

# The $V+T+de+N$ construction in Chinese

## A case of bracketing paradox

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### 1 Introduction

In this study, we focus on a type of the so-called pseudo/quasi-attribute construction (cf. Huang 1981: 42; Deng 2010: 51) in Mandarin Chinese, which is realized as a structure with a verb, a time modifier, the particle *de* and a noun (VTdeN, henceforth), cf. (1). As the term *pseudo/quasi-attribute* suggests, the modifier *yi-zhou* ‘one week’ in (1) is not a real modifier of the noun *zuo-ye* ‘assignment’, although it is syntactically combined with it – by means of the NP marker *de* (cf. Sun 2015). In fact, *yi-zhou* modifies the verbal event *xie* ‘write’, i.e. (1) is an instance of a bracketing paradox, where the modifier syntactically combines with the noun, but it modifies the verb. Our data suggest that the bracketing paradox has to be solved without compromising the syntactic constituent structure of the NP and the syntactic combination of V and NP. Hence, in order to deal with this bracketing paradox we apply a lexical rule to the verb and a unary syntactic rule to the NP, creating a structure that is parallel to separable verbs in Mandarin Chinese.

- (1) wo [xie-le yi-zhou de zuo-ye]  
1.SG write-ASP one-week DE assignment  
‘I worked on my assignment for one week.’

### 2 Previous studies

The VTdeN construction has not received much attention compared to its eponymous construction, namely *ta de lao-shi dang de hao* ‘He serves well as a teacher’. Mostly, one can find only grammatical descriptions of the construction focusing on the omission of *de* and restrictions that apply to the complex structure composed of verb, temporal modifier, and noun (cf. Hui 2012; Kuang 2015; Miao 2020). As far as we are aware, the only formal proposal for the VTdeN structure can be found in Huang (2008) and Huang et al. (2009). In Huang’s analysis (cf. Huang et al. 2009: 97), it is assumed that verb and object build – at the deep structure level – a nominal gerundive constituent, i.e. an NP (cf. (2)). This NP is then modified by the durative phrase, i.e. *san-tian* ‘three days’ in (2). This complex temporally modified gerundive NP is then selected by a phonetically empty verb DO. The head of the gerundive clause, *mai* ‘selling’ in (2), moves via head-movement to the position of DO and merges with it in the surface structure.

- (2) [S wo ∅ [NP<sub>[MOD san-tian de]</sub> [NP mai yu]]]  
1.SG DO three-day DE selling fish  
‘I sold fish for three days’

There is a number of unclear aspects in Huang’s analysis. First, it is not clear what drives the movement of the gerundive word *mai* ‘selling’ to the verb DO. Second, it does not explain how the gerundive word *mai* ‘selling’, which is an N, obtains tense or aspect information in the position of the phonetically empty verb *do*. Mandarin Chinese lacks inflection, but there are still elements that store tense and aspect information, such as the perfective morpheme *le* in (1) and the verb *jiang-yao* ‘will’ in (3).

- (3) wo [jiang-yao] xie yi-zhou de zuo-ye  
1.SG will write one-week DE assignment  
‘I will work on my assignment for one week.’

Third, the possibility to “move” the combination of noun and modifier to the front of the sentence (cf. (4)), shows that together they build a constituent. In contrast (and against the gerundive approach), this word order is not possible at all if the verbal head stays in the assumed “base generated position” (cf. (5)).

- (4) [yi-zhou de zuo-ye] wo xie-le  
 one-week DE assignment 1.SG write-ASP  
 ‘I worked on my assignment for one week.’
- (5) \* [S [NP [MOD san-tian de] [NP mai yu]] wo Ø ]  
 three-day DE selling fish 1.SG DO  
 Intended: ‘I sold fish for three days.’

That shows that the gerundive approach has problems accounting for the syntactic constituency of the phrase containing modifier and noun and the semantic relation between modifier and verb at the same time, therefore calling for a new approach that can deal with these facts.

### 3 Description of the VTdeN structure

The VTdeN structure consists of the following components:

- (i) V, a verb (optionally with an aspect marker), e.g. *xie-le* ‘write-ASP’;
- (ii) T, a (time) modifier, e.g. *yi-zhou* ‘one week’;
- (iii) the marker *de* for nominal attachment; and
- (iv) NP, a noun phrase, e.g. *zuo-ye* ‘assignment’.

In the previous example (1), verb and noun form a “normal VP”, in which the verb selects for a noun assigning a thematic role to it. However, the bracketing paradox shown in (1) is not limited to “normal” verb–object combinations. Chinese idiomatic separable verbs – both decomposable (e.g. *li-fa* ‘have a haircut’ in (6a)) and non-decomposable (e.g. *sheng-qi* ‘get angry’ in (6b)) – also allow for this paradoxical behaviour.<sup>1</sup> That is, the paradoxical behaviour of the VTdeN construction can be also observed in constructions that have a non-compositional meaning, as far as they consist of a verb and a nominal element. So for instance, in (6b), the separable verb *sheng qi* (literally: ‘give.birth breath’) means ‘to get angry’.

