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Author(s)	Qiu, Xiaoshi
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Qiu Xiaoshi

1. Introduction: VdeO construction in simple sentences

This paper focuses on *de* ‘的’, a Chinese particle that shares a roughly similar distribution and meaning with Japanese *no* ‘の’ in noun phrase and sentences. The paper proposes that the non-relative sentence-medial *de*, formerly recognized as a component of cleft construction, is actually an atelic marker, and is in a complementary distribution with the telic marker *le* proposed by Wang (2018) even in simple sentences.

Consider this sentence, found in Mandarin native speakers' daily conversation:

- (1) *wo mai de niurou, hai/*gen mai de xihongshi gen/*hai qincai*
 1SG buy DE beef also/*with buy DE tomato with/*also celery.
 'I bought some beef, also bought some tomatoes and celery.'

It has a *de* adjacent to the verb and precedes the object. Normally this configuration is found only in relative clauses and clefts, but this example seems not belong to any of the 2 constructions.

As a DP, a relative clause should not be compatible with a sentence level conjunction such as *hai* ‘also’, while a word level conjunction *gen* ‘with’ is grammatical. This suggests that (1) has a non-relative reading.

On the other hand, Chinese clefts have a fixed-positioned contrast focus assigned by the copula *shi*; And (both genuine and pseudo) clefts are restricted by the exclusiveness condition, while these features are still missing in (1), showing that (1) also has a non-cleft reading.

Interestingly, some special properties of a *VdeO* cleft, firstly pointed out by Paul&Whitman (2008), also can be observed on sentences like (1), for example, they all reject elements higher than vP (2), as well as future-oriented expressions (3)

- (2) a. **shi didi mei xi de panzi* (cleft)
 COP² brother didn't wash DE dish
 Intended: 'It was the little brother who didn't wash the dishes.' (P&W 2008, (44a))

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² All capitalized gloss are abbreviations of functional heads, the abbreviations used in this paper are as follows: COP: copula, DE: the functional head *de*, 1/2/3SG: singular 1st/2nd/3rd-person pronoun, Q: question marker, CL: classifier, ASP: aspectual marker, PROG: progressive, CONJ: conjunction, LE: the functional head *le*

- b. *wo mei mai de niurou³ (non-cleft)
 1SG didn't buy DE beef
 Intended: 'I didn't buy beef.'
- (3) a. ni shi zuotian/*mingtian qu de jingdu ma? (cleft)
 2SG COP yesterday/tomorrow go DE Kyoto Q
 'Did/*Are you go to Kyoto yesterday/*tomorrow?'
- b. wo zuotian mai de niurou, suoyi jintian chi huoguo (non-cleft)
 1SG yesterday buy DE beef so today eat hot pot
 'I bought some beef yesterday, so today I'll have hot pot.'
- c. wo *mingtian mai de niurou, suoyi *houtian chi huoguo (non-cleft)
 1SG tomorrow buy DE beef so the day after eat hot pot
 Intended: 'I will buy some beef tomorrow, so the day after it I'll have hot pot.'

These special properties are considered to be caused by *de* in the cleft structures, so it is plausible to say all *de* in the above examples are the same element.

In the previous research on clefts, the particular analysis for DE can be divided into 3 types: D hypothesis by Simpson&Wu (2002), Aspectual hypothesis by Paul&Whitman (2008), and C hypothesis by Hole (2011). All these analyses are tried to explain (3), a very long-traditioned observation since Dragunov (1952), that *de* denotes past/prefect reading. Yet there are evidences that contradict: (4) has a habitual reading, which differs from past or perfective.

- (4) nimenjia yiban gei mao wei de sha
 your family usually to cat feed DE what

³ Previous analyses like P&W 2008 only stated that materials higher than *vP* would lead the cleft to be ungrammatical, but according to the author's native speaker test, a more specific generalization should be that all *VdeO* clefts have a potential relative clause reading (though may be strange pragmatically), and materials higher than *vP* would block the cleft reading, making the relative reading to be the only one left, shown as below:

- a. shi didi mei xi de panzi. (=2a)
 COP brother didn't washDE dish
 '(It) is the dish that the little brother didn't wash.'
- b. wo mei mai de niurou. (=2b)
 1SG didn't buy DE beef
 'The beef I didn't buy.'

