<u>Diachronic formation of Chinese cleft (*shi-de*) constructions: 'lateral' grammaticalization revised:</u>

<u>Introduction:</u>

Chinese cleft constructions consist of copula *shi* assigning cleft focus to its immediately adjacent element in its complement ending in *de* (hence *shi-de* constructions (Chao (1968:296-297), Li and Thompson (1976:587ff)), which may be schematised thus (cf Lee (2005:133), Paul and Whitman (2008:430), Hole (2011:1710)):

    1) Subject   shi   cleft-focus   cleft-presupposition   de[1]

While in all dialects *de* is sentence-final (VOde), in northern Mandarin dialects *de* may be adjacent to the verb and precede the object (VdeO), which yields the following alternation:

2a)	wo	shi	zuotian	mai	piao	de
	I	COP	yesterday	buy	ticket	DE

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[1] Paul and Whitman (2008:414-419) point out *shi* only assigns focus to its adjacent element when *de* is present (i)), without which focus seems to be freely assigned within the embedded clause (ii)):

i)	ta	shi	zai	Beijing		xue	yuyanxue
	he	SHI	at	Beijing		learn	linguistics
	bu	shi	zai	Shanghai		xue	yuyanxue
	NEG	SHI	at	Shanghai		learn	linguistics
	ye	bu	shi	zai	Beijing	xue	fawen
	also	NEG	SHI	at	Beijing	learn	French

'He 'studies linguistics at Beijing, not in Shanghai, and not French either.'

ii)	Ta	shi	zai	Beijing	xue	yuyanxue	de,
	he	SHI	at	Beijing	learn	linguistics	DE
	bu	shi	zai	Shanghai		xue	de
	NEG	SHI	at	Shanghai		learn	DE
	*(ye	bu	shi	zai	Beijing	xue	fawen	de)
	also	NEG	SHI	at	Beijing	learn	French	DE

'It was in Beijing that he studied linguistics, not in Shanghai *(not French).'
(adapted from Paul and Whitman (2008:415))

It is argued, therefore, that focus in 'bare-*shi*' (i)) is assigned via association with focus (Rooth (1985)) whereas *de* entails configurational focus (ii)) which is characteristic of clefts (Paul and Whitman (2008:415-419)). There are also examples where *shi* is omitted and focus seems to be freely assigned in the clause ending in *de*:

iii)	ta	lai	zhao	wo	de
	he	come	find	me	DE

'It was he who came to find me' (focus on *ta* 'he')
'It is that he came to find me.' (focus on the entire clause)
'It was finding me that he came for.' (focus on *zhao wo* 'find me')
'It was me whom he came looking for.' (focus on *wo* 'me') (Cheng (2008:243))

It has been argued that 'bare-*de*' involves an ellipsed copula *shi* in different positions which accounts for its different focus readings: (*shi*) *ta* (*shi*) *lai* (*shi*) *zhao wo de* (Zhu (1978:108-109), Yuan (2003:5-6), Paul and Whitman (2008:440-441)), which is arguably superior to Cheng (2008:237-243) who argues for free focus in the embedded clause which is too unconstrained. In this paper, I focus on *shi-de* constructions with both *shi* and *de* ('*shi-de* proper' (Paul and Whitman (2008:414)) leave 'bare-*shi*' and 'bare-*de*' for future research.

2b)	wo	shi	zuotian	mai	de	piao
	I	COP	yesterday	buy	DE	ticket

'It was yesterday that I bought the ticket.' (Simpson &Wu (S&W) (2002:169))[2][3]

S&W (2002:171-175) argue on comparative-historical assumptions that VdeO is derived from VOde via clitic repositioning of *de* (V *de*$_i$ O t$_i$) (cf Chao (1968:264), Li et al (1998:99-101), Sugimura (1999:48), Yuan (2003:6-7)). Furthermore, they argue that sentence-final *de* (2a)) is a determiner (D) while verb-adjacent *de* (2b)) is a past tense marker (T(past)), which makes the formation of *shi-de* constructions a case of 'lateral' grammaticalization (LG) where *de* is 'laterally' re-analysed from one type (nominal) of functional category to another (clausal) (D > T) (S&W (2002:198-202)).[4] S&W's hypotheses have recently been challenged by Long and Xiao (2011) who point out that the earliest examples of VdeO are attested in the Song dynasty (10th-13th century AD) while those of VOde are found in the Yuan dynasty (13th-14th century AD).[5] However, while Long and Xiao (2009, 2011) and Long (2013) focus on VdeO, they have nothing to say about VOde, which is pan-Chinese, or the relationship between the two, which is well discussed (see Hole (2011:1710-1713)). Moreover, Han (2012) and Zhan (2012) have more recently shown that VOde is actually attested in the Tang dynasty

[2] Wu (2004:chapter 4) contains largely identical material to S&W (2002). In this paper, I refer to the earlier paper and shall only cite the later one in cases of discrepancies.

[3] The general prohibition of VdeO in southern dialects extends to dialectal forms, since the southern variants of *de* (e.g. Cantonese *ge*) are only found in sentence-final position (Tang (2011:157)):

Cantonese:

i)	Kui	hai	kamyat	maai	sue	ge
	He	COP	yesterday	buy	book	GE
ii)	*Kui	hai	kamyat	maai	ge	sue
	He	COP	yesterday	buy	GE	book

'It was yesterday that he bought the book.' (Lee and Yiu (1998))

In this paper, I focus solely on Mandarin *shi-de* constructions and delay investigation on dialectal variants for the future.

