verb. Were the matrix verb to carry an emphatic focus with *-le* this would result in two unconnected foci in the sentence--the first is the emphasis on the act of saying, deciding etc., and the second the natural focus encoded by the new information of the complement clause. The likelihood of such a mode of explanation being correct can in fact easily be checked. Whereas clausal complements to verbs of saying, knowing and deciding tend to be consistently interpreted as new information, if the complement of these verbs is instead a DP headed by an anaphoric demonstrative such as *zhei/nei* 'this/that' it is easily interpretable as old information not in focus. Interestingly as soon as the objects of *zhidao* and *jueding* etc. are nominal and old information it is found that *-le* is perfectly acceptable on the verb as shown in (95) and (96):

- (95) ta huran zhidao-le nei-jian-shi.
 he suddenly know-LE that-Cl-thing
 'Suddenly he knew it/found it out.'
- (96) nei-jian-shi ta jueding-le hen jiu/liang-tian le
 that-Cl-thing he decide-LE very long/2 day LE
 'He decided that very long ago/two days ago.'

Furthermore, while *shuo* 'say' is a very general verb of oral communication and hence a verb which will naturally focus its complement clause as new information, if an adverbial is added to *shuo* which allows for emphasis on the verb it is found that *shuo* can occur both with *-le* and a clausal complement, as in (97) (note that *you*

'again' is also used to try to force an interpretation in which the complement clause must be old information and emphasis is on *shuo*):

- (97) Ta you da-sheng-de shuo-le ta bu qu
he again big-voice-ly say-LE he not go
'He then again *shouted* that he wasn't going.'

Consequently, the apparent 'non-generality' of *-le* with certain verbs actually can be explained in a rather simple way and cannot be taken to provide evidence against a past tense analysis of *-le* (on the grounds of lack of expected generality). Once certain discourse factors are controlled for it is found that the verbs in question are in fact able to carry *-le* signaling past tense and that there is no genuine lack of generality with these predicates.

6.2.3.3 Lack of generality: with statives

The next potential objection to an analysis of *-le* as tense which I would like to consider here is another very broad case of lack of generality--the apparent inability of *-le* to occur signaling simple past tense/time with the *stative verb* group. Commonly it is argued that only a special inchoative interpretation is available when stative verbs combine with *-le* and not an interpretation corresponding to a simple past usage. As noted above, (89) repeated below is not interpreted as 'Zhangsan was ill.' (a simple past interpretation) but as 'Zhangsan *became* ill.' (inchoative):

- (89) Zhangsan bing-le.
Zhangsan be-sick-LE
'Zhangsan got sick.'

In order to tackle this 'problem,' we need to understand what is meant by inchoativity as a linguistic term and whether referring to a particular interpretation as inchoative would necessarily classify it as anything significantly different from 'regular' past interpretations.

In section 6.2.1 above it has essentially been suggested that because of the way that it has developed from perfective (and earlier completive aspect) marker, verbal *-le* synchronically has a dual nature and instantiates both past tense and perfective aspect. Such a hypothetical dual specification as past and perfective will below be argued to allow for a natural account of the apparent inchoative restrictions on the interpretation of *-le* with statives. First of all though it can be noted that despite more traditional morphological views (such as the Item and Arrangement approach) that a single morpheme corresponds to just a single function, there are indeed good reasons to believe that a single morpheme may fulfill multiple functions (as in fact assumed in the Word and Paradigm approach to morphology).¹⁵ Such dual functionality is also very commonly found in the interaction of tense and aspect functions. Smith (1997) for example notes the case of English *used to* which encodes both past tense and habitual aspect and can nowadays *only* occur in the past tense--thus a tense and an aspectual specification are bound up inseparably in a single morpheme:

(98) John used to/*uses to like Mary.

The French *Imparfait* verb form is another case given where there is an inseparable combination of tense and (imperfective) aspect. As shown in (99), French *Imparfait* suffix, like English "used to," only occurs in the past tense (Smith 1997). To express a present counterpart of a progressive event, a different strategy is employed as shown in (99b), rather than using an imperfective verb form.

- (99) a. Jean lisait un roman
Jean read.past.3rdsg.Imp a novel
'Jean was reading a novel.'
- b. Jean est en train de lire.
Jean is in train of read
'Jean is (in train of) reading a novel.'

Also aspectual restrictions on the use of English simple present tense are noted in Smith. When present tense in English does not occur with imperfective aspect (i.e., *be...-ing*), it receives an automatic interpretation as habitual aspect, indicating again that tense and a type of aspectual interpretation are bound up together in a single overt morpheme (as well as 3rd.sing. agreement):

(100) John plays tennis.

Consequently it is fairly clear that diachronic change may frequently lead to situations where tense and aspectual properties co-occur in a single overt element.

¹⁵ For both morphological models, see the discussions in Matthews (1974).

The assumption that Chinese *-le* encodes the dual functions of past tense and perfective aspect (and sometimes also hypothetically completive aspect) now provides the basis for an explanation of the patterning with *-le* and stative verbs. Comrie (1976) points out that there is in fact a common connection between perfective aspect and inchoativity with stative verbs: 'In many languages that have a distinction between perfective and imperfective, the perfective forms of some verbs, in particular of some stative verbs, can in fact be used to indicate the beginning of a situation (ingressive meaning).' (p.19). What needs to be asked now is whether inchoativity really is a primitive type of aspect different from simple perfective, or whether (as Comrie hints) that it is possibly quite a predictable bi-product of perfective aspect combining with a certain class of verbs.

Supposing that inchoative were to be a primitive different type of viewpoint aspect contrasting with perfective and imperfective, one could possibly attempt to explain the inchoative interpretation of *-le* with stative verbs in the following way. It could be suggested that because perfective aspect *-le* originally derives from a predicate meaning 'to finish' it may still retain something of its earlier meaning and still require/select for a complement which is +dynamic. For example, in English the word 'finished,' when used as a perfective marker, still requires an agentive subject and a +dynamic predicate:

- (101) a. John finished reading.
b. *John finished being sleepy.

It is actually quite common cross-linguistically for aspectual verbs derived from predicates having an original interpretation of the 'to finish' type to show similar restrictions to Chinese *-le* and give rise to inchoative readings when combined with stative verbs (see here Bybee et al 1994). If such predicates originally had agentive subjects in control of dynamic actions, then it is possible that they would not readily combine with non-dynamic states.¹⁶ Then a type of aspect different from perfective would have to occur with stative predicates, and inchoative aspect might then be this different type. However, such an approach would seem to require the assumption that *-le* could represent two types of different aspect contrasting in the viewpoint category, which seems to be somewhat implausible. Furthermore, *-le* is derived from a sentence-final *-liao* which takes the whole sentence as its argument, so it is not so obvious that *liao* originally did have anything like an agentive subject and a necessary dynamic complement, unlike other aspectual elements such as English 'finished' in (101).

Smith (1997) seems to suggest that inchoativity is really independent of perfectivity and instead part of situation aspect:

¹⁶ See here Bybee et al (1994, p.76): 'In the early stages it would not be normal for constructions with 'finish' or anteriors from *be* or *have* auxiliaries to be used with stative predicates. They are compatible only with dynamic predicates, and it is the meaning they develop with dynamic predicates that is transferred in their use with stative predicates.'

The perfective is not available to statives in Chinese, Russian and Navajo. These languages have no perfective sentences with stative verb constellations and the interpretation of a basic-level stative situation type. Stative verb constellations do allow the perfective viewpoint when they undergo a shift in situation type. They appear as inchoatives in derived telic sentences. As such they present a change into the state which the verb constellation lexically denotes. In situation type they are either Achievements or Accomplishments, depending on the feature of duration. (p.70)

However, this also does not seem to be right for two clear reasons. First of all if stative verb + *-le* combinations are intransitive telic achievements or accomplishment predicates, they should be expected to exhibit unaccusative syntax. In Chinese achievement/accomplishment verbs are either inherently unaccusative/telic, for example *si* 'die' or become telic and unaccusative in virtue of a V₂ telic bound. All such unaccusatives allow indefinite subject inversion, whereas unergative intransitives with simple perfective *-le* do not. As noted in Sybesma (1999), *ku* 'cry' in (102) is not one of the 28 verbs which allow *-le* as a completive V₂ and *-le* must therefore be simply perfective when combining with *ku*. Perfectivity alone does not license indefinite subject inversion whereas the telicity encoded by a V₂ corresponding to Asp_{2completive} does (examples (102b) and (103b) are adapted from Sybesma 1999):

- (102) a. dang-shi henduo ren ku-le
 that-time many people cry-LE
 'Many people cried then.'
- b. *dang-shi ku-le henduo ren
 that-time cry-LE many people
 intended: 'Many people cried then.'
- (103) a. dang-shi henduo ren ku-lei-le
 that-time many people cry-tired-LE
 'Many people cried themselves tired then.'
- b. dang-shi ku-lei-le henduo ren
 that-time cry-tired-LE many people
 'Many people cried themselves tired then.'
- (104) a. dang-shi henduo ren si-le
 that time many people die-LE
 'At that time many people died.'
- b. dang-shi si-le henduo ren
 that time die-LE many people
 'At that time many people died.'

If *-le* occurring with a stative verb resulted in a telic achievement or accomplishment, then it is expected that stative verbs and *-le* should allow for indefinite subjects to invert. This is however not the case:

- (105) a. dang-shi henduo ren bing-le
 that-time many people be-ill-LE
 intended: 'At that time many people got ill.'
- b. *dang-shi bing-le henduo ren
 that-time be-ill-LE many people
 intended: 'At that time many people got ill.'

This would seem to indicate both that *-le* is not occurring in the V_2 position here making the stative verb telic, and that inchoativity does not correspond to any telic shift to an achievement/accomplishment type occurring in the situation aspect.

Secondly, if *-le* occurring with stative verbs were to represent some further type of aspectual primitive either in complementary distribution with simple perfectivity or somehow in the completive V_2 position, one would expect that it should be able to occur in a sentence with future reference such as (106), but again this is not at all possible:

- (106) *wo mingnian yiding hui bing-le san tian
 I next-year certainly will be-ill-LE three day
 intended: 'Next year I will certainly be sick for three days.'

As shown in the intended gloss, there is a perfectly good anticipated interpretation that should be available if inchoativity were to be an independent type of aspect, and the notion of inchoativity should be in theory compatible with future time reference. The fact that sentences such as (106) are unacceptable can be taken to indicate instead that *-le* in fact is simply perfective aspect here combining also with past

tense, and it is the past tense specification which is incompatible with the future oriented adverb.

Consequently, if 'inchoative *-le*' is not taken to be a primitive independent type of aspect contrasting with perfective, the inchoative interpretation still needs some explanation. I would like to suggest that this can in fact be understood quite naturally when one reflects on what happens when a perfective such as *-le* is applied to stative verbs. Following Smith (1997), the role of perfective viewpoint is taken to be the focusing of endpoints present in a telic predicate. As statives are atelic and clearly have no obvious endpoints, when perfective is combined with a stative verb it can only signal realization of the state, not completion of the state (which would require a final endpoint). As simple realization logically implies that there must be some beginning point but no explicit end, the realization interpretation comes to be understood as simple inchoativity.