Strangely, swear word *tama* 'fucking' may on the contrary, block the potential relative reading:

- c. wo tama mai de niurou.
 1SG fucking buy DE beef
 'I fucking bought some beef.'
 *'The beef I fucking bought'

All these might suggest some connection between clefts and relative clauses. I will leave it for future research.

'What do you usually feed with cat in your family?'

Next, the 3 previous analysis on *de* will be tested by this new evidence to see if they still stand.

2. Previous Analyses: Simpson&Wu (2002), Paul&Whitman (2008), Hole (2011)

Simpson&Wu (2002) argues that *de* carries a past tense feature and that the TP it forms is chosen as the complement of the verb *shi*. The AspP complement of *de* itself, then moves to the SPEC position of TP.

- (5) [VP [V' [V *shi*] [TP [SPEC *zuotian pro lai*] [T' [T *de*] [AspP *t*]]]]]
 (*wo_k*) *shi* *zuotian pro_k lai* *de*
 1SG COP yesterday come DE
 'It was yesterday that I came.' (S&W 2002, (58))

S&W (2002) does not actually take into account the case where *de* is embedded between the verb and the object; they point out that there are two *de*, one of which is mandatory for the past tense as (5), and the other can be left out of the past tense, the latter being analyzed as a D head. According to Paul&Whitman (2008), the latter *de* is actually head of the so-called "propositional assertion", a structure that is roughly equivalent to the Japanese *noda* constructure. S&W's (2002) analysis cannot explain the tense problem of sentences like (4), and analyzing *de* as a T head would not prevent elements such as modal verbs and negation from being generated here, which does not explain the illegitimacy of (2a), the starting point of P&W (2008).

To address the shortcomings of S&W (2002), P&W (2008) assumes that the *VdeO* cleft sentence has the following structure.

- (6) [VP *shi* [AspP *ta jiejie* [AspP *kai+de* [vP [*t_{jiejie}* [v' [v [VP *t_v* [DP *men*]]]]]]]]]]]
 shi *ta jiejie* *kai* *de* *men*
 COP 3SG sister open DE door
 'It was her elder sister who opened the door.' (P&W 2008, (54))

- (7) [VP *shi* [AspP *t_{Lu Xun}* [AspP *heshi* [AspP *xie+de* [vP [*t_{Lu Xun}* [v' [v [VP *t_v* [DP *Akiu*]]]]]]]]]]]
 (*Lu Xun*) *shi* *heshi* *xie de* *Akiu?*
 Lu Xun COP what time writeDE *Akiu*
 'When was it that Lu Xun wrote *Akiu Zhengzhuan*?' (Adapt from P&W 2008, (55))

De is the first element above the vP and is also the AspP head, the verb is also combined with

de. The focus continues to be attached to the AspP, adjacent to *shi*. This ensures that no element larger than the vP is present in the presupposition. When the focus is not the subject, it moves to the TP SPEC, exposing the other AspP adjunct below it, making it the focus adjacent to *shi*. P&W (2008) also argues that the [Past] feature is part of the lexical meaning of *de*, but this cannot explain the situation of (4).

Hole (2011) assumes *VdeO* constructure to be the sequence of object shift and Prosodic Inversion at PF, this sequence is shown in (8).

- (8) a. *wo shi zuotian xie-de shi*
 1SG COP yesterday write-DE poem
 'It was yesterday that I wrote poems.' (Hole 2011, (36))
- b. Object Shift
 [_{AspP} poem_i ... [_V write t_i]] (Hole 2011, (37a))
- c. Prosodic Inversion
 [(write)_{PF} [C-de ... [_{Asp} poem_i ... (write)_{spell-out}]]] (Hole 2011, (37b))

As for Hole, the fact that a quantified indefinite object is banned in *VdeO* is the evidence of object shift, because only bare or definite object may undergo the object shift, as shown in (9)

- (9) a. *wo [*(zhei) yi ben]_i shu kan t_i le*
 1SG this one CL book read ASP
 '*(This) single book, I finished reading.' (Adapt from Hole 2011, (38a))
- b. *wo shi zai tushuguan kan de *(zhei) yi ben shu*
 1SG COP at library read DE this one CL book
 'It's in the library I read *(this) one book.' (Adapt from Hole 2011, (39a))

And the Prosodic Inversion causes TAM elements banned in the *VdeO* constructure. TAM elements originally have 2 positions to undergo external merge: between O and V, or between *de* and O. Yet Mandarin employs 2 PF ordering constraints: V precedes O, TAM precedes V. After the object shift, constraint "V precedes O" would force the verb moves to precede the object (together with the enclitic *de*) as in (8c), and the constraint "TAM precedes V" would then block any pronounced TAM elements for they cannot precede the verb anymore.