[4] This is neatly summed up as follows:

'Syntactically, such D-to-T conversion is suggested to be an example of 'lateral grammaticalization', a process in which a functional head from one type of syntactic domain may under appropriate circumstances undergo re-interpretation as an equivalent functional head in a second domain, D and T here both being elements which (potentially) assign deictic reference to their complements and therefore having largely corresponding function in the nominal and clausal domains' (original brackets) (S&W (2002:170)).

'This additional route of categorial reanalysis does not result from any movement and reanalysis within a single lexical-functional domain, but instead critically involves the reanalysis of a functional category from one lexical-functional domain to a functional head in a discrete second type of domain, a kind of 'lateral' *cross-domain* reanalysis/grammaticalization' (original italics and brackets) (S&W (2002:201-202)).

[5] According to Long and Xiao (2011:307-312), the earliest example of VdeO is in *Buchanlin Wudeng Huiyuan* (1252 AD) (i)) whereas that of VOde in the *Yuanzaju* (14th century AD) (ii)):

i)	Tianxia	ren	zong	shi	can	de	di	chan
	beneath.world	people	always	SHI	study	obtain	DE	enlightenment
	Mou	shi	wu		de	di		
	I	SHI	understanding		obtain	DE		

'It is always by studying that people in this world obtain enlightenment, whereas it is by understanding that I obtain it.' (*Wudeng huiyuan* No, 17)

ii)	Wo gege		shi	shenme	shihou	chu	men	de
	I	older.brother	SHI	what	time	go.out	door	DE

'What time was it that my older brother went out?' (*Quanyuan qu, shagouji* No. 13)

(7th-10th century AD).[6] In this paper, I propose to account for the historical formation of Chinese *shi-de* constructions by providing an integrated analysis of both VOde and VdeO,[7] which is indeed a desideratum given how thin and incomplete the current historical research on *shi-de* constructions is (Han (2012:)).[8] Furthermore, although S&W's LG hypothesis no longer holds water philologically, their theoretical notion (footnote 4) will be defended here, since it is argued in this paper that *de* does undergo 'lateral' reanalysis from being nominal to clausal, and the new historical evidence entails interesting modifications to their LG hypothesis which, far from refuting it, actually support it.

This paper consists of five sections: in section 1, I critically outline S&W's (2002) original account on the formation of *shi-de* constructions and propose some counter-arguments; in section 2, I give a detailed descriptive analysis and formal representation of *shi-de* constructions (VOde/VdeO), which are analysed as biclausal with copula *shi* functioning as a matrix verb selecting two different types of clauses headed by *de* (CP/TP respectively);[9] in section 3, I analyse the historical formation of *shi-de* constructions and argue that *de* undergoes dual reanalysis from being nominal heads to clausal heads with cleft interpretation (n > C/D > T respectively); in section 4, I interpret the historical data within the Minimalist framework and propose a revised definition of S&W's LG hypothesis which aims to establish LG as a unique type of formal syntactic change (Tse (2016)); section 5 concludes where I point out some directions for future research.

Section 1.1: VOde > VdeO (DP > TP) (S&W (2002)):

S&W (2002:178-180) point out that VOde has a wider distribution than VdeO in that while VOde is compatible with both past-time (3ai)) and non-past events (3bi)), VdeO always expresses past tense (3aii)) and not otherwise (3bii)), which is a well-established observation (Paris (1979:98-105), Lee (2005:142-143), Paul and Whitman (2008:432), Hole (2011:1713)):

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[6] Han (2012:15) and Zhan (2012:156-157) posit the earliest attestation of VOde in *Dunhuang bianwenji* (900 AD):

   i)   Fei   shi   pusa   xingcang
            NEG   SHI   Buddha behaviour
            Ci   shi   sumen zuo   di
            This   SHI   layman do   DE
            'It is not the Buddha's behaviour. It was the laymen who did this.' (*Dunhuang bianwen ji*

[7] For my investigation of the diachrony of *shi-de* constructions, I have utilised the online concordancers of Peking University's historical Chinese corpora (ccl.pku.edu.cn) and the online compendium of Chinese philosophical texts (ctext.org), supplemented by primary sources in published articles and verified with primary texts. A full list of primary sources is given in the appendix.

[8] Han (2011, 2012) gives a long historical catalogue of VOde but little to no analysis; Yap et al (2010a, b, 2014) assert that sentence-final *de* is reanalysed from being a nominaliser to a sentence-final particle but provide no historical example or analysis; Zhan (2012) and Zhang (2012) analyse the formation of VOde in a usage-based account of Construction Grammar and do not provide any formal analysis; Long and Xiao (2009, 2011) and Long (2013) assume a straightforward reanalysis of VdeO and do not detail its formation. The genesis of *shi-de* constructions (VOde/VdeO) is hence an important topic which merits a proper treatment, which is the main goal of this paper.

[9] As noted by Meng (2014:2), modern analyses of *shi-de* constructions take them to be either monoclausal or biclausal, which take *shi* to be either a focus head (Teng (1979), Lee (2005), Xiong (2007)) or a verb (S&W (2002), Paul and Whitman (2008), Cheng (2008)) respectively. My analysis is closer to the latter, though with technical modifications as compared to previous accounts.