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| (6) a. wo [li]-le yi xiao-shi de [fa]<br>1.SG cut-ASP one hour DE hair<br>‘I had a haircut for an hour.’ | b. wo [sheng]-le yi-day de [qi]<br>1.SG give.birth-ASP one-day DE breath<br>‘I got angry for one day.’ |
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That is to say, the presence of a nominal element is a crucial factor for the VTdeN construction. This is also shown by the marker *de* that appears between the time modifier and the noun in (1). In general, *de* marks phrases that combine with a noun, for instance a possessive modifier in (8a), an adjectival modifier in (8b), an argument in (8c), or a relative clause in (8d).<sup>2</sup>

<sup>1</sup>We are not going into the details of Chinese separable verbs. For a possible analysis, see Wang & Müller (2013).

<sup>2</sup>In some cases, *de* can be omitted when a noun or an adjective modifies a noun. However, in the absence of *de*, the N/A+N-combination is analysed as a morphological compound and not as a syntactic combination (cf. Sun 2015; Xu 2018). In many cases, the morphological combination leads to a lexicalised meaning (e.g. *bai-zhi* in (7) means ‘blank paper’), while the syntactic combination leads to a modification of the entity denoted by the noun (e.g. *bai de zhi* in (7) means ‘entity, which is white and which is paper’).

- (7) wo xiang-yao yi-zhang [bai-zhi], bu-shi [bai de zhi]  
 1.SG want one-CL blank-paper not white DE paper  
 ‘I want a blank sheet of paper, not a white sheet of paper.’

For a more detailed description of morphological and syntactic modification, see Bücking (2009). For a discussion about the *de* marker in Chinese, see Paul (2005).

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| (8) a. [wo de] qun-zi<br>1.SG DE dress<br>'my dress'                 | c. [cheng-shi de] hui-mie<br>city DE destruction<br>'(the) destruction of (the) city' |
| b. [piao-liang de] qun-zi<br>beautiful DE dress<br>'beautiful dress' | d. [wo mai de] qun-zi<br>1.SG buy DE dress<br>'(the) dress that I bought'             |

Therefore, the *de* marker indicates that the phrase preceding the marker is attached to a noun (phrase), i.e. it serves as evidence for the syntactic combination of the temporal modifier and the noun in (1). Since *de* is not contributing any meaning, following Pollard & Sag (1994), we treat *de* as a syntactic marker which enables the combination with a noun.

It should also be mentioned, that the VTdeN phrase is in fact ambiguous. According to Ma (2004: 246), our example (1) can be interpreted in the following ways:

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| (9) a. 'I worked on my assignment for one week.'      | [Bracketing paradox] |
| b. 'I worked on an [assignment for one week].'        | [Nominal modifier]   |
| c. '(the) assignment [that I worked on for one week]' | [Relative clause]    |

The interpretation in (9a) is the bracketing paradox we are dealing with here. The interpretation in (9b) results from the *de*-marked *yi-zhou* 'one week' syntactically attaching to the noun *zuo-ye* 'assignment' and modifying it. In this case, we encounter the modifier-noun combination as shown in (8b). The interpretation in (9c), is the relative clause interpretation as shown in (8d).

One more aspect that has to be mentioned is the possibility of numeral+classifiers *for events* to be attached to the noun. For instance, in (10a) and (10b), *liang-ci* 'twice' and *san-ci* 'three times' attach to their respective verbs quantifying over the number of instances the event denoted by the verb occurred. For these combinations no *de* marker is needed since the numeral+classifiers are syntactically attached to the verb. What is remarkable in this case is that the numeral+classifiers can also be syntactically attached to the noun, see *de* marker in (11a) and (11b), but keep modifying the event.

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| (10) a. wo qu-le [liang-ci] zhong-guo<br>1.SG go.to-ASP two-time China<br>'I went to China twice.' | (11) a. wo mai-le [liang-ci] de KFC<br>1.SG buy-ASP two-time DE KFC<br>'I bought KFC twice.'                 |
| b. wo da-le ta [san-ci]<br>1.SG hit-ASP 3.SG three-time<br>'I hit him three times.'                | b. wo qu-le [san-ci] de yin-hang<br>1.SG go.to-ASP three-time DE bank<br>'I went to (the) bank three times.' |

That means that in Mandarin Chinese it is not exceptional for a phrase modifying a verb to syntactically attach to an object of this verb. But in order to do so, some restrictions must be applied to the noun. For instance, as the examples in (12) and (13) show, the noun in the VTdeN construction with the bracketing paradox interpretation cannot be preceded by a nominal numeral+classifier (compared to the discussion of (11)). In (12), nominal numeral+classifier *san-tiao* 'three CL' attaches to *qun-zi* 'dress' quantifying over the number of dresses. In this case *san-xiao-shi* 'three hours' cannot attach to the noun, leading to the bracketing paradox reading. The only interpretation possible in this case is the one of a relative clause, as the brackets in (12a) suggest. That is, *de* marks in this case the relative clause *wo mai-le san-xiao-shi* 'that I bought for three hours' (cf. (9c)). Furthermore, as shown in (12b), changing the position of the nominal numeral+classifier *san-tiao* and the temporal modifier *san-xiao-shi* leads only to an ungrammatical phrase. Similarly, the noun in the VTdeN construction cannot be combined with a demonstrative, cf. (13b). That is, the noun in the VTdeN construction seems to have lost its nominal properties at the semantic level, but not on the syntactic level, viz. combination with *de* marked phrases.