But it doesn't mean that the *VdeO* constructure have no tense or aspect. Hole (2011) assumes that the copula in clefts with its present-perfect-like implications for the overall structure restricts the predicate to have a default TAM value: [+anterior, irrealis, +terminative], in a fashion stated by (Cinque, 1999:129).

To summarize: S&W (2002)'s model did not touch the tense problem; P&W (2008) failed to cover tense cases other than perfective or past; Hole (2011) seems to answered this question but still missed a basic question: Why must there be a noun after the verb? Deleting the noun in *VdeO* constructure would expose *de* to the right end of the sentence, letting it become the so-called "propositional assertion", in which *de* does not denote tense or aspect, nor does TAM materials being banned. As shown in (10), this noun *EMS* even need not to be the object.

- (10) a. *shu wo yiban/*mingtian (*neng) ji de EMS*
 book 1SG usually/*tomorrow can send DE EMS
 'As for the books, usually/*tomorrow I (*can) have them sent via EMS.'
- b. *shu wo yiban/*mingtian neng ji de*
 book 1SG usually/*tomorrow can send DE
 'As for the books, it is the case that usually/tomorrow I can have them sent.'

3. Atelicity of the predicates in *VdeO* constructures: Borer (2005) and Wang (2018)

(9b), here reproduced as (11a) is ungrammatical with indefinite quantified DP, but would strangely turn grammatical when *de* is replaced by *le*, which usually regarded as Mandarin's perfective aspectual marker, as shown in (11b).

- (11) a. **wo shi zai tushuguan kan de yi ben shu*
 1SG COP at library read DE one CL book
 Intended: 'It's in the library I read one book.'
- b. *wo shi zai tushuguan kan le yi ben shu*
 1SG COP at library read LE one CL book
 'It's in the library I read one book.' (Adapt from Hole 2011, (39a))

(11b) is constructed based on Wang (2018)'s exo-skeletal model, which argues that *le* adjacent to verb is essentially a telic marker and only appears in telic predicates. This telic marker *le*, licensed by quantified DP, assigned range to the open value of the predicate, making it telic (Wang 2018: 32).

The past/perfective reading is a by-product of *le*'s long distanced agreement with the outer aspect. When the outer aspect has its own range assigner (i.e TAM), duplicate range assignment for the outer aspect would occur between *le* and this aspectual marker. This makes TAM elements blocked when *le* adjacent to verb appears (Wang 2018: 34).

Finally, when the outer aspect does not need range assignment, *le* would only have a telic meaning (Wang 2018: 85).

Wang (2018) inherited Borer's (2005) definition of telicity, that telicity-atelicity distinction is

the same as the distinction between homogeneity and quantity, quantity events are the same as telic events, while homogenous can be defined as follows:

- (12) a. P is homogeneous iff P is cumulative and divisive.
 i. P is divisive iff $\forall x, y [P(x) \wedge (y < x) \rightarrow P(y)]$
 ii. P is cumulative iff $\forall x, y [P(x) \wedge P(y) \rightarrow P(x \cup y)]$
 b. P is quantity iff P is not homogeneous. (Wang 2018: 13, (21))

Under this definition, *kan yi ben shu* 'read one book' is divisive but not cumulative: part of it still equals to *kan yi ben shu* 'read one book', but when it multiplies, the result could be read two books. On the other hand, *kan zhei yi ben shu* 'read this one book', the grammatical predicate which goes well with *de* in (9b) is homogeneous or atelic, because part of it still means read this one book, and when this event multiplies the result remains the same. This event is divisive and cumulative.

Now, is *de* in VdeO really are all atelic? Wang (2018) used several tests to show that sentences with verb-adjacent *le* are all telic, the same test can also be used on *de*.

Progressive test: Atelic events are homogenous, so a part of it should equals to all of it, while for telic events it is false.