3ai)	ta	shi	zuotian	mai	piao	de		
	He	SHI	yesterday	buy	ticket	DE		

3aii)	ta	shi	zuotian	mai	de	piao		
	He	SHI	yesterday	buy	DE	ticket		

'It was yesterday that he bought a ticket.' (S&W (2002:169, 190))

3bi)	ta	shi	mingtian	cai	hui	qu	Beijing	de
	He	SHI	tomorrow	only.then	will	go	Beijing	DE

3bii)	*ta	shi	mingtian	cai	hui	qu	de	Beijing
	He	SHI	tomorrow	only.then	will	go	DE	Beijing

'It is only tomorrow that he will go to Beijing.' (S&W (2002:177, 189))

S&W (2002:187-191) hence propose that verb-adjacent *de* (e.g. *mai-de* in 3aii)) is a past-tense verbal suffix whereas sentence-final *de* is of a more general category, namely a determiner heading a complex noun phrase (CNP) meaning 'the fact/situation' (S&W (2002:180)). This is based on traditional analyses which analyse *shi-de* constructions as relating to discourse situations where copula *shi* selects a relative clause with an empty head noun (Kitagawa and Ross (1982:32), Ross (1983:225ff), cf Chao (1968:296), Li and Thompson (1981:589)). The literal interpretation of VOde, therefore, is argued to be thus: *ta shi zuotian mai piao de ø* 'the (situation) is that he bought the tickets YESTERDAY' (S&W (2002:180)).[10] Furthermore, S&W (2002:175-178) argue that sentence-final *de* (VOde) has strong past-time implicature, since it is both necessary and sufficient for denoting past-time events i.e. it is obligatory when the embedded clause denotes past tense (4a)) and it obligatorily denotes past tense (4b)) unless contradicted by overt temporal material (4c)):

4a)	Ta	shi	zuotian	qu	Beijing	*(de)
	He	SHI	yesterday	go	Beijing	DE

'It was yesterday that he went to Beijing.' (S&W (2002:176))

4b)	wo	shi	zuo	huoche	qu	Beijing	de
	I	SHI	sit	train	go	Beijing	DE

'It was by train that I went to Beijing.' (S&W (2002:175))

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[10] More recent analyses take VOde as denoting 'propositional assertion', which is translated as 'it is the case…' (Paul and Whitman (2008:421), Cheng (2008:237-239)). More will be said about this below.

4c)   Ta   shi   mingtian   *(cai   hui)   qu   Beijing de

         He   SHI   tomorrow   only.then   will   go   Beijing   DE

           'It is tomorrow that he will go to Beijing.' (S&W (2002:176))

S&W (2002:176-178) hence argue that sentence-final *de* is reanalysable as a past-tense marker and is cliticised onto the verb in the embedded clause as follows (S&W (2002:188-190)):
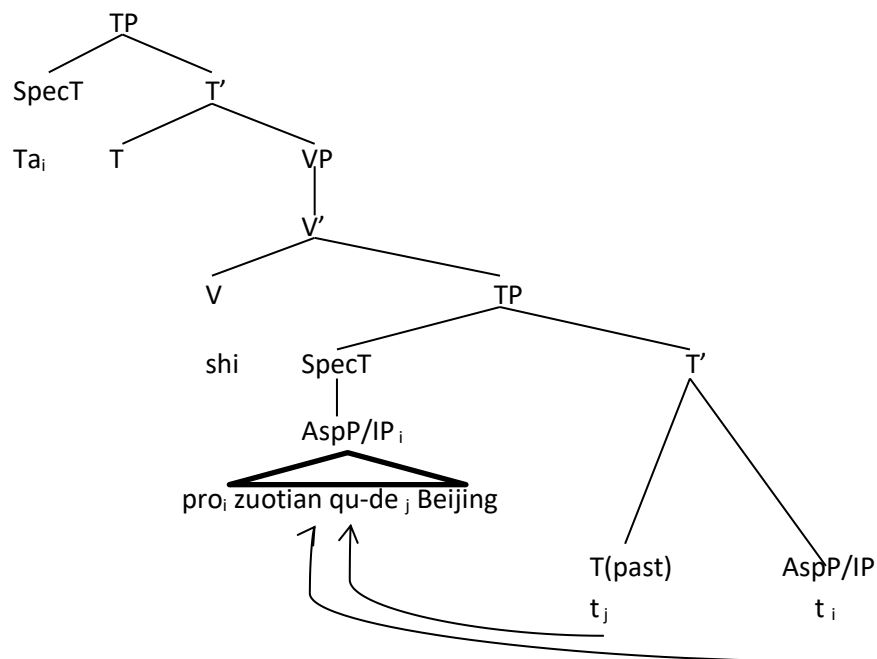
VOde (=3bi)) (cf S&W (2002:189)):

5a)
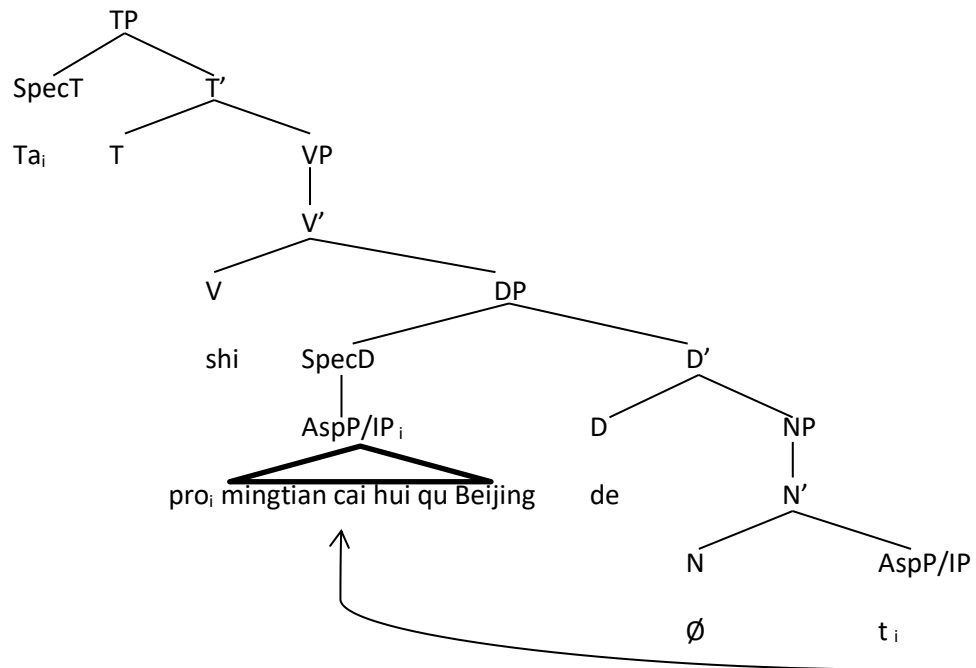
VdeO (=3a)) (cf S&W (2002:190)):