- (12) a. [wo mai-le san-xiao-shi<sub>RC</sub>] de [san-tiao] qun-zi  
 1.SG buy-ASP three-hour DE three-CL dress  
 \*‘I bought three dresses for three hours’ [Bracketing paradox]  
 ‘three dresses that I bought for three hours’ [Relative clause]
- b. \* wo mai-le [san-tiao] san-xiao-shi de qun-zi  
 1.SG buy-ASP san-CL three-hour DE dress  
 Intended: ‘I bought three dresses for three hours’ [Bracketing paradox]
- (13) a. [wo mai-le san-xiao-shi<sub>RC</sub>] de [na] qun-zi  
 1.SG buy-ASP three-hour DE that dress  
 \*‘I bought that dress for three hours’ [Bracketing paradox]  
 ‘that dress I bought for three hours’ [Relative clause]
- b. \* wo mai-le [na] san-xiao-shi de qun-zi  
 1.SG buy-ASP that three-hour DE dress  
 Intended: ‘I bought that dresses for 3 hours’ [Bracketing paradox]

To summarize, the bracketing-paradox interpretation of the VTdeN construction in Mandarin Chinese can be observed in verb–object combinations, but also in separable verbs. The syntactic marker *de* indicates that the N in the VTdeN construction is “syntactically” a noun, and it allows phrases to attach to it modifying not the meaning of N but the meaning of the verb that is taking N as an argument, such as durative modifiers or event classifiers. Interestingly, in the bracketing-paradox interpretation sketched here, the noun cannot combine with nominal numeral+classifiers or demonstratives. This fact suggests that while we are dealing syntactically with a noun, this element is semantically a verb. Therefore, in the bracketing-paradox interpretation, we propose that a unary syntactic rule is applied to the noun (phrase) changing its denotation from “nominal” to “verbal”. Correspondingly, the verb selecting it as object needs to be changed as well. These rules will be explained in more detail in the next section.

#### 4 Solving the bracketing paradox

As mentioned in the previous section, the noun (more precisely: NP) in VTdeN construction needs to be changed by a unary syntactic rule before it is combined with the temporal modifier. We do not assume a lexical rule since the sign acting as the input of the rule (the NP) can be syntactically complex. For instance, the noun *zuo-ye* ‘assignment’ can be modified by APs such as *hen-nan* ‘very difficult’ in (14a) or relative clauses *lao-shi bu-zhi* ‘that is assigned by the teacher’ in (14b) before it is combined with the *de* marked temporal modifier *yi-zhou* ‘one-week’.

- (14) a. wo xie-le [yi-zhou de [hen nan de zuo-ye]]  
 1.SG write-ASP one-week DE very difficult DE assignment  
 ‘I wrote very difficult assignments for a week.’
- b. wo xie-le [yi-zhou de [lao-shi bu-zhi de zuo-ye]]  
 1.SG write-ASP one-week DE teacher assign DE assignment  
 ‘I wrote the assignments assigned by the teacher for a week.’

In Figure (1), we show step-by-step how the combinatorics of the VTdeN construction take place. The unary syntactic rule is shown in the rightmost part of Figure (1). The input is a noun with the IND value of type *index* (cf. ①). In the output of the rule, the the IND value is changed to type *event* (cf. ③). The new IND value, is structure-shared with the ARG0 value of an underspecified elementary predication that is taking the noun as its ARG2, i.e. as its “object”. That is, the new NP is syntactically a noun (cf. HEAD *noun*), but semantically an event (cf. IND *event*). The noun meaning is now “embedded” and interpreted as the argument of the event.



## 5 Conclusions

This analysis offers the possibility to account for the bracketing-paradox interpretation of the VTdeN construction in Mandarin Chinese taking into consideration that the object noun has to be identified syntactically as an NP, but has to be interpreted with the meaning of the verb it is selected by. Furthermore, we can account for the incompatibility of the NP with nominal numeral+classifiers or demonstratives, as well as for the constituent structure suggested by the data (i.e. TdeNP builds a constituent). For our analysis, we do not need to assume further syntactic structures licensing the combination of elements. The only rules that have to be assumed (a unary syntactic rule and a lexical rule) can be motivated by separable verbs in Mandarin Chinese, which show the same behaviour as our VTdeN construction.

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