- (13) a. *Zhangsan dangshi zai chi yi-ge pingguo.*
 Zhangsan then PROG eat one-CL apple
 'Zhangsan was eating an apple then.'
 b. *Zhangsan dangshi chi le yi-ge pingguo.*
 Zhangsan then eat LE one-CL apple
 'Zhangsan ate an apple then.' (Wang 2018: 43, (22))

- (14) a. *Zhangsan dangshi zai chi pingguo.*
 Zhangsan then PROG eat apple
 'Zhangsan was eating an apple then.'
 b. *Zhangsan dangshi chi de pingguo.*
 Zhangsan then eat DE apple
 'Zhangsan was eating an apple then.' (Adapt from Wang 2018: 43 (23))

(13) was used by Wang to show the telicity of *le*, and it can be deduced that (13b) does not entail (13a). (14) is the adopted from the attempt of showing atelic events, although in Wang (2018)'s example there was no *de*, and in this example we can see that (14b) does entail (14a).

Coordination test: When coordinated, two telic verbs give rise to a sequential interpretation

while two coordinated atelic verbs will allow a simultaneous interpretation.

- (15) a. *Zhangsan chang le ge you tiao le wu.*
 Zhangsan sing LE song CONJ dance LE dance
 'Zhangsan sang the song and (then) did the dance.'
- b. *Zhangsan chang ge you tiao wu.*
 Zhangsan sing song CONJ dance dance.
 'Zhangsan sang and danced (at the same time).'
- (Wang 2018: 44, (25))

- (16) a. *Zhangsan chang de ge you tiao de wu.*
 Zhangsan sing DE song CONJ dance DE dance.
 'Zhangsan sang the song and did the dance.' (Adapt from Wang 2018: 44 (25b))
- b. *Zhangsan na le/de shoudian you ti le/de lanzi.*
 Zhangsan take LE/DE flashlight CONJ carry LE/DE basket
 LE: 'Zhangsan took the flashlight, then carried the basket.'
 DE: 'Zhangsan is/was there with a flashlight in one hand, a basket in another.'

(15a, b) is Wang's example, where in (15a), the action must be taken one by one rather than at the same time as (15b).

Yet when we change *le* in into *de* (16a), the actions also become no more sequential, but simultaneous now. There is an even stronger example (16b), where alternation of *le* and *de* precisely and obviously changes the actions' order.

Insertion test of *jihu*: Only atelic events may not be modified by *jihu* 'almost', because only in telic events there are concepts of degree, and every moment is different.

- (17) a. *Zhangsan jihu sha le Lisi.*
 Zhangsan almost kill LE Lisi
 'Zhangsan almost killed Lisi.'
- b. *Zhangsan jihu dao le Beijing.*
 Zhangsan almost arrive LE Beijing
 'Zhangsan almost arrived at Beijing.'
- (Wang 2018: 47, (31))

- (18) a. *Zhangsan (*jihu) tan de gang-qin.*
 Zhangsan almost play DE piano
 Intended reading: 'Zhangsan almost played the piano.'
- b. **Zhangsan jihu renshi de Lisi.*

Zhangsan almost know DE Lisi.

Intended reading: 'Zhangsan almost knows Lisi.' (Adapt from Wang 2018: 47, (32))

(17a,b) are telic sentences, and they do go well with the inserted *jihu*. In (18a) with atelic *de*, *jihu* makes the sentence ungrammatical, which is also predicted.

Note that for (18b), even deleting *jihu* cannot save this sentence, the reason might be that *renshi* 'know' has an aspect that *de* cannot assign range via long distance agree.

Time adverbial test: *in x time* goes well with telic constructions but not atelic constructions. *for x time* is the opposite, it is only compatible with the atelic constructions.

In Chinese, it is hard to find a phrase that is equivalent to *for x time*, but *x nei*, literally *within x time*, behaves quite similarly with its English counterpart.

(19) a. Zhangsan shi fenzhong nei chi le san-ge pingguo.

Zhangsan ten minute within eat LE three-CL apple.

'Zhangsan ate three apples in ten minutes.'

b. Zhangsan shi fenzhong nei chi de pingguo.

Zhangsan ten minute within eat DE apple.

Intended reading: 'Zhangsan ate apples in ten minutes.'