5b)

S&W (2002:196) analyse *shi* as a verb, since it displays typical verbal properties e.g. A-bu-A alternation in question formation (cf Huang (1988:47), Shi (1994:85), Paul and Whitman (2008:440)):

6) ni   shi   bu   shi   zuotian   lai   de

    You   SHI   NEG   SHI   yesterday   come   DE

    'Is it or is it not yesterday that you came?' (S&W (2002:196))

Paul and Whitman (2008:439-440) further point out that *shi* in *shi-de* constructions can be modified by adverbs and negators, which also suggests that it is verbal (cf Paris (1979:, Teng (1979:112)):

7) you/bu   shi   ta   jiejie kai   de   men

    Again/NEG   SHI   his   sister open   DE   door

    'It was again/not his sister who opened the door.' (Paul and Whitman (2008:439))

Moreover, *shi* shows temporal distinctions, another indication of verbhood:

8) hui   shi   wo   mingtian   zai   gongyuan-li

    FUT.AUX   SHI   I   tomorrow   at   park-LOC

    yao   jian   ta   de

    FUT.AUX   see   him   DE

    'It will be I who will see him in the park tomorrow.' (modified from Cheng (1983:76))

S&W (2002:196-197) hence propose a biclausal analysis where *shi* as the matrix verb selects two types of embedded clause headed by a determiner (VOde) (5a)) or a past-tense marker (VdeO) (5b)).[11] As for *de,* S&W (2002:186-188) adopt an antisymmetric derivation of relative clauses (Kayne (1994)) where *de* is a head-initial functional (D) element and the embedded relative clause rolls-up to its specifier and derives the correct word order (5a)) (Simpson (2001, 2003), cf Paul (2012)). When sentence-final *de* (VOde) is reanalysed as a past-tense marker (5b)), it has an essentially parallel structure but undergoes raising by cliticising onto the verb in the embedded clause (*zuotian qu-de* j *Beijing* t j, 5b)) (S&W (2002:190-195)). Such is a synopsis of S&W's analysis of *shi-de* constructions. In the next sub-section, I raise empirical evidence against their account and propose modifications to their formal representations.

Section 1.2: VOde/VdeO (DP/TP?):

There are numerous problems with S&W's analysis. First of all, they do not account for cleft focus in these constructions, namely the fact that focus is assigned to the element immediately after

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[11] In this analysis, S&W (2002:197) argue that the matrix subject of *shi* binds the empty subject of the embedded clause (*pro*) e.g. *wo*i *shi zuotian pro*i *lai de* 'it was yesterday that I came' (cf main text, ex. 5a-b)). It should be pointed out that this binding relation can also apply to other arguments (e.g. objects) or not apply at all:

shi (cf introduction, ex. 1)).[12] Secondly, their postulation of an empty noun after *de* in VOde (5a)) denoting 'situation/fact' is too abstract, since sentence-final *de* can never select nominal complements in *shi-de* constructions, even if it means 'situation/fact':[13]

9)   Zhangsan   shi   qunian   sha   niu   de   (*qingxing/*shishi)

        Zhangsan   SHI   last.year   kill   cow   DE   (situation/fact)

        'It was last year that Zhangsan killed cows.' (Shyu (2016:#2))

Thirdly, S&W (2002:183-185) support their DP/TP analysis for VOde/VdeO by arguing that when *shi-de* constructions denote non-past events (VOde), the embedded clause prohibits extraction of adverbs (10a)) and WH-elements (10b)), whereas in past-time events (VOde/VdeO), such extraction is possible (10b-c)), which suggests that non-past VOde is an island (DP) whereas past-time V(de)O(de) is not (TP):

10ai)   *wo   meitian   dou   shi   hui   qu   Beijing de

        I   everyday   DOU   SHI   will   go   Beijing DE

        'I will go to Beijing everyday.' (S&W (2002:183))

10aii)   *mingtian   ta   shi   hui   qu   Beijing de

        Tomorrow   he   SHI   will   go   Beijing DE

        'Tomorrow he will go to Beijing.' (S&W (2002:183))

10b)   *ni   shi   weishenme/zenme   cai   hui   qu   Beijing de

        You   SHI   why/how   only.then   will   go   Beijing DE

        'Why/how is it that you will go to Beijing?' (S&W (2002:183))

10ci)   zuotian   wo   shi   zai   xuexiao   kanjian ta   de

        Yesterday   I   SHI   at   school   see   he   DE

        'Yesterday it was at school that I saw him.' (S&W (2002:185))

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[12] Wu (2004:153-156) tentatively proposes LF-movement/binding for the element adjacent to *shi* but does not develop this in detail, which is a major weakness in their analysis (Paul and Whitman (2008:434), Hole (2011:1715)).