An alternative to such an account is to suggest that because perfective *-le* will always require a predicate which is telic to apply to, the element *-le* which occurs with stative verbs is actually not perfective verbal *-le*. Instead it may be suggested that what occurs with stative verbs is actually *sentence-final -le*. In all of the examples commonly given in the literature *-le* with intransitive stative verbs comes in sentence-final position and there has not been any attempt to control for whether this might really be sentence *-le* instead. As sentence *-le* signals that the general situation of a predicate is ongoing and relevant to the current moment, an interpretation of inchoativity with stative verbs might indeed be rather natural,

indicating that the state of the predicate has begun and is relevant to the speech time and is not yet closed. In support of such a possibility is the data in (107) and (108) which seem to indicate that when a stative verb is *transitive*, it cannot in fact occur with verbal *-le* but instead allows for an interpretation of inchoativity with sentence *-le*:

(107) *xianzai ta zai-le Beijing
now he be-in-LE Beijing
intended: 'Now he is in Beijing.'

(108) xianzai ta zai Beijing le
now he be-in Beijing LE
'Now he is in Beijing.'

However the inchoative interpretation arises, either as a default via perfective aspect just signaling realization with no indicated endpoint or alternatively through sentence *-le* signaling open-ended relevance to the current situation, the conclusion is that inchoativity here does not correspond to any primitive alternative aspectual type necessarily excluding perfective aspect. There is also simple but highly significant evidence indicating that verbal *-le* actually can in fact encode a straightforward interpretation of perfectivity and simple past tense with stative verbs, despite the common assumption that only inchoative interpretations are possible. Compare (89) to (109). A durative time phrase is added on to the combination of a stative verb and *-le* in (109), whose word order makes it clear that this is a verbal *-le* and not a sentence-final *-le*. The resulting interpretation is of simple past time:

- (89) Zhangsan bing-le. (inchoative)
 Zhangsan be-sick-LE
 'Zhangsan got sick.'
- (109) ta (zai Beijing de shihou) bing-le san tian
 he (in Beijing DE time) be-ill-LE 3 day
 'He was sick for three days (when he was in Beijing).'

It clearly shows that stative verbs do indeed combine quite regularly with verbal *-le* to give a basic past time perfective reading, despite the frequent denial that this is possible. Above it was suggested that stative verbs might perhaps not easily combine with perfectivity because the perfective's function is to focus the endpoints of a situation and stative predicates have no inherent endpoints. Functionally what the addition of the duration phrase to a stative verb + *-le* does is simply to provide an explicit temporal bound to the predicate. Once this is added in to the structure, the combination of stative verb and *-le* is perfectly well-formed with a past perfective interpretation just like other predicate types.¹⁷ What is also interesting is that the 'inchoative' interpretation supposed to result from the particular combination of verbal *-le* and stative verbs is actually not restricted just to this class of predicate and also arguably occurs with *activity* verbs when they occur without a telic bound. The interpretation of (110) and (111) with an activity verb occurring alone with *-le*,

¹⁷ Note also that it is not possible to suggest that this is somehow a 'disguised' inchoative reading. The interpretation is of a simple extension in the past just as with other predicate types with an extension over time in the past. Furthermore inchoativity is essentially instantaneous and picks out a single time point like an achievement, the coming into being of some state. Consequently, as with instantaneous achievements, inchoative interpretations do not combine well with durative adverbials:

- (i) */?John has become/started to be sick for three days.

paralleling the common examples of a stative verb alone with *-le* (as in (89)), would also seem to have primarily an inchoative reading signaling an entry into the activity:¹⁸

(110) Ta ku-le
he cry-LE
'He started to cry.'

(111) Ta shui-le
he sleep-LE
'He started to sleep (he has gone to bed).'

Again, once some kind of telic bound is added in, the interpretation is of simple past perfective:

(112) Ta pao-le/shui-le liang-ge-zhongtou
he run-LE/sleep-LE 2-C1-hour
'He ran/slept for two hours.'

The ultimate conclusion concerning stative verbs and *-le* is therefore that there is no fundamental difference between stative verbs and other predicates in the possibility

¹⁸ Note that informants indicate that the *most salient* interpretation in the combination of past perfective and activity verbs which are not explicitly bounded in English is also that of inchoativity and entry into the activity, as e.g. in:

- (i) John ran.
- (ii) Mary ate.

This inchoative interpretation is very clear and almost forced when a single time point is added in as in (iii) and (iv):

- (iii) When I looked at him, John ran.
- (iv) Mary ate at two/Mrs. Smith's command.

Although there would seem to be inchoative interpretations here, it is not obvious that one would want to say that the occurrence of past perfective is any different here from that in non-inchoative readings.

of being combined with past perfective *-le*, and that any inchoative reading is simply due to the lack of any telic bound, stative verbs behaving here just like activity verbs which otherwise do combine with past perfective *-le*. Consequently, as in the previous cases considered (i.e., the potential combination of *shuo*, *jueding*, *zhidao* etc. with *-le*), careful investigation shows that ultimately there is no necessary restriction on the generality of past perfective *-le*, and that potential lack of generality can therefore not be used as an objection to the analysis of *-le* as instantiating past.

6.2.3.4 Subordinate clauses

I will now move on to consider the three other remaining objections to a past tense analysis of *-le* raised by Li & Thompson. The first of these was that verbal *-le* regularly occurs embedded in examples such as (84) without necessarily signaling past time:

- (84) wo chi-le fan zai zou.
I eat-LE rice then go
'I'll go after I eat.'

If *-le* here may occur without having a past time interpretation this might seem to falsify the contention that verbal *-le* has come to instantiate past tense and suggest that such a claim should be abandoned. However, given the constant past time interpretation arising with *-le* in environments other than this subordinate clause case and the two other specific contexts to be re-considered below (imperatives and main

clauses with *jiu* 'then') I believe it is worth attempting to see if such cases might perhaps have some alternative explanation.

I believe that a possible solution to the problem involves focusing on two particular properties of this non-past usage of *-le*. The first is that this non-past use of *-le* is confined to a certain type of *subordinate* clause/constituent. The second is the general suggestion that *-le* is a morpheme undergoing diachronic change and re-analysis, i.e., it is claimed to have developed from a completive to a perfective marker, and now to be an instantiation of past tense. Now, much diachronic research has shown that morpho-syntactic change and re-analysis is often not effected at the same time in all potentially available environments and that changes very frequently occur in main/matrix clauses before they later spread to other subordinate contexts. Harris & Campbell (1995) attribute this 'discovery' originally to Biener (1922a/b) and note that it is an assumption both widely held among historical linguists and substantiated by much research work. Harris & Campbell note that it is believed:

subordinate clauses are less subject to syntactic change than are main clauses because they exhibit a more restricted range of morpho-syntactic trappings due to their backgrounding function in discourse (Givon 1971, 1984; Hopper and Thompson 1984). The general idea involved is the belief that change starts in main clauses and may or may not ultimately come to affect subordinate clauses, but that it does not begin in subordinate clauses, later reaching main clauses. (p.27)

In a footnote (footnote 8, p.382) it is also added that: '. . . in general, subordinate clauses do contain fewer morphosyntactic contrasts than main clauses.' Making use of this general insight that morpho-syntactic changes occur first in main clauses and then only later spread to subordinate clauses--or possibly even remain confined to

main clauses and do not get incorporated into subordinate environments--it could here be quite reasonably suggested that such a main clause/subordinate clause developmental distinction is behind the non-past interpretation of *-le* in (84). Having argued that *-le* has undergone re-analysis into an instantiation of past tense as well as perfective, it could now be suggested that while this change has indeed occurred in regular main clauses and even many subordinate clause environments, it has not yet spread to the subordinate clause type found in examples such as (84), and consequently *-le* simply instantiates perfective in such an environment. Such a suggestion would be fully in line with the view mentioned above that morpho-syntactic changes may only gradually spread from matrix clauses to other subordinate environments. It would also be supported by the assumption made here that *-le* instantiates perfective as well as past in most environments--the particular subordinate context found in (84) would simply be a case where *-le* has re-analyzed as far as being perfective but not undergone the further change to be interpreted as past tense as well (i.e., has not reached Stage 3 of the process outlined in (81)). One particularly relevant example of a morpho-syntactic change which occurred in main clause contexts but not in all subordinate clauses is the diachronic re-analysis of the classical Japanese aspect system into tense. From an earlier stage in which Japanese is taken to have had only a contrastive system of aspect in both main and embedded clauses there arose the Modern Japanese system of tense, created when various of the early aspect markers became re-interpreted as tense elements (see e.g. Takeuchi 1998). What is interesting to note is that while the element *-ta* has been

grammaticalized as clearly instantiating past tense in most main and embedded clause environments, in relative clauses it is still possible for *-ta* to occur with just perfective aspect interpretation and actually refer to a future context. Example (113) is from Nakamura (1994):

- (113) [ashita ichiban hayaku kita] hito-ni kore-o ageru
tomorrow most early came person-Dat this-Acc give
'I will give this to the person who comes (*lit.* came) first tomorrow.'

In Japanese it is fully accepted that *-ta* is a past tense marker, but there remains this one subordinate context in which it can still be interpreted as perfective. Such a situation is precisely what may be argued to be found also in Chinese--although there has been a general re-analysis of *-le* as both past and perfective, in the particular subordinate clause case (84) this change has not yet occurred and *-le* remains just perfective. A developmental approach such as that outlined above therefore allows one to maintain the claim that *-le* has indeed *essentially* undergone re-analysis as past as claimed and is also supported by the occurrence of similar historical changes in other languages.

A possible formal interpretation of such a hypothesis is to suggest that *-le* is not necessarily interpreted as instantiating past tense in (84) because there actually is no legitimate tense position in the subordinate clause in (84) which could license *-le* as past. It can be suggested that the subordinate clause containing *chi-le* 'eat-LE' is either just an AspP rather than a TP, or that it is a necessarily non-finite TP. In either case, because no potentially finite T^0 occurs, *-le* will not be interpreted as (past) tense

but instead be licensed as simply perfective aspect (i.e., *-le* will only be necessarily interpreted as past when there is the opportunity for it to be licensed as tense in a finite T⁰ position).

In support of the assumption that the subordinate clause in forms such as (84) is essentially without any tense specification, one can note that the temporal orientation of this clause is completely determined by the time/tense interpretation of the main clause predicate. Thus in (114) where the matrix verb *zou* 'to leave' in combination with *hui* 'will' necessarily refers to a point in the future, then the subordinate clause action must also be understood as occurring in the future. If, however, the matrix verb *zou* 'to leave' is understood to refer to a past time as in (115), then the verb in the subordinate clause *chi(-le)* 'eat-LE' must also be understood as having past time reference.

(114) wo chi-le fan jiu hui zou.
I eat-LE meal then will leave
'I'll leave after I've eaten.'

(115) wo chi-le fan jiu zou-le.
I eat-LE meal then leave-LE
'I left right after I ate.'

Structures of (84)/(114) and (115) therefore have the fully dependent status of English subordinate *-ing* clauses such as (116) and (117) and are best translated into English with clauses of this type:

(116) Having eaten, I will leave.

(117) Having eaten, I left.

In (116/117) just as in (84) the action of the subordinate clause must be interpreted as occurring at the same past or future time as the action of the main clause. Such a dependency can be suggested to result either from the complete absence of a T^0/TP in the subordinate clause in (84) (and therefore no possibility of an independent time specification), or perhaps from a T^0 head being present but obligatorily filled by some [-finite] specification essentially controlled by the main clause tense specification (i.e., a PRO-like non-finite tense, as e.g. suggested in Stowell 1996).

Consequently the assumption that the subordinate clause in structures such as (84) does not contain a +finite T^0 allows for a straightforward account of why *-le* may occur without necessarily causing a past time interpretation. I have suggested here that *-le* obligatorily instantiates +past only when there is a potentially +finite T^0 in a clause and it is actually possible for *-le* to be interpreted as past. If a clause either does not contain any T^0 position at all, or this T^0 can only be interpreted as -finite and necessarily dependent/controlled by a higher clause tense, then there simply is no possibility for *-le* to be interpreted as past and it will only be licensed as perfective aspect. It will therefore only be where there is a genuine +finite T^0 present in the structure that the possibility for *-le* to be interpreted as past actually arises and is now made obligatory.

Note that an important component of such an explanation of (84) is the suggestion made earlier in section 6.1.3 that overt lexical morphemes such as *-le* are

essentially just lexical hosts for the semantic features which really encode meaning in any structure. It was suggested that semantic/functional features are critically *added* to elements such as *-le* in the lexicon and that the lexical host and the features which it carries are subsequently inserted into syntactic structure together. Such a view essentially assumes that overt lexical morphemes may not *inherently* instantiate a meaning (such as +past for example), but instead acquire this meaning via a compositional process in the lexicon where functional/semantic features are added to the morpheme, and the morpheme is effectively just a physical carrier/host for the relevant features. Most frequently this process of combining features and a particular host will be almost automatic as certain morphemes are understood as having fairly constant meanings. However, during the course of language change there may be periods in which a certain set of features is only optionally added to a particular morpheme in the lexicon and this morpheme may consequently only optionally be understood to instantiate a certain meaning. Here in the case of *-le* it has been argued that *-le* has come to instantiate not only perfective aspect (and possibly sometimes completive aspect) but also past tense. What this is taken to mean in formal terms is that real functional-semantic features encoding +perfective and +past are regularly combined with *-le* in the lexicon resulting in its constant +perfective +past interpretation, and the morpheme *-le* has been constantly been described as 'instantiating' past/perfective aspect. In such an approach in which functional-semantic features and their physical hosts/carriers are combined together before insertion into syntactic structure and the functional-semantic features are

assumed not to be a *fully inherent* part of the lexical host, it can be argued that the relevant features are combined with their natural specified hosts *only wherever this is possible*. In the case of *-le* this means that +past features will be combined with *-le* only where there is a possibility for *-le* to instantiate a past tense meaning, hence only where there is a genuine +finite T⁰ also present in the sub-part of the numeration linked to a particular structure (e.g., a subordinate clause).

Such a view essentially sees overt lexical morphemes as carriers of certain meanings rather than actually inherently communicating those meanings. Naturally in most cases there will be a very close even automatic association of a morpheme with a certain meaning, but the approach also allows for change to occur and for a morpheme to only optionally instantiate a certain meaning when it is used. In support of such a general view and as a further clear example of the active combinatorial process suggested to take place between lexical hosts and feature-sets, I would like to mention briefly the interesting case of yes/no question morphemes in Egyptian Arabic.

As noted in Wahba (1984) and Demirdache (1991) in Egyptian Arabic yes/no questions are signaled by the occurrence of a pronoun in sentence-initial Comp position as seen in (118a/b) and (119a/b) taken from Wahba:¹⁹

¹⁹ The same strategy also occurs with *wh*-questions. I only include examples of yes/no questions as these are enough to illustrate the point to be made.

- (118) a. Mona ablit il-talamiiz
 Mona met the-students
 'Mona met the students.'
- b. hiyya Mona ablit il-talamiiz ?
 she Mona met the-students
 'Did Mona meet the students?'
- (119) a. il-talamiiz ablu Mona
 the-students met Mona
 'The students met Mona.'
- b. humma il-talamiiz ablu Mona ?
 they the-students met Mona
 'Did the students meet Mona.'

As these pronouns clearly specify the questionhood of the sentences they occur in, it can be assumed that in questions they carry a +Q feature specification into Comp (otherwise Comp/C⁰ would not be interpreted as +interrogative). Significantly in other non-question contexts such elements occur fully regularly as simple non-clitic pronouns and do not give rise to any +interrogative interpretation. What this consequently indicates rather straightforwardly is that in questions some additional +Q feature specification is *added* to the pronouns as lexical hosts before they are inserted into the syntactic structure, and the pronouns simply serve as specified hosts for the +Q feature set on certain (+interrogative) occasions. Furthermore it can be noted that this combination of +Q features with a pronoun in questions must be a productive and active process. Supposing there were to be just a single pronoun type used to signal a yes/no question, it could be argued that such an element might have

been grammaticalized with +Q features as a distinct entry in the lexicon. However, from (118b) and (119b) it can be seen that the pronoun occurring as the +Q morpheme actually varies according to the subject of the sentence. If the subject is feminine singular, the pronoun used will be *hiyya* 'she' (example (118b)), whereas if the subject is masculine plural as in (119b) this will trigger a different pronoun question marker *humma* 'they.' This suggests then that there is indeed an active combinatorial process in the lexicon precisely as suggested, and certain specified lexical hosts may have additional functional-semantic features actively added to them when this is required to encode a particular interpretation. In Egyptian Arabic +Q features are optionally added to a pronoun in the lexicon when a +interrogative interpretation is required.

Turning back to *-le* then, it can be argued again that past tense features are formally distinct from *-le* and not an inherent encoding but combined with *-le* as a physical host wherever this is possible. In a numeration in which there is no +Finite T^0 which could license past tense features carried by *-le*, the past tense features will simply not be added on to *-le* in the lexicon and *-le* will just instantiate perfective aspect. Ultimately then, careful reflection and re-consideration does indeed allow for a principled account of the non-past interpretation of *-le* in the subordinate clause of cases such as (84), and such an account is significantly fully compatible with the basic assertion that *-le* is in other instances a genuine instantiation of past tense.

6.2.3.5 Imperatives

The next of Li & Thompson's objections to an analysis of *-le* as tense to be briefly re-considered here is the occurrence of *-le* in imperative sentences such as (85). As there is no past time interpretation in (85) it is suggested that *-le* cannot be past tense:

- (85) he-le ta
 drink-LE it
 'Drink it!'

Concerning such cases, I will adopt the basic approach outlined for the subordinate clause case above and suggest that *-le* cannot be licensed as past tense here in (85) because imperative sentences are reduced clausal structures and there simply is no +Finite T⁰ present in the structure to license *-le* as past tense. In fact, it can be suggested that there is also no (Im)perfective aspect projection present in imperative sentences. Closer investigation of the occurrence of *-le* in commands reveals that verbal *-le* can only combine with Lü's (1980) 28 verbs (see footnote 8). These 28 verbs are argued previously to be the only verbs that can combine with *-le* to give rise to a purely resultative (completive) interpretation. This suggests that the verbal *le* which occurs in imperative sentences is in fact only the instantiation of inner completive aspect and not outer perfective aspect, as otherwise *-le* should be able to occur with the whole range of verbs which elsewhere allow for perfective *-le*. As examples (120) and (121) show, this is however not possible.

(120) *qu-le Beijing
go-LE Beijing
'Go to Beijing.'

(121) *xue-le zhei-ge zi
study-LE this-CL character
'Learn this character!'

Consequently, if no T^0 node and no $Asp_{\text{viewpoint}}$ node occurs in imperative structures, past tense features will not be added to *-le* when taken from the lexicon, and *-le* will not be interpreted as past tense (or perfective aspect). Note that such an assertion can be suggested to be generally plausible, as cross-linguistically tense does not seem to occur in any imperative sentences.

6.2.3.6 Matrix *jiu* sentences

The final case noted by Li & Thompson where *-le* occurs without necessarily resulting in a past time interpretation is (86) repeated below:

(86) mingtian wo jiu kaichu-le ta
tomorrow I then expel-LE him
'I'll expel him tomorrow!'

Whereas with other cases of matrix clause use *-le* seems to automatically result in a past time interpretation, here (86) naturally refers to a future event and so might seem to falsify the hypothesis that *-le* encodes +past wherever this is possible. As (86) is obviously a non-imperative matrix clause it must be assumed that a +Finite T^0

is indeed present in the structure and it is not possible to suggest that any subordinate or reduced clausal status is responsible for the possible non-past interpretation. (86) would therefore seem to constitute a serious potential counter-example to the *-le-as-past* hypothesis.

Considering rather carefully what allows for the non-past interpretation in (86), I believe that a plausible and interesting explanation can in fact be offered for this otherwise exceptional non-past occurrence of *-le* in a non-subordinate clause. Essentially it is the critical addition of the element *jiu* 'then' in (86) which facilitates the non-past interpretation, as a future-oriented adverb such as *mingtian* is otherwise not sufficient to make available a future time interpretation, as was shown earlier in (75):

- (75) *wo mingtian (hui) zai Beijing canguan-le Gugong
I tomorrow (will) in Beijing visit-LE Imperial Palace
intended: 'Tomorrow I will visit/will have visited the Imperial Palace.'

There is consequently something in the element *jiu* which is highly relevant here. Focusing on the importance of *jiu* in allowing for the non-past interpretation, I believe that an account of the patterning can now be given which significantly supports the central contention that *-le* both commonly instantiates tense and that such an interpretation is formally licensed via LF movement to a higher T^0 position. Quite simply I would like to suggest that (86) is very much like a covert instance of the *do*-support phenomena which occurs in English in the presence of negation, here the blocking element being *jiu* rather than negation.

In English it is currently assumed (e.g., Chomsky 1993, 1995) that finite verbs are base-generated together with a tense specification/suffix and that tense features are licensed/checked only at LF when the verbal complex/its feature-set raises up to T^0 . It is also well-observed that sentential negation may not combine with a finite verb as illustrated in (122), and that *do*-support is necessary to save such a combination, as shown in (123):

(122) *John not walked home/*John walked not home.

(123) John did not walk home.

Structures such as (122) are assumed to be ungrammatical because the presence of negation as an X^0 -head intervening between T^0 and V^0 prevents the tensed verb/its tense features from raising up to be checked in T^0 at LF, such a movement hypothetically violating the Head Movement Constraint. In such instances the tense features are therefore base-generated directly on the dummy element *do* in T^0 and LF movement occurs.

Turning to examples such as (86), the same mode of explanation can be offered for the fact that the presence of *-le* does not necessarily give rise to an interpretation of past tense in such cases. Remember that it has been argued that past tense features are added to *-le* wherever possible and licensed/checked against a +finite T^0 via LF raising. If it is now suggested that the element *jiu* is a head element occurring between T^0 and V^0 , it is expected that *jiu* might indeed block the LF raising of the verb and *-le* to tense. I would like to suggest that this is indeed what

happens in (86) and that when *-le* cannot raise up to T^0 a (phonologically covert) tense specification is independently base-generated in T^0 precisely as in cases of English *do*-support in the presence of negation.²⁰ Because such a tense specification will not be licensed by *-le*, it is therefore possible for this tense to be either past or non-past, accounting for the possible future orientation found in examples such as (86). *Le* itself, when it cannot be licensed as past tense, will then only have perfective features added to it prior to insertion and raise up to Asp_1P (*jiu* can therefore be assumed to be higher than Asp_1P but lower than TP). In this sense *-le* will be effectively used and interpreted in the same way as in cases such as (84), i.e., just as perfective.²¹

In further support of such a possibility, there is also interesting evidence from tone sandhi patterns in Taiwanese showing that the direct equivalent morpheme to Mandarin *jiu* syntactically is indeed an X^0 -head element rather than an XP in specifier position. As argued in chapter three, X^0 -heads which followed by tonic

²⁰ I do not attempt to go into the challenging question of why the base-generation of features directly in T^0 is not always/elsewhere used and only occurs as a means to save a derivation which would otherwise crash. I will simply assume that whatever explanation allows for such a possibility to occur in English with *do*-support may also apply in Chinese with a covert counter-part to *do*.

²¹ Such an approach to *-le* leads one to expect that it should be possible for *-le* to occur as simple perfective aspect if another element instantiates the T^0 position. This prediction is borne out and one finds that *-le* may indeed co-occur with a future modal such as *hui* 'will' or *yao* 'will/want to' in T^0 , as in (i):

- (i) women mingtian hui/yao kaichu le ta.
 we tomorrow will fire LE him
 'We will fire him tomorrow.'

One also further expects that other heads lower than tense and higher than $Asp_{viewpoint}$ may block the possibility for *-le* to be licensed as past tense and therefore allow for *-le* to be interpreted as just perfective aspect. As example (ii) below shows, the head *ye* 'also' patterns as expected and allows for *-le* to legitimately occur as simple perfective aspect in non-past interpretations:

elements undergo tone sandhi and elements in specifier positions do not exhibit any tone changes. Regarding the element *toh* (Mandarin *jiu*), critically this element does undergo tone sandhi clearly suggesting that it is a syntactic head rather than a specifier.²² This is shown in (124) where a bolded dot following a syllable indicates that the syllable undergoes tone sandhi:

- (124) Goa bin•-a•-chai toh• khi• chhoe• lin• lau•su.
 I tomorrow then go look-for your teacher
 'I'll go see your teacher tomorrow.'

Such a patterning would consequently seem to add good support to the hypothesis that Mandarin *jiu* may well block LF verb-raising due to having an X⁰-head status.

Example in (124) also has further potentially revealing information. Earlier it has been noted that simple adverbs such as *mingtian* 'tomorrow' may not combine with *-le* on the verb, as seen in (125):

-
- (ii) women mingtian ye kaichu le ta!
 we tomorrow also fire LE him
 'We'll also fire him tomorrow.'

²² If the analysis in Taiwanese tone sandhi proposed in chapter 3 is on the right track, simple adverbs in Taiwanese will have to be assumed to be in the head position. This is different from Cinque (1999), in which the adverbs are Specifiers of related functional heads. Since Specifiers are maximal projections and some adverbs are consistently single-worded and can not be further modified, I do not see any good reason that adverbs should be all assumed to be maximal projections (which are potentially consisted of specifiers and complements) in Specifier position. I believe certain adverbs are projected directly in the head position, although the others are Specifiers (and probably some of them could even have either option). I regret that I can not be clearer about this. It should be noted that if the tone sandhi phenomenon in Taiwanese can be taken to be structure-sensitive as proposed, probably it can be a test for distinguishing X⁰-adverbs and XP-adverbs.

- (125) *Zhangsan mingtian qu-le Beijing
 Zhangsan tomorrow go-LE Beijing
 intended: 'Zhangsan will go to Beijing tomorrow.'

The simple explanation for this was that *-le* instantiates past tense here and this is incompatible with the future time phrase *mingtian*. Now, supposing that *mingtian* were to be an X^0 -head element similar to *jiu* and that *mingtian* could occur located structurally lower than T^0 , one might expect that it would also block LF raising of the verb and therefore allow for *-le* to occur licensed as simply perfective in the same way that *jiu* does. This would then in theory allow for tense features to be base-generated on a covert *do*-equivalent in T^0 and (125) might be expected to be acceptable with a future time orientation. Although it is not fully clear where *mingtian* might be base-generated, it certainly is possible for *mingtian* to occur linearly following *hui* 'will,' which itself might indicate the location of T^0 , as in (126):

- (126) wo hui mingtian qu Beijing
 I will tomorrow go Beijing
 'I will go to Beijing tomorrow.'

If it is therefore perhaps possible for *mingtian* 'tomorrow' to be base-generated lower than T^0 one might anticipate that sentences such as (125) should be acceptable with a future time reference, as suggested. However, interestingly the example (124) shows that phrases such as 'tomorrow' in Taiwanese (bin-a-chai) behave as specifiers rather than heads and their final syllable does not undergo tone sandhi in sharp contrast to

toh, the equivalent to *jiu*.²³ If it is not unreasonable to imagine that the phrase signaling 'tomorrow' in Mandarin and Taiwanese might have a similar syntactic status, then this automatically allows for an account of why *jiu* but not *mingtian* allows *-le* to co-occur with it and why it may have an exceptionally non-past interpretation here, a patterning which otherwise remains quite mysterious.

Suggesting then that a *do*-support type treatment of *-le* in sentences with a matrix *jiu* is indeed able to provide an account of examples such as (86) which is also fully in line with the general analysis of *-le* and its licensing, ultimately it turns out that all of the objections to an analysis of *-le* as instantiating past tense have now been successfully answered. Consequently it does in fact seem possible to maintain the central contention of section 6.2.1 and conclude that the morpheme *-le* has developed from a marker of completive aspect not only into perfective aspect but subsequently has also come to instantiate past tense wherever such an interpretation is possible in a structure. Although such a suggestion might initially have seemed somewhat speculative, close examination of the arguments against a tense analysis of *-le* and a consideration of the environments in which *-le* seems to occur without a

²³ The equivalents of time phrases such as 'tomorrow,' 'today,' 'yesterday,' etc. in Chinese can be easily taken to be maximal projections (most likely nominal projections), and probably they can occur in specifier position. For example, they can occur in subject and object position, as shown in (i):

- (i) a. mingtian yiding shi meihaode yi-tian.
 Tomorrow certainly be wonderful one-tay.
 'Tomorrow must be a wonderful day.'
- b. buyao huinian zuotian. yao ba xiwang fang-zai jintian.
 Don't commemorate yesterday should BA hope put-at today.
 'Don't just commemorate yesterday; you should place your hope in today.'

past interpretation has actually led to a confirmation of the *-le*-as-tense hypothesis. Such a hypothesis has however been shown to be more complex than just a simple equation of *-le* with tense and it has been suggested that *-le* is a morpheme which may indeed encode more than just a single interpretation. In the course of the investigation and in order to provide a principled account of the full complexities of the patterning, the analysis has arrived at a number of interesting conclusions. One of these is the important assumption that lexical morphemes act as simple physical hosts for functional-semantic features and that lexical morphemes are actively combined with such features in the lexicon. While this combination operation may quite frequently be semi-automatic, critically the assumption that features and morphemes are formally distinct objects allowed for the suggestion that in periods of diachronic change the combination operation may be either optional or even blocked by other interfering factors. Such a possibility then permitted a fully explicit account of a wide range of non-random constraints on the distribution and interpretation of *-le*. One part of this included an explanation of the interaction of the adverbial element *jiu* with *-le*, and it was seen that a plausible comparison with *do*-support and negation quite naturally led to an analysis which seems to fully support the assumption that *-le* and other suffixes are indeed licensed via covert LF raising to a relevant licensing head. Finally, it can be noted that evidence from Egyptian Arabic presented in (118)-(119) has added strong support for the idea that the combination

Although it is not clear where *mingtian* 'tomorrow' is generated in (125), the contrast between time phrases such as *mingtian* 'tomorrow' and short adverbs such as *jiu* 'then' is clear. Time phrases are maximal projections and simple adverbs (most likely) are X⁰-elements, and thus the former does not exhibit tone change in the final syllable while the latter undergo tone change (in the final syllable).

of functional features and lexical host material is indeed an active and productive process. Before closing here it can be pointed out that this has a significant wider relevance. In chapter 5 it was argued that lexical V₂ elements are combined with V₁ main verbs as aspectual suffixes, and while there were many good arguments in favor of such an approach, it still might be objected that potential V₂ elements such as *ganjing* 'clean' would seem to be lexical descriptive morphemes rather than grammaticized functional suffixes. The idea supported by the Egyptian Arabic patterns that functional features are added to lexical hosts converting them into primarily functional types is now able to make better intuitive sense of the claim that V₂ elements are used as functional suffixes. Just as pronouns in Egyptian Arabic occur as host elements for +Q features and so take on the role of question-markers, it can be argued that lexical V₂ elements with clear descriptive properties are actively combined with completive aspect features in the lexicon and that it is this productive combination process which then allows the range of V₂ elements to occur licensed as functional suffixes.

6.3 Summary

I close the chapter here with a short summary of the main points argued for. The chapter began as an attempt to understand the origin and development of verbal *-le*. Largely because of the completive meaning of *liao/le* and its re-positioning adjacent to the verb at a time when other V₂ elements also became right-adjacent to the verb, it was concluded that *liao/le* initially instantiated completive aspect. It was then

noted that *-le* often appears to have a different function in Modern Chinese and occurs together with other overt V_2 -completive elements. In order to account for this, I adopted Smith's (1997) two-tiered approach to aspect and suggested that since its initial grammaticalization, *-le* has developed from being a completive aspect marker to instantiate structurally higher perfective viewpoint aspect, a view which accords with common synchronic perceptions of *-le*. I then attempted to provide a formal modeling of this hypothetical change of *-le* from completive aspect to perfective aspect and argued for a development of the approach to grammaticalization introduced in Simpson (1998) and assumed in chapter 2 for *ge*. Whereas this approach was initially intended to account for the re-analysis of free-standing morphemes, the current chapter has argued that *suffixes* are significantly also subject to highly similar (further) grammaticalization and re-analysis, and that the model of grammaticalization initiated for free morphemes can be naturally developed to account for this. Importantly it was argued that grammaticalization and re-analysis in *both* free *and* bound morpheme cases is critically movement-dependent and results from raising of an element upwards in the functional structure dominating a lexical projection to successively higher positions. In the case of the hypothetical re-analysis of *-le* this was argued to have the further significance that it strongly supports the Minimalist view that functional affixes are base-generated together with their lexical host and then licensed via movement to a functional head, such movement furthermore often being covert and taking place at LF (as with *-le*). Following this, in section 6.2.1, I attempted to account for other aspects of the

interpretation of *-le* and made the somewhat contentious speculation that *-le* has now developed further to instantiate past tense as well as perfective aspect. While such a possibility has been explicitly rejected in the literature, it was argued that this is largely due to the rather narrow view that overt morphemes must stand in a fully rigid one-to-one correspondence relation with a single meaning/function (such as past). Here it was suggested instead that functional meanings/interpretations are associated with morphemes as the result of an active combination process linking functional features and lexical hosts. In such a process it is possible both for a single morpheme-host to be combined with more than a single functional interpretation/feature (and therefore instantiate multiple functions), and it is also possible for the association of a particular function with a particular morpheme to be either optional or blocked in certain circumstances. Such assumptions and a careful re-consideration of the range of objections to an analysis of *-le* as tense then ultimately allowed for a full account of the distribution and interpretation of verbal *-le* and a principled defense of the hypothesis that *-le* instantiates tense. The chapter concludes that this past tense interpretation is significantly not random but actually determined by clear syntactic factors.

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