Actual reading: 'The event of Zhangsan ate apples took place no more than 10 minutes before.'
(Adapt from Wang 2018: 51, (39))

(19a) is a telic sentence, and it does works well with the attached time adverbial phrase *in ten minutes*. (19b) with the atelic *de* is only good in the interpretation of "The event of Zhangsan ate apples took place no more than 10 minutes before." This is predicated, since atelic events usually have no ends, starting point is the only thing that the time information '*within 10 minutes*' may apply⁴.

4. An exo-skeletal atelic *de* model

De passed the 4 atelic tests, suggesting that there are good reasons to believe that it can head atelic predicates in clefts and simple sentences. Now an atelic *de* model can be construct in the light of Wang (2019)'s model.

(20ab) are 2 typical sentences with telic *le* and atelic *de*, their tree diagram are shown as (21ab) .

(20) a. Zhangsan chi le san-ge pingguo.

⁴ (19b) was mistakenly took as an wrongly predicated example in the original paper, because it has a grammatical reading rather than totally ungrammatical. I thank the reviewer for pointing out this mistake.

Zhangsan eat LE three-CL apple

'Zhangsan ate three apples.'

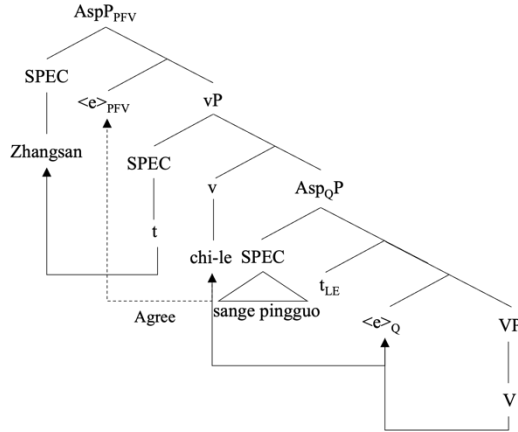
(Wang 2018: 21, (29a))

b. *wo mai de niurou.*

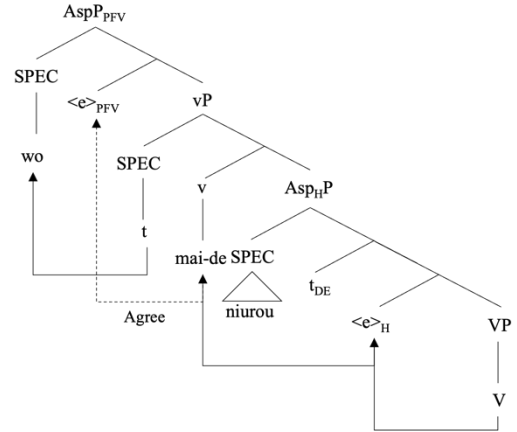
1SG buy DE beef

'I bought some beef.'

(21) a. (Wang 2018:21, (29b))



b.



In (21a), the quantified DP *sange pingguo* 'three apples' on Asp_QP 's $SPEC$ licensed the telic marker *le*, making it able to assign range to the open value of the Asp_QP . This Asp_QP is responsible for the telic reading. Next, the verb joined with *le* at v , *le* then assign range to the outer aspect's open value $<e>_{PFV}$ via long-distance agree. In (21b), when the $SPEC$ of Asp_HP is not quantified DP (hence H for homogenous), the atelic marker *de* appears, which will combine with the verb at vP just like *le* and then license the outer aspect by long-distance agreement.

Wang (2018) argues that atelic does not need special marking. However, it is necessary to assume the presence of an atelic marker *de*, because without it there would be no element in a sentence like (20b) that could assign range to the outer aspect.

There are two questions remain for the proposed model to be answered in the future: **1)** there are situations where the outer aspect does not need *le* assign range for it (22a), or there is no event at all (22b), yet *le* still appears because the predicates are telic. In such cases, *le* is purely telic without perfective reading. Is there counterpart example of purely atelic *de*?

(22) a. *Zhangsan bixu chi le na-ge pingguo.*

Zhangsan must eat LE that-CL apple.

'Zhangsan must eat that apple.'

b. *Zhangsan (bi Lisi) gao le san yingcun.*

Zhangsan than Lisi tall LE three inch.

'Zhangsan is three inches taller (than Lisi).'

2) *le* as a telic marker can license the outer perfective aspect, but does the atelic marker *de* also really have the same function?

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