[13] When sentence-final *de* selects nominal complements, it is usually analysed as relative clause constructions:
    i)   Zhangsan   shi   qunian   sha   niu   de   (ren)
            Zhangsan   SHI   last.year   kill   cows   DE   person
            'Zhangsan is the person who killed cows last year.' (Shyu (2016:#2))
As relative clauses have a different interpretation from cleft constructions (cf main text, 9)), it should be analysed as a separate construction, surface similarities notwithstanding (S&W (2002:179-180), cf Lee (2005:83), Zhang (2006:47), Paul (2009:19-20)) (*pace* Cheng (2008:243ff) who proposes that copula *shi* freely assigns focus to any constituent in the relative clause, which is too imprecise and unconstrained (Hole (2011:1719)).

10cii)	ni	shi	weishenme/zenme	lai	xuexiao	de?
	You	SHI	why/how	come	school	DE

'Why/how is it that you came to school?' (S&W (2002:185))[14]

This is problematic, since not only are S&W's allegedly ungrammatical examples of VOde (10a-b)) accepted by all my informants (author included), there is clear evidence that VOde does allow extraction even in non-past contexts (Shi (1994:84), Paul and Whitman (2008:445)):

10d)	dui	ni	ta	shi	yiding	hui	hao	yi	beizi	de
	To	you	he	SHI	definitely	will	be.good	one	lifetime	DE

'To you, he will definitely be good for the rest of his life.'

(Paul and Whitman (2008:445))[15]

S&W's DP analysis of VOde, therefore, requires modification. Fourthly, S&W (2002:172-175, 190-195) argue that it is cross-linguistically common for clitics to change hosts and that the clitic movement of *de* (V de$_i$ O t$_i$) parallels the formation of Chinese aspectual suffix *-le* from sentence-final *liao* (V O *liao* > V *le* O) (. These comparisons are highly superficial and dubious, since I have found no cross-linguistic parallel for their proposed clitic movement of *de,* and the formation of Chinese suffix *-le* has been argued to be affixation in V-to-v movement which clearly differs from their proposed encliticization of *de.*

Finally, S&W's allegedly strong past-time implicature in sentence-final *de* (VOde) is too strong, since sentence-final *de* is neither necessary nor sufficient for past-time events, as shown in examples where it is optional even in past-time events (11a)), and even in the absence of overt temporal specification, it does not necessarily denote past-time events and may denote present/habitual events (11b)):

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[14] The corresponding VdeO forms are also argued to permit extractions:

i)	Zuotian	ta	shi	gen	Zhangsan	lai	mai-de	piao
	Yesterday	he	SHI	with	Zhangsan	come	buy-DE	ticket

'Yesterday it was with Zhangsan that he came to buy tickets.' (S&W (2002:184))

ii)	Ni	qunian	shi	weishenme/zenme	qu-de	Beijing?
	You	last.year	SHI	why/how	go-DE	Beijing

Last year how/why was it that you went to Beijing?' (S&W (2002:184))

[15] One might object that the adverb here (*dui ni* 'to you') is base-generated in the matrix clause and is topicalised without crossing *de* ([*dui ni*]$_i$ *ta* t$_i$ *shi yi ding hui hao yi beizi de*). However, it has been pointed out that the object, which must be base-generated in the embedded clause, can also be extracted in non-past contexts, which is good evidence for extraction in VOde:

i)	Zhe-ge	dongxi	ta	shi	yinggai	ban-de-dong	de
	This-CL	thing	he	SHI	should	remove-able-move	DE

'This thing, he should be able to move it.' (Paul and Whitman (2008:422))

11a) Zhangsan   shi   zuotian   da   Lisi   (de)

      Zhangsan   SHI   yesterday   hit   Lisi   DE

      'It was yesterday that Zhangsan hit Lisi.' (Lee (2005:3))

11b) taiyang yiding   shi   cong   dong   bian   chulai de

      sun   definitely   COP   from   east   side   rise   DE

      'It is definitely from the east that sun rises.' (Tang (1980:272))

Their allegedly obligatory use of future auxiliaries in VOde to override past-time implicature is also too strong, since it has been argued that future auxiliaries in VOde are only obligatory with telic verbs (12a)) and not with atelic ones (12b)):

12a) Wo   shi   mingtian   *(yao) xie   gongke   de

      I   SHI   tomorrow   want   write   homework   DE

      'It is tomorrow that I shall do my homework.' (Lin (2014:5))

12b) Wo   shi   mingtian   (yao)   kaishi shangban   de

      I   SHI   tomorrow   want   start   go.to.work   DE

      'It is tomorrow that I (shall) start going to work.' (Lin (2014:5))

Moreover, the use of future tense auxiliaries in VOde need not suggest that sentence-final *de* has strong past-time implicature which needs to overridden by overt non-past material, since it has been argued that verbal auxiliaries are used in VOde as part of the assertive force of sentence-final *de* (Li and al (1998:98-99)), which correlates with its discourse function as expressing assertions (footnote 10). It is hence doubtful whether sentence-final *de* has so much past-time implicature that it can be reanalysed as a past-tense marker.

There are hence weaknesses in S&W's account, namely the focus-assignment in *shi-de* constructions, the syntactic category of sentence-final *de* (9-10)) and the relationship between VOde and VdeO (11-12)). In the next section, I provide a detailed comparison between VOde and VdeO and propose revised syntactic representations.

Section 2: synchronic analysis of *shi-de* constructions (VOde/VdeO):

The empirical relationship between VOde and VdeO goes far beyond S&W's account, since it has been pointed out that VOde has a wider distribution than VdeO both in terms of focus types and tense, aspect and mood (TAM) values.[16] These will be analysed in turn.

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[16] VOde also allows for adjectives (i)) and nouns (ii)) in the embedded clause, which is impossible in VdeO:
  i)   Nei   zhang   zhuozi shi   fang   de
        DEM   CL   table   SHI   square DE
        'That table is square.' (Paris (1979:54))
  ii)   Na   xie   meigui dou   shi   fenhong se   de

It has been noted that while *shi* only assigns narrow focus to specific non-verbal constituents in VdeO (subject, adverb, object), it assigns both narrow and broad focus in VOde where not only individual constituents (subject, adverb, object) but also verbal projections (V, VP) can be focussed too (Yuan (2003:6-7), Lee (2005:175-186), Paul and Whitman (2008:428)):[17]

Subject focus (VOde/VdeO):

9a)   shi   Zhangsan   xie   shi   de

       SHI   Zhangsan   write   poetry   DE

       'It is Zhangsan who writes poems.'(Hole (2011:1711))

9b)   shi   Zhangsan   xie   de   shi

       SHI   Zhangsan   write   DE   poetry

       'It was Zhangsan who wrote poetry.' (Hole (2011:1710))

Adjunct focus (VOde/VdeO):

10a)   Zhangsan   shi   yong   maobi   xie   shi   de

       Zhangsan   SHI   use   brush   write   poetry   DE

       'It is with a brush that Zhangsan writes poetry.' (Hole (2011:1711))

10b)   Zhangsan   shi   yong   maobi   xie   de   shi

       Zhangsan   SHI   use   brush   write   DE   poetry

       'It was with a brush that Zhangsan wrote poetry.' (Hole (2011:1710))

Object focus (VOde/VdeO):

11a)   Zhangsan   shi   xie   shi   de

       Zhangsan   SHI   write   poetry   DE

       'It is poetry that Zhangsan writes.' (Hole (2011:1711))[18]

                   DEM   CL   rose   DOU   SHI   pink   colour   DE
                   'Those roses are all pink.' (adapted from Ching and Rimmington (1998:136))
As this is a comparison between VOde and VdeO, I focus on clausal types of VOde in relation to VdeO.
[17] Focus-types here are used in general agreement with traditional definitions of 'narrow' and 'broad' focus, the former being used with non-verbal categories and the latter with verbs/predicates (Selkirk (1984), Lambrecht (2001)).
[18] I strongly disagree with Hole's (2011:1711) intuition that object focus in VOde is impossible, which is supported by many examples in prominent publications:
   i)   Wo qunian   shi   jian-guo Wang   xiaojie   de
           I   last.year   COP   see-ASP Wang   Miss   DE

11b) Zhangsan   shi   xie   de   shi

      Zhangsan   SHI   write   DE   poetry

      'It is poetry that Zhangsan wrote.' (Hole (2011:1711))

Verb focus (VOde only):

12a) Zhangsan   shi   kandao Wang   xiaojie de

      Zhangsan   SHI   see   Wang   miss   DE

      'Zhangsan *saw* Miss Wang.' (Cheng (2008:262))

12b) *Zhangsan   shi   xie-de   shi

      Zhangsan   SHI   write-DE   poem

      (intended) 'Zhangsan *wrote* poems.' (Hole (2011:1711))

TP focus (VOde only):

13a) Zhangsan   shi   kandao Wang   xiaojie de

      Zhangsan   SHI   see   Wang   miss   DE

      'It is the case that Zhang saw Miss Wang.' (Hole (2011:1711))

13b) *Zhangsan   shi   xie-de   shi

      Zhangsan   COP   write-DE   poem

      (intended) 'It is the case that Zhangsan wrote poems.' (Hole (2011:1711))

13c) Shi   Xilaren zui   xian   kaishi niang   jiu   de

      SHI   Greek   most   first   start   brew   wine   DE

      'It is the case that the Greeks were the first to brew wine.' (Cheng (2008:253))

13d) *Shi   Zhangsan   xie-de   shi

      SHI   Zhangsan   write-DE   poetry

      (intended) 'It is the case that Zhangsan wrote poems.' (Hole (2011:1711))[19]

'It was Miss Wang whom I saw last year.' (Shi (1994:82))

[19] There are two types of broad focus, namely one in which the subject is part of the clausal 'broad' focus (main text, 13c-d)) and the other in which it is part of the presupposition (main text, 13a-b)). Although Paul and Whitman (2008:420-422) argue that there is no focus in these examples, VOde does allow for clausal alternatives, which suggests broad focus (footnote 17):

i) Zhangsan   shi   da-le   Lisi,   bu   shi   mo-le   Wangwu   de
    Zhangsan   SHI   hit-PERF Lisi   NEG   SHI   touch-PERF Wangwu   DE
    'It is the case that Zhangsan hit Lisi, not that he touched Wangwu.' (Lee (2005:185))

In both VOde and VdeO, therefore, *shi* assigns cleft-focus to its immediately adjacent element*,* and while VOde allows for both narrow and broad focus (9a), 10a), 12a), 13a, c)), VdeO prohibits broad focus (13b, d)) and allows for narrow focus only (9b), 10b), 12b)). The only exception is object focus, which does not seem to obey the adjacency requirement in focus assignment (11)). This may be related to the fact that *shi* is necessarily preverbal and can never come between the verb and its object:[20]

14) *Wo zuotian   qu   kan   shi   wo   jiejie   de

     I   yesterday   go   see   SHI   I   older.sister DE

     (intended) 'It was my older sister that I went to see yesterday.' (Li (2008:763))

The non-adjacency in object-focus assignment suggests that it is a case of association with focus rather than configurational focus-assignment (Shyu (2016:4-6)).[21] More will be said about this below.

Section 2.2: Tense, aspect and mood:

In addition to its past-time denotation (section 1, 3a-b)), it has been shown that VdeO prohibits negation, modal auxiliaries, tense/aspectual markers*,* and quantificational *dou* in the embedded clause*,* all of which are possible in VOde (Sugimura (1998:48- 52), Kimura (2003:305), Paul and Whitman (2008:430-431)):

Tense/aspectual markers (VOde only):

15a) Zhangsan   shi   shang   ge   xingqi   qu-le-guo   Beijing de

      Zhangsan   COP   last   CL   week   go-PERF   Beijing DE

      'It was last week that he went to Beijing.' (Hole (2011:1713))

---

ii)   ta   lai   zhao   wo   de,   bu   shi   wo   qu   zhao   ta   de
       he   come   find   me   DE   NEG   SHI   I   go   find   him   DE
       'It is the case that he came to find me, not that I went to find him.' (Cheng (2008:238))

[20] This is known as 'object uncleftability' (Yang and Ku (2010:424)), which is a diagnostic property of *shi-de* constructions (Tang (1980:252), Huang (1988:47-48), Luo (1992:58), Chiu (1993:127-128), Tsao (1994:93-95), Shi (1994:82), Lee (2005:4, 81), Meng (2014:13-14), Shyu (2015:108, 2016:#1)).

[21] Alternative strategies of object focus-assignment do show adjacency, namely object-fronting, which may be unified with all the other types of focus-assignment (Meng (2014:4-5)):

i)   Shi   Lisi   Zhangsan   zuotian   henhende   da-le   yidun   de
      SHI   Lisi   Zhangsan   yesterday   cruelly   hit-PERF once DE
      'It was Lisi whom Zhangsan cruelly beat up once yesterday.'

ii)   Zhangsan   zuotian   shi   fan   chi-le   yi-da-wan   de
      Zhangsan   yesterday   SHI   rice   eat-PERF   one-big-bowl   DE
      'It was rice that Zhangsan ate a large bowl of yesterday. (adapted from Meng (2014:4-5))

Another type of object focus-assignment is found in the pseudo-cleft construction (iii)), which is clearly a separate construction and will not be analysed further:

iii) Wo   zuotian   qu   kan   de   (ren)   shi   wo   jiejie
      I   yesterday   go   see   DE   person SHI   I   older.sister
      'The person whom I went to see yesterday was my sister.' (adapted from Li (2008:763))

15b) Shi   ta   dapo(*-le/-guo) de   beizi

COP   he   smash-ASP   DE   cup

'It was he who smashed the cup.' (Paul and Whitman (2008:430))

Modal auxiliaries (VOde only):

16a) Ta   shi   shang ge   xingqi neng/yao   qu   Beijing de

He   COP   last   CL   week   can/want   go   Beijing DE

'It was last week that he could/wanted to go to Beijing.' (Hole (2011:1713))

16b) *ta   shi   shang ge   xingqi neng/yinggai canjia de   huiyi

He   COP   last   CL   week   can/should   attend DE   meeting

'It was last week that he could/should have attended the meeting.'

(Paul and Whitman (2008:430))

Negator (VOde only):

17a) Wo   shi   conglai bu   chouyan   de

I   COP   ever   NEG   smoke   DE

'I have never smoked.' (Paul and Whitman (2008:422))

17b) *ta   shi   shang ge   xingqi bu/mei qu   de   xuexiao

He   COP   last   CL   week   NEG   go   DE   school

'It was last week that he did not go to school.' (Paul and Whitman (2008:430))

Dou (VOde only):

18a) wo   shi   dao   si   dou   hui   xiang-zhe   ni   de

I   COP   till   death DOU   will   think-ASP   you   DE

'It is the case that I will think of you till I die.' (Paul and Whitman (2008:423))

18b) *Wo   shi   gen   suoyoude   linju   dou   chao   de   jia

I   SHI   with   all   neighbour   DOU   quarrel DE   fight

'It was with all the neighbours that I quarrelled.' (Paul and Whitman (2008:431))

While VdeO disallows other TAM markers (15b), 16b)), negators (17b)) and *dou* (18b)), VOde allows them all (15a), 16a),17a), 18a)), which suggests that sentence-final *de* has wider scope than verb-adjacent *de* (Paul and Whitman (2008:445-448)). More will be said about this below.

<u>Section 2.3: VOde/VdeO: a preliminary partition:</u>

The relationship between VOde and VdeO is hence clear: while *shi* assigns focus to its immediately adjacent element (barring object focus), VOde allows for more focus types and TAM values than VdeO, which may be summarised thus (cf Lee (2005:199), Paul and Whitman (2008:428), Hole (2011:1714)):

Table 1:

	VOde	VdeO
Focus types	Narrow (subject, adverb, verb, object) Broad (VP/TP)	Narrow (subject, adverb, object)
TAM	All tenses All TAM markers allowed Negators allowed Quantificational *dou* allowed	Past tense only No TAM markers other than *de* Negators disallowed Quantificational *dou* disallowed

In the next section, I propose formal representations to capture these empirical properties.

<u>Section 2.4: VOde/VdeO (CP/TP):</u>

As *shi* is necessarily preverbal (section 2.1), it may be argued that *shi* is an auxiliary verb, namely a copula verb, which is indeed the standard function of *shi* (Tang (1983), Huang (1988)) and this ties in with the cross-linguistic correlation between copulas, relative clauses and clefts e.g. *it*-clefts (Harris and Campbell (1995:166-167)).[22] This typological property of copulas and clefts may be accounted for as a diagnostic property of copula verbs which often have identificational/specificational force (Higgins (1973)).

and hence assign focus to their complements (Higgins (1973:

A copular analysis of *shi* hence allows us to unify *shi-de* constructions and all other cleft-constructions e.g. *it*-clefts:

Shi-de constructions (cf introduction, ex. 1)):

19a)	subject	SHI	XP	relative clause	de
	matrix.subject	COP	cleft-focus	cleft-presupposition	DE

---

[22] Cross-linguistically, cleft constructions often consist of copula verb assigning focus to the adjacent element in their relative clause complements (Heycock and Kroch (1999, 2002)), and cleft bipartition is commonly derived via A'-movement which separates the focussed element from the presupposition e.g. *it*-clefts (Heggie (1993:3-4), Hedberg (2000:). The difference in information structure between Chinese *shi-de* constructions and *it*-clefts may be due to the relative ordering of relative clauses, since Chinese relative clauses precede the head noun and copula *shi* hence bipartitions cleft focus and presupposition within the relative clause rather than between the relative clause and the head noun as in *it*-clefts (cf Choi (2006:35-40), Long (2013:436-444), Hole and Zimmermann (2013:303-306)). More will be said about this below.

It-clefts:

19b)   pro   BE   XP   relative clause

        expletive   COP   cleft-focus cleft-presupposition

While the cleft bipartition in *it*-clefts (19ii)) is drawn between the relativized phrase (XP) and the relative clause, in *shi-de* constructions (19i)) it lies between the element closest to copula *shi* and the rest of the embedded clause, which may be correlated with the typology of relative clauses, as in western European languages relativization commonly entails leftward movement of the relativized element whereas in Chinese the relativized element comes after the relative clause (Choi (2006:35-40), Hole and Zimmermann (2013:303-306), Long and Xiao (2013:436-444), cf footnote 15). *Shi,* therefore, can be argued to be a copula verb with focus-assigning properties (Cheng (2008:249-251), Meng (2014:18)), which may be superior to its alternative analysis as a focus head (footnote 9), since *shi* is clearly verbal (section 1.1, 8-9)) and the focus-head analysis cannot account for the preverbal distribution of *shi* (section 2.1).[23] In my analysis, therefore, *shi* is analysed as a focus-assigning copula verb which necessarily precedes the lexical verb in the embedded clause. There are two main competing analyses for copula *shi* which conform to contemporary debates about copulas (Bowers (2001)), namely as a raising verb (T) (Huang (1988:49-55), Paul and Whitman (2008:435-438), Cheng (2008:245-246), cf Stowell (1978, 1981, 1983), Williams (1983)) or as a unique functional head (Pred) (Lohndal (2009:221), van Gelderen (2015:5), cf Bowers (1993, 2001), den Dikken (2006)). The raising verb analysis is problematic, since it entails that the matrix subject is base-generated below copula *shi* and hence leaves an intervening trace between *shi* and its complement, which makes it unclear how adjacency in focus-assignment can be accounted for (Meng (2014:24-25, 99-100)). Paul and Whitman (2008:436-438) propose that this intervening subject-trace is deleted at the interfaces and focus is assigned via surface PF-adjacency to the element closest to *shi*, but this is dangerously circular since there is no independent focus-assigning mechanism which would account for PF-adjacency. It may hence be more attractive to propose that *shi* instantiates a unique functional head

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[23] Yang and Ku (2010:426-428) argue that *shi* as a focus head regularly comes after epistemic modals in C (i)) and before deontic modals in T (ii)) (cf Tsai (2010)), and since head-to-head verb movement is blocked by Minimality (Yang and Ku (2010:424-425)), *shi* in Foc necessarily precedes lexical verbs:

ia)   Xiaodi   dagai   shi   qu   Taibei   de
        Xiaodi   probably   SHI   go   Taibei   DE
ib)   *Xiaodi shi   dagai   qu   Taibei   de
        Xiaodi   SHI   probably   go   Taibei   DE
        'It is probably Taibei that Xiaodi is going.' (Yang and Ku (2010:418))
iia)   *Xiaodi bixu   shi   qu   Taibei   de
        Xiaodi   must   SHI   go   Taibei   DE
iib)   Xiaodi   shi   bixu   qu   Taibei   de
        Xiaodi   SHI   must   go   Taibei   DE
        'It is Taibei that Xiaodi must go.' (Yang and Ku (2010:418))

The alleged word-order is controversial, since it has been pointed out that it is possible to re-arrange modal elements in relation to *shi* which suggests a biclausal structure (Meng (2014:100ff)):

iii)   Tamen   shi   dagai   dasuan jidian   guolai
        They   SHI   probably   intend what.time   come.over
        'It is probably when they intend to come over?' (Meng (2014:6))
21ii)   Tamen   bixu   shi   hen   xingyunde   cai   zhong   na   ti
        They   must   SHI   very   luckily   only.then guess.right that   question
        'It must be very luckily that they guessed that question right.' (Meng (2014:7))

(Pred) with the subject introduced as its specifier (Bowers (1993:595)), which not only circumvents the problem of trace-intervention but also allows us to account for the adjacency in focus-assignment and cleft-bipartition, which can now be derived via A'-movement in the embedded clause (Hole (2011:1724-1726), Meng (2014:107-111), cf Chomsky (1971, 1976), Heggie (1993), Kiss (1998, 1999))).[24] As the two types of clausal complements (VOde/VdeO) have different structures, it may be argued that sentence-final *de* (VOde) is a head-final complementiser (C) selecting a clausal complement (TP), which is in line with standard analyses