

The Syntax and Interpretation of Sentence-Final DE

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Considering the patterning of sentence-final de it is argued that this occurrence of de is currently undergoing a syntactic re-analysis. Cross-linguistic as well as Chinese-internal evidence suggests that the de in such structures was originally a determiner of category D, selecting a clausal complement and resulting in a DP nominalization in turn selected by the copula shi. Further evidence, including the apparently optional positioning of objects after de in northern dialects, then however indicates that de (in certain occurrences) is being reanalyzed as a past tense morpheme of category T. It is argued that this ongoing creation of a new tense suffix from a determiner source naturally reflects the common reference-giving property of the functional categories D and T in clauses and their nominal counterparts.

1. The shi...de construction

This paper sets out to investigate the syntactic and categorial status of the element de found in clause-final position, as in (1), and attempts to account for the alternation found in northern dialects where the object appears positioned after de as in (2):

- (1) wo shi zuotian mai *piao* de
I BE yesterday buy ticket DE
'It was yesterday that I bought the ticket.'
- (2) wo shi zuotian mai de *piao*
I BE yesterday buy ticket DE
'It was yesterday that I bought the ticket.'

Structures such as (1) have been the subject of a number of pieces of research in recent years, e.g. Chiu (1993), Huang (1982), Shi (1994) among others. There it is commonly

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noted that shi..de sentences consistently give rise to interpretations parallel to English clefts, that the focused element is always the element immediately following shi, and that this focus is most commonly an adverb or PP referring to the time or place where some event has occurred, as for example in (3):

- (3) ta shi zai Zhongguo xue Yingwen de
 he BE in China study English DE
 ‘It was in China that he studied English.’

Most research on the shi..de construction has centred itself on the focus properties of such sentences and has attempted to offer accounts of how the focus interpretation may be syntactically encoded. In general this has led to a concentration on the role of shi and various suggestions that LF movement of the focus may be involved. Comparatively little attention has been given to the role and status of the element de in the construction however, and to date there has not been any serious discussion of the alternation illustrated in (1) and (2). This paper suggests that a study of the role played by de and the apparently optional positioning of the object in (1) and (2) ultimately allows for a far better understanding of the shi..de construction as a whole.

2. Previous approaches to de

In earlier works on the shi..de construction there have essentially been two basic approaches to de occurring in clause-final position. The first, in Paris (1979) and Kitagawa & Ross (1982) assumes that de is used to form the *nominalization* of some clausal constituent/VP. In more recent studies such as Chiu (1993) and Shi (1994), de is largely ignored and simply classified as a ‘particle’, Shi in particular arguing that (this) de should not be analyzed as a nominalizer

Cross-dialectical evidence within Chinese would however initially seem to favour the ‘nominalization’ approach to de over other imaginable possibilities. First of all it can be noted that in Mandarin there are a number of elements which all have the same pronunciation de although deriving from different sources and having different syntactic properties - relative clause de, possessor/genitive de (4), potential de (5), descriptive-clause de (6), and resultative-clause de (7), and this existence of multiple different de’s might indeed initially allow for the suggestion that clause-final de in shi-focus sentences is simply just another type of de unconnected to the occurrences where it has been analyzed as a nominalizer:

- | | |
|--|--|
| <p>(4) ta de shu
 he DE book
 ‘his book’</p> | <p>(5) kan-de-jian
 look-DE-meet
 ‘is able to see’</p> |
|--|--|

- | | |
|---|--|
| <p>(6) ta zou de hen kuai
 he walk DE very fast
 ‘He walked very fast.’</p> | <p>(7) ta qi ma qi de hen lei
 he ride horse ride DE very tired
 ‘He rode a horse until very tired.’</p> |
|---|--|

However, a survey of non-Mandarin Chinese dialects/languages interestingly reveals that the morphemes all pronounced de in (1-7) in Mandarin are consistently split up and grouped in a different way. In Cantonese, Taiwanese and Shanghainese, the morphemes corresponding to de in shi..de equivalents, relative clauses and possessor structures such as (8) all have a single pronunciation, whereas those corresponding to de in potential verb constructions, descriptive and resultative clauses (5), (6) and (7) are pronounced quite differently. This would then seem to indicate that it might indeed be correct to group clause-final de together with the ‘nominalizer’ de found in headless relative clauses such as (8) below, and therefore justify the suggestion that sentence-final de is a nominalizer:

- (8) ta baba shi [zhong di]-de
 he father BE sow field DE
 ‘His father is a farmer/one who sows the fields.’

The pattern observed in Cantonese, Shanghainese, Taiwanese and Mandarin is also repeated in other non-Sinitic languages adding further support to the clause-final de-as-nominalizer hypothesis. In Japanese and Burmese a single morpheme is used to nominalize clauses as arguments, to encode a possessor relation, to create relative clause structures, and significantly also results in interpretations parallel to those in the shi..de construction when occurring clause-finally with a copula.¹ The fact that this same grouping re-occurs again in other genetically-unrelated languages cannot be sheer coincidence and strongly supports the idea that there is indeed a strong connection between the de used as a relativizer/nominalizer and the de occurring in the shi..de construction, suggesting that they are in fact be the same element. The nominalizing function of no in Japanese and taa in Burmese is also particularly clear - in both languages these elements equivalent to Mandarin de occur followed by case-markers. Furthermore in Japanese, the copula desu/da may not occur with a verb/VP unless there is also a nominalizing no present, indicating that no in shi..de-equivalent structures really does function to nominalize the clause.

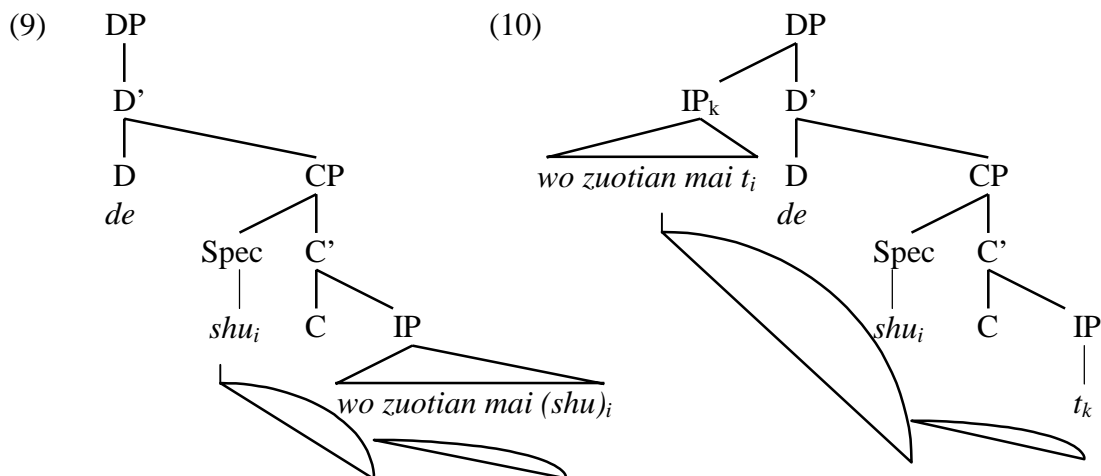
If cross-linguistic evidence together with patterns found in non-Mandarin dialects does then seem to indicate that de in the shi..de construction is a nominalizing morpheme, one next needs to ask what it means to call some element a ‘nominalizer’, as such a term does not refer to any type of clear syntactic category in itself, and along with the term ‘particle’ appears to be formally rather vague. In Simpson (1997) and (1998), the

¹ The Japanese element no occurs in headless relative clauses, head-internal relative clauses and children’s headed-relatives, but then disappears from adult headed relative clauses - see Murasugi (1998) for details.

syntactic status of relative clause de, Noun-Complement Clause-de and ‘genitive-possessor’-de are re-examined in some depth and it is argued that:

- a) de in all these cases is a *determiner* instantiating the D position
- b) de selects a *rightward* CP clausal complement, in line with the general direction of complement selection in head-initial Chinese and Kayne’s (1994) LCA.
- c) (following Kayne 1994) in relative clauses the relativized noun/NP first raises to SpecCP; this is followed by movement of the IP remnant higher to SpecDP.
- d) the motivation underlying this latter movement is suggested to be that de is an enclitic determiner parallel to the enclitic definite determiners found in Romanian, Swedish, Buginese and Mokilese, triggering IP-movement to its Spec position for phonological support.

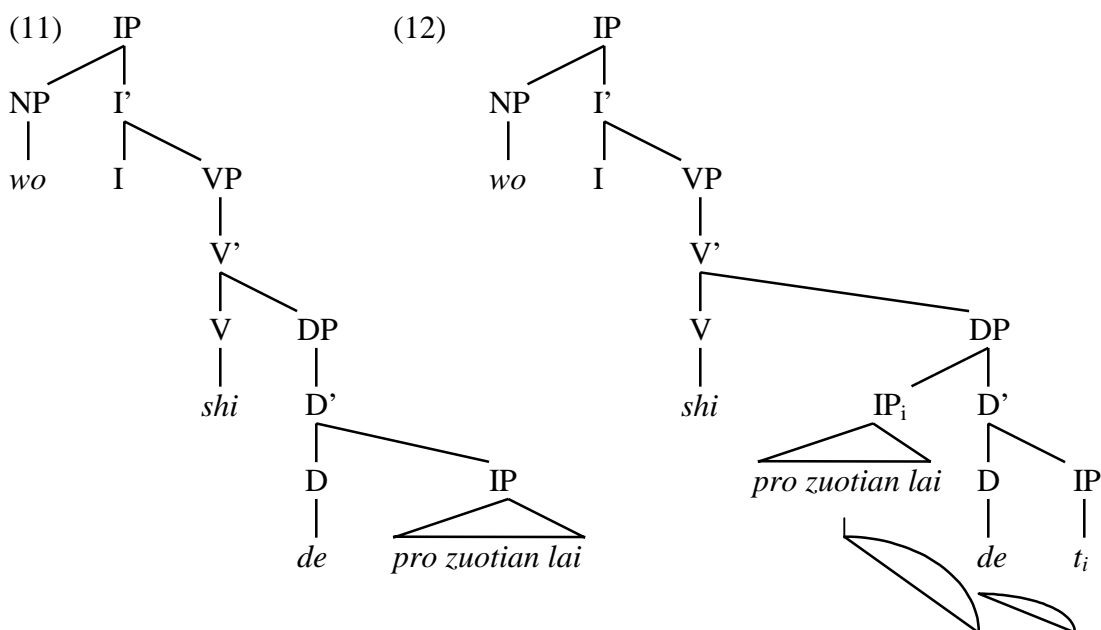
The derivation of a simple structure such as: *wo zuotian mai de shu* ‘the book I bought yesterday’ would then be as indicated below:



Reasons for analyzing de as a determiner are partly theory-internal and partly related to various cross-linguistic patterns observed. First of all, if one attempts to analyze relative clauses in Chinese in terms of Kayne’s more restrictive theory of relativization, the element de can in fact *only* be analyzed as a determiner in D^0 and cannot be taken to occur in C^0 (possibly the default standard assumption). Second, it is observed that a number of languages (e.g. Lhakota, Diegueno, Tzeltal) do indeed make use of clear determiners rather than complementizers to build relative clause structures, hence the analysis suggested for Chinese is in fact elsewhere attested. Thirdly, the suggestion that

de is a determiner allows for a natural formalization of the notion nominalizer - de as a D^0 selects a CP clausal complement and projects the nominal-argument category DP .²

Now, if clause-final de in the shi..de construction is in fact the same element as de in relative clauses, N-CP structures and possessor forms as suggested, one might assume that this occurrence of de should also be analyzed as an instantiation of D^0 with a similar underlying syntax. In such a view, de might be taken to select a rightward clausal complement and trigger raising of this clause to SpecDP as illustrated in (11-12):



However, while such an analysis receives support from all of what has been said thus far, there are in fact other independent reasons for thinking that it cannot be entirely correct. Specifically, there is a variety of evidence which argues against analyzing the string following shi as a DP. The first of this is that an adverb occurring to the left of shi (and hence by analysis external to the DP) may modify the event depicted by the verb inside the hypothetically nominalized clause to the right of shi:

- (13) zuotian wo shi [_{DP}[lai mai che]-de]
 yesterday I BE come buy car DE
 'Yesterday I came to buy the car.'

² A variety of additional arguments suggesting that de is an instantiation of D are provided in detail in Simpson (1997/1998).

Generally it is found however, that adverbs external to DPs cannot modify events depicted inside a DP; in (14), for example, it is not possible to understand yesterday as referring to the time when Bill betrayed Sue, only to the time of John's discussion:

(14) Yesterday John discussed [Bill's betrayal of Sue]

Secondly, it is found that *wh*-adjuncts such as *zenme* 'how' and *weishenme* 'why' are freely able to occur in the sequence following shi as shown in (15). Again, this is unexpected if this sequence is effectively the equivalent of a Complex NP, as CNPs do *not* allow such *wh*-adjuncts to occur inside them (16), (17):

(15) ni shi [_{DP}?[zenme/weishenme lai]-de]
 you BE how/why come DE
 'How/why did you come?'

(16) *(ni shuo) [_{DP} Deng Xiao Ping weishenme piping Meiguo]-de xiaoxi] bu hao?
 you say Deng Xiao Ping why criticise USA DE news not good

(17) * [_{DP}[ta zenme lai]-de shuofa] bu hao?
 he how come DE claim not good

Furthermore, it is actually possible to position these *wh*-adjuncts external to the posited DP-string following shi and for them to refer to the event depicted by the verb inside the 'DP', as in (18). This is not at all possible with genuine CNPs as (19) shows (19 is unacceptable if weishenme is taken to refer to to Mary's going to Beijing):

(18) weishenme ni shi [_{DP}?[zuotian lai]-de]?
 why you BE yesterday come DE
 'Why did you come yesterday?'

(19) *weishenme Zhangsan bu zhidao [_{DP} [Mali qu Beijing]-de xiaoxi]
 why Zhangsan not know Mali go Beijing DE news

Such a patterning is unexplained if one assumes that shi selects for a CNP in the shi..de construction and indicates that the DP analysis needs re-examination.

A third problem for the DP hypothesis concerns the alternate positioning of the *object* relative to de found in northern dialects and shown in cf examples (1) and (2). If the string following de is indeed a CNP, then extraction and rightward movement of the object out of this constituent in (2) is expected to give rise to a Subjacency violation, yet sentences such as (2) are fine.

Therefore, despite the initial rather plausible idea that the post-shi string in the shi..de construction is a nominalization structure, it now might seem that such an account may not in fact be tenable. In section 3 we re-investigate the syntax of shi..de structures, this time paying particular attention to the object positioning phenomena noted above and argue that the patterning found leads to the conclusion that the shi..de construction is currently undergoing certain syntactic re-analysis. This reanalysis process is then suggested to be directly responsible for the apparent contradictions in behaviour which have been observed here, namely the fact that cross-linguistic evidence indicates that the shi..de construction does incorporate a nominalized clause, yet the posited nominalization does not seem to pattern in ways which would be expected of such a structure.

3. Object positions, de and the interpretation of shi..de structures

In order to approach the question of how the object comes to be optionally positioned after de, we will actually begin with a fuller characterization of the meaning of the shi..de construction and make more precise what we believe is the structure of the original nominalization form.

3.1 Focus and Presupposition in shi..de sentences

As noted frequently in the literature, the shi..de construction is in many ways equivalent to cleft sentences in English, with a clearly focussed constituent (linearly following shi) set off against the background of a strongly presupposed event. For example, (20) below might typically be used when a speaker is explaining the obvious fact that he/she has recently arrived, providing the new focussed information that this arrival occurred on the preceding day:

- (20) wo shi zuotian lai de
 I BE yesterday come DE
 'It was yesterday that I came.'

The fact that the basic identity of the event in shi..de sentences is necessarily known to both speaker and hearer essentially means that something in shi..de forms in a sense functions to make the event *definite* (i.e. the event has the property of being unique and identified and presupposed). An important question to be answered is then what particular part of the shi..de construction is actually responsible for such a definite-like interpretation?

An initial suggestion might be that it is the element de which gives rise to the 'definiteness effect', de having already been identified as a *determiner* in D. However, elsewhere in other environments such as relative clause structures the determiner de is *not* found to give rise to any necessary definiteness readings and an NP with a de-headed relative clause may indeed be interpreted as fully indefinite. The conclusion is therefore

that de itself does not have any inherent definiteness specification and hence cannot be solely responsible for the occurrence of such an interpretation when found in shi..de sentences. Below we would like to suggest that it is rather de in combination with some other element which critically results in the definiteness interpretation.

When a structure was first suggested for shi..de sentences in (11/12), we automatically assigned a form in which de as a determiner was taken to select for a clausal complement, in line with the analysis of relative clauses shown in (9/10). However, one might in fact entertain the possibility that there is more to the structure than set out in (11/12). Specifically, one might wonder whether such structures are really fully ‘headless’ or whether they might in fact contain a phonetically null noun selecting for a CP clause like other CNPs such as: *the fact that...*, *the news that...*, *the claim that...* etc. Given the strong attachment to the discourse *context* which shi..de sentences have often been noted to have (e.g. by Chao 1968, DeFrancis 1963), there is indeed an obvious hypothetical candidate for a head-noun here - one with a meaning such as ‘situation’, i.e. ‘*the situation (such) that...*’ instantiating a direct link to the context. A suggestion along these lines is indeed to be found in Kitagawa & Ross (1982) and is significantly supported by certain overt evidence from the wider cross-linguistic paradigm.

Neighbouring Burmese is a language which not only has fully parallel shi..de-type structures but also more explicit information on the morphological make-up of such forms. First of all in its relative clauses, Burmese is found to use an element teh which is the direct equivalent of Mandarin de and arguably of category D. Similar to Mandarin de though, teh does not encode any definiteness value of its own. Considering now equivalents to the shi..de construction, significantly one finds that it is *not* in fact teh which appears, but a form pronounced as taa:

- (21) dii-nee weh taa paa
 today buy TAA pol.
 ‘It was today that I bought it.’

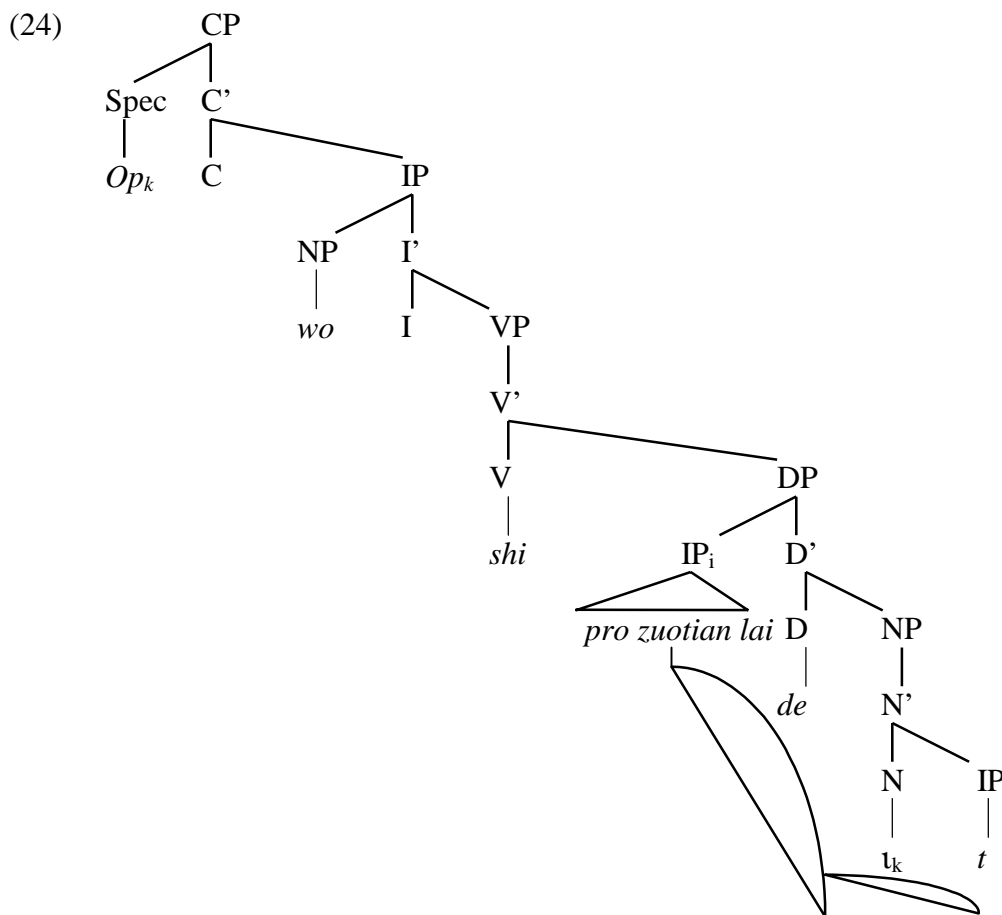
taa can however be analyzed as consisting of two separate parts, the first of which is in fact the determiner teh. The second part to taa is an element haa which elsewhere occurs as a dummy noun in the complex demonstrative form daa meaning ‘this one’ (daa is the optional collapsing of dii haa, where dii is a demonstrative adjective meaning ‘this’):

- (22) dii haa ‘this (one)’ | daa ‘this (one)’

- (23) teh + haa | taa = ‘de’ in shi..de equivalents

So, as relative clauses formed with bare teh may be indefinite in reference, but shi..de equivalents formed with teh + haa necessarily give rise to the same definiteness-type

interpretation found in Chinese shi..de forms, it would seem that it is critically the addition of the dummy noun haa which results in the definiteness reading. The definiteness interpretation may be said to arise via binding of haa by a discourse operator possibly located in SpecCP, haa being a ‘situation’ type N-head tied to the discourse situation much as suggested in Kitagawa & Ross. This evidence that the equivalent to de in Burmese shi..de constructions is morphologically complex now allows one to suggest that a parallel but phonetically-null discourse-related head-noun is in fact also present in Mandarin shi..de forms, and that a more correct representation of the nominalization hypothesis should be as in (24) below:



This more articulated structure in (24) is arguably better able to account for those aspects of the interpretation of shi..de forms just noted. It does however remain a nominalization structure and as such appears to leave unaccounted for the patterns noted earlier which militate against a CNP structure, i.e. *wh*-adjunct positioning, adverbial construal and

object placement. We therefore now return to consider the problem of the object/de interaction in order to try and uncover more of the underlying syntax of shi..de forms.

3.2 Object/Verb Ordering in shi..de

Considering the alternation found in (1) and (2) schematically simplified in (25), there might seem to be two ways of analyzing the positioning of the object relative to de:

- (25) a. V - Ob - de
 b. V - de - Ob

Given that the order in (a) is found in all Chinese dialects, while that in (b) is rather more restricted, it is fairly natural to assume that the more basic (b) ordering should somehow be derived from that in (a). The first obvious possible way of relating (b) to (a) is then to suggest that the object in (a) undergoes movement over the verb to its clause-final surface position in (b). Simple reflection reveals however that such a possibility is unlikely to be right. Rightward object extraposition of this kind is cross-linguistically observed to occur predominantly when an object is either heavy or focussed, as e.g. in Heavy NP Shift in English or finite clausal extraposition in Hindi and German (under traditional analyses):

- (26) John gave t_i to Mary [everything he possessed]_i/*it_i

In shi..de constructions when the object occurs following de, it is however neither necessarily heavy nor focussed; on the contrary, a post-de object may *not* in fact be focussed as the focus must always immediately follow shi. Furthermore a post-de object is by preference *light* rather than heavy for the following reason - if the focus is the element immediately following shi, then a post-de object will be part of the presupposition and so necessarily old information; as such, it will normally be represented by a simple bare NP rather a long descriptive form of the type which might naturally occur when an NP is introduced for the first time as new information. Informants furthermore indicate that when the object is a clausal complement and necessarily somewhat heavy, they actually prefer for it to be placed before de rather than 'extraposed' over de (although a post-de positioning is not said to be ungrammatical).

If the object then does not move rightward over de, a second possibility is to suggest that it is de which changes its position, moving leftwards from a base-generated clause-final position. Given the enclitic properties that de is commonly noted to have, this movement could be naturally understood to result from cliticization. In such an approach, one critically needs to ascertain where de might be moving to and what type of host-element it would be targeting as a clitic. We would like to suggest that the correct generalization resulting from a consideration of further data is that de is not simply

undergoing movement over the object but is actually raising to cliticize to the verb in shi..de sentences, and that this is the reason why it ends up linearly preceding the object.

Critical evidence in favour of the verb-cliticization hypothesis comes from the patterning of Double Object Constructions (DOCs) in shi..de sentences. Significantly it is possible for the order in (27) to occur, with de preceding both direct *and* indirect object:

- (27) wo shi zuotian gei de tamen san-ben-shu
 I BE yesterday give DE they 3.CL.book
 ‘It was yesterday that I gave them three books.’

This importantly shows both that de is not attaching as any second-to-last-position clitic element (a third possible explanation for its distribution) - here it occurs preceding two sentence-final elements - and that it is incorrect to describe the V-de-Ob patterning as simply resulting from movement of the object over de as here *two* elements are found following de, not just the object. Rather, it would seem that de is in fact undergoing movement from a clause-final position to attach itself specifically to the verb.³

If it is indeed correct that de is targeting the verb in particular, one next needs to ask what kind of verb-related clitic de might actually be. The patterning would seem to suggest that some type of *re-analysis* is occurring, as it would clearly odd to posit that de as a *determiner* is being attracted to the verb - determiners are nominal-oriented elements and do not occur incorporated into verbal clusters. We would therefore like to argue that de is currently undergoing reanalysis from category D to category T and is in the process of becoming a (*past*) *tense morpheme* base-generated as the head of a TP selected by shi.⁴ From its initial position in T⁰, de will then undergo movement to attach to the verb which occurs leftwards in the VP (itself raised to SpecTP; as shown in tree 33).

Not only will such a suggestion explain why de is specifically targeting a *verbal* element as a clitic host, there is further empirical evidence which strongly supports an approach along these lines. It has often been noted that there is a strong tendency to interpret the event described by the predicate in shi..de sentences as having taken place in the past. If de is present in example (28) below, this only seems to allow for a past time interpretation. Conversely, if de is not present, the sentence only permits a future-type interpretation (i.e. the event is guaranteed to occur at some point in the future):

- (28) wo shi gen Zhangsan qu Beijing (de)
 I BE with Zhangsan go Beijing DE

³ This suggested change from a sentence-final head-element to a verbal-clitic has a strong precedent in the way in which *verbal suffix -le* developed from the *sentence-final* full verb liao ‘to finish’.

⁴ Interestingly Chiu (1993) suggests that shi as the head of ShiP selects for a tensed clause in a similar way, but on the basis of a quite different set of arguments.

with de: ‘It was with Zhangsan that I went to Beijing.’
 without de: ‘It’s with Zhangsan that I’m going to Beijing.’

However, the strong favouring of a past time interpretation when de is present is in fact actually only a generalized conversational implicature, as it can still be over-ridden with the use of the future modal hui ‘will’ or cai-yao ‘only then will’ together with an adverb such as mingtian ‘tomorrow’:

- (29) wo shi mingtian ??*(hui) qu Beijing de
 I BE tomorrow will go Beijing DE
 ‘It’s tomorrow that I’m going to Beijing.’

Now we are able to add a crucial new piece of evidence to the general patterning here. Significantly it transpires that when de precedes the object and is by hypothesis attaching to the verb as an enclitic en route to becoming a verbal suffix, it is no longer possible to use modals and adverbs to over-ride the past time implicature any more and *only* a past time interpretation is possible in such a configuration:

- (30) *wo shi mingtian hui qu de Beijing
 I BE tomorrow will go DE Beijing

The patterning in (28) and (29) show that while a past time interpretation is strongly associated with the use of de, it still remains only an implicature which can be over-ridden with appropriate means. When de however shows signs of really becoming a verbal element and is suggested to undergo reanalysis as an instantiation of (past) Tense moving to cliticize to the verb, at this point it seems that the past time conversational implicature has actually become standardized and strengthened to the extent that it is now part of the genuine meaning of (verbal enclitic) de and can therefore no longer be over-ridden. The switch and reanalysis from a nominal-related element of type D to a verbal element encoding past tense would therefore seem to receive very strong support.

From a functional perspective, such a re-analysis process can also be suggested to have been considerably aided by two particular characteristics of the shi..de construction. First of all, it is common for the element shi to be dropped from shi..de forms, leaving only de and stress on the focussed element as indication of the focus structure:

- (31) wo jintian kan-jian ta de
 I today see-meet he DE
 ‘It was today that I saw him.’

Omitting shi has the functional result of decreasing the expectation that the sequence following on from the subject/topic might be a DP/nominal element and so leaves such

strings more open to other types of (re-)analysis (i.e. as a TP). Secondly, as the object is frequently part of the presupposition and hence *old* information, it is often either fronted to topic position or instantiated by a null pronominal pro. The result of this is that shi..de forms are frequently attested both without shi and without an overt object, as in (32):

- (32) (nei-ben-shu) wo jintian mai-de
 (that-cl-book) I today buy DE
 ‘I bought it *today*.’

In natural and commonly-heard forms such as (32) the verb and de are then importantly heard *adjacent to each other* unseparated by any (overt) object. Such verb-de adjacency then clearly serves as a considerable functional assist in the process of reanalyzing de as a verbal suffix/enclitic. Coupled with the noted absence of shi decreasing the overall expectation of a nominal structure and the strengthening of the past time implicature, it is therefore not surprising that de should become reanalyzed as a past tense morpheme.

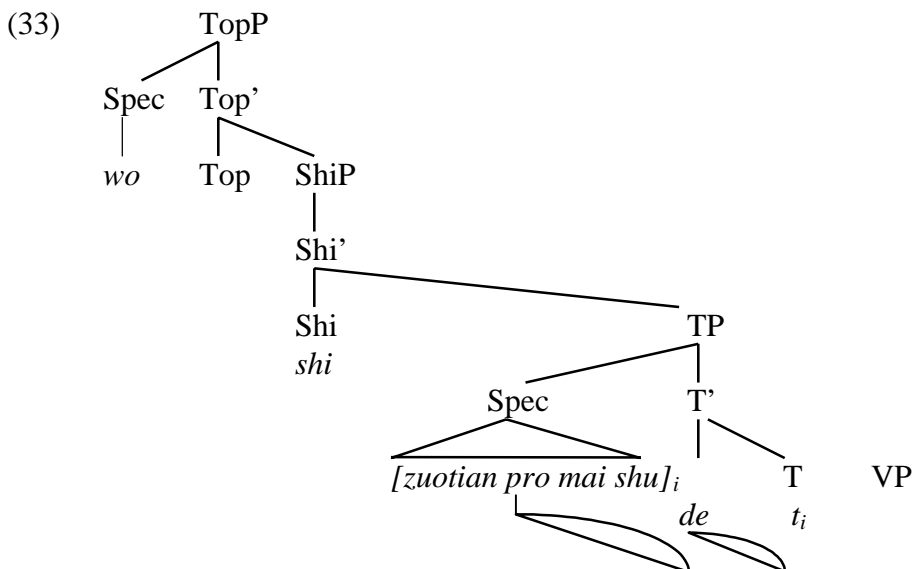
Syntactically, we would like to suggest that shi..de sentences with past time interpretation have the underlying form represented in (33) below, which should be compared with the pre-reanalysis tree in (24). In (33) D becomes re-analyzed as T, the predicate VP including a pro subject occurs raised to SpecTP, and the pre-shi NP [wo] ‘I’ is base-generated in a topic position.⁵ We further suggest that in the process of reanalysis, the dummy N complement of D⁰ shown in (24) is incorporated and *fused* into the D⁰ resulting in a new simplex collapsed form which is a simple T⁰. A result of such incorporation is that the definite-referential property of the discourse-topic-bound dummy-noun is re-interpreted as the verbal referential feature (past) tense.⁶

⁵ Support for placing the pre-shi NP in topic position and positing a pro subject in the sequence following shi comes from the fact that the sequence following shi may actually contain a discrete overt subject:

- (i) Lisi shi [Mali peng-huai ta-de-che]-de
 Lisi BE Mary hit-break her-car DE
 ‘It was Mary who smashed Lisi’s car.’

The projection headed by shi is simply labelled as ShiP following Chiu (1993). We would like to point out that the analysis of de developed here is also fully compatible with any of the various suggestions of LF focus movement proposed in Chiu (1993), Huang (1982) and also Shi (1994).

⁶ Support for the suggestion that the dummy noun is fused and incorporated into D comes from the richer overt paradigm in Burmese. As mentioned earlier, the Burmese equivalent to de in the shi..de construction is pronounced taa and is actually composed of two elements teh and haa. The first element teh occurs in relative clauses and is analyzed as a determiner without any definiteness specification, equivalent to de in Chinese relative clauses. The second element haa is a dummy noun which also occurs fused with the demonstrative dii ‘this’ in daa ‘this one/this’. However, whereas haa with the demonstrative element dii can optionally either occur fused with dii resulting in daa or be separate from the demonstrative as in dii haa, when the dummy noun haa occurs with teh in the equivalent to the shi..de construction it *cannot* be separated out into two discrete parts, i.e. the form *teh haa is not possible and *only* the fused form taa occurs. This can be taken to indicate that the dummy noun and the determiner element have indeed



3.3 Movement of de or Base-Generation as a suffix?

Before concluding this section, we would briefly like to comment on a possible alternative to the view that de undergoes syntactic movement from a T⁰-position to cliticize to the verb. Following Chomsky's (1995) proposals that most of inflectional morphology is actually attached prior to lexical insertion, it could be suggested that de is in fact *base-generated* on the verb as a *suffix*. However, while such an idea is certainly plausible on first sight, further critical evidence from the wider patterning of Double Object Constructions and the shi..de construction indicates that this such a view cannot be upheld for de (though it probably is true for verbal -le) and that de is indeed a syntactic affix attached to the verb via movement.

Earlier it was noted that in addition to a possible S-final position, de can also occur attached to the verb in DOCs as in (27), hence either: [V IO DO-de] as in (71) or [V-de IO DO] as in (66) repeated here:

- (27) wo shi zuotian gei de tamen san-ben-shu [V-de IO DO]
 I BE yesterday give DE they 3.CL.book
 'It was yesterday that I gave them three books.'

However, as well as the patterning illustrated in (27), it is also possible and common for de to be found *intervening* between the indirect object and the direct object as in (34):

collapsed into a single element and is precisely what we would like to suggest also occurs as part of the reanalysis process in Chinese.

- (34) wo shi zuotian gei tamen de san-ben-shu [V IO-de DO]
 I BE yesterday give they DE 3.CL.book
 ‘It was yesterday that I gave them three books.’

This might initially seem to go against the V-attachment analysis developed above, as here de seems to be attaching to the indirect object not the verb. However, in addition to the clear fact that the order in (27) with de enclitic on the verb is indeed possible, it is not implausible to assume that the order in (34) results from syntactic incorporation of the indirect object into the verb prior to de attachment. Elsewhere it has frequently been argued (e.g. Li 1990) that indirect object incorporation does (or may) take place in DOCs. If such a view can then be upheld, one can suggest that indirect object incorporation creates a complex *verbal* element which de may subsequently attach to as a verbal clitic. Such a patterning then constitutes rather strong evidence against any proposals of de-suffixation directly in the lexicon and no other approach would seem able to account for the fact that de can occur both finally, between the indirect object and direct object, and also attached directly to the verb.⁷

4. *wh*-adjuncts, adverbs and dual analyses

In this final section we would like to mention certain other consequences of the analysis proposed here. First of all, it was earlier noted that the occurrence and positioning of *wh*-adjuncts and adverbs in shi..de sentences seemed to provide evidence against a nominalization analysis of shi..de constructions. In particular we suggested that if the post-shi sequences in shi..de forms were CNPs, then it was odd that *wh*-adjuncts should be able to occur inside such structures and also that adverbs outside should be able to modify a predicate inside the CNP (examples (13,15,18)). The account which has since been developed largely on the basis of the object-placement and temporal interpretation patterns now offers an immediate solution to the adverb and *wh*-adjunct problem. In the present account, what was once indeed a CNP structure has been effectively reanalyzed as a TP, as in (33). Given that TPs do not constitute islands for extraction and freely allow the occurrence of in situ *wh*-adjuncts having scope outside TP, the patterning found with shi..de forms is no longer surprising - *wh*-adjuncts are fully acceptable in the post-shi string as this is in fact a TP rather than a CNP, and adverbs occurring to the left of shi may similarly be understood to modify a predicate to the right of shi precisely because extraction from a post-shi TP is indeed permissible.⁸

⁷ In order to account for the possibility that de may occur either directly attached to the verb or to the V+IO complex, one may suggest that indirect object incorporation is an optional in its occurrence, much in the way that Johnson (1991) and others have described the alternating orders of object and particle in English verb-particle constructions such as (i) and (ii):

- i) I picked the book up.
 ii) I picked up the book.

⁸ Or alternatively, TPs are not opaque to adverbial modification from higher position whereas CNPs are.

A second point concerns those shi..de sentence forms which do *not* have past time interpretation, i.e. those where an ‘over-ride’ is able to force a future-type reading. The basic argumentation of the paper has been to suggest that shi..de structures originally did come from CNPs with the structure and derivation indicated in (11/12), but that evidence relating to object placement and past time interpretation indicates that these structures have undergone reanalysis, with the element de being reanalyzed as a past tense morpheme. Critically we showed that the sequence V-de-Ob was only possible when there was a past time interpretation. An implication of this may then be that where de does *not* have a past time interpretation, it is not being analyzed as an instantiation of T and so remains an element of type D heading a *CNP* structure. If this is indeed so, one might then anticipate that the other properties relating to *wh*-adjuncts and adverb construal mentioned above might also pattern differently when de has a non-past interpretation, i.e. if non-past de is not reanalyzed as a T and the post-shi therefore remains a *CNP*, one might expect for it to be difficult for such shi..de structures to contain *wh*-adjuncts and for adverbs to the left of shi to modify a predicate occurring between shi and de. Interestingly judgements offered by informants do seem to go in the expected direction, and while *wh*-adjuncts are perfectly acceptable in past-time de structures, they are not liked in non-past shi..de structures, as the contrast in (35) and (36) shows. Similarly, while adverbs to the left of shi in past-time shi..de forms may freely modify the predicate in the post-shi sequence, this is again rather poor with non-past shi..de forms (83) vs (84) and (85):

- (35) ta shi weishenme qu Beijing de
 he BE why go Beijing DE
 ‘Why is it that he went to Beijing?’
- (36) *ta shi weishenme/zenme hui qu Beijing de
 he BE why/how will go Beijing DE
- (37) zuotian ta shi lai mai shu de
 yesterday he BE come buy book DE
 ‘Yesterday he came to buy a book.’
- (38) ?*wo mei-tian dou shi hui qu Beijing de
 I every-day all BE will go Beijing DE
- (39) ?(?)mingtian ta shi hui qu Beijing de
 tomorrow he BE will go Beijing DE

The clear contrasts between such examples would then seem to indicate that de in non-past shi..de forms is indeed still a D heading a *CNP* and that speakers currently maintain a

dual analysis of shi..de forms, one with de as an instantiation of T⁰ heading a past-tense TP, and a second with de remaining a D and a basic CNP structure, this providing further support for the general position that language change is indeed often the result of the subtle development of a single surface form into two rather different underlying analyses.

As a last note, it can also be mentioned that when a future time reference is intended, there seems to be a notable preference for shi to occur with de; (40) below shows that a future time de form without shi is dispreferred:

- (40) ta ?(shi) mingtian cai hui qu mai shu de
 he BE tomorrow only will go buy book DE
 'It is only tomorrow that he will go and buy the book.'

This may be suggested to indicate again that where de occurs with non-past/future reference then the structure is one of a nominalization/CNP headed by de, and that as a *nominal* it requires the copula shi.⁹

5. Concluding remarks

This paper set out to provide a full characterisation of the syntax of clause-final de and resolve a number of apparent contradictions shown to be present in the patterning of shi..de constructions. We began by showing that there is considerable cross-linguistic and cross-dialectal evidence to support the suggestion that shi..de forms incorporate a clausal nominalization selected by shi. We then went on to show however that there is a variety of other evidence which argues against assuming any CNP-type structure. Adopting a previous analysis of de as a determiner underspecified for definiteness and investigating the patterning of object placement in particular and its interaction with the temporal interpretation of the predicate in shi..de forms, we suggested that such structures are currently undergoing a process of syntactic reanalysis. It was argued that a past time conversational implicature part of the original nominal shi..de construction has become strengthened to the point that the determiner de has now become re-analyzed as an instantiation of (past) Tense/T⁰. This reanalysis was then suggested to explain the observation that de in past time interpretations appears to move over the direct object and cliticize to the verb, as well as the possibility for *wh*-adjuncts to occur to the right of shi and for adverbs to the left of shi to modify the predicate to its right. Invoking morphological evidence from Burmese as critical support, the paper also showed how the reanalysis process in part resulted from the incorporation of a zero nominal head into the determiner in the original CNP form, and further suggested that such a reanalysis of a complex determiner form as a past tense morpheme is in fact a natural developmental

⁹ (40) is not classed as ungrammatical, but certainly awkward and rather unnatural without shi. Given that null copulas are sometimes licensed in Chinese, it may be that speakers might also tolerate a null copula here (and that is why the form without shi is not seen to be really unacceptable).

shift between functional heads which both serve to provide reference to their respective complements. Finally the paper provided evidence that many speakers may still maintain a nominalization analysis for non-past shi..de forms, implying that apparently identical linear strings may actually be assigned rather different underlying analyses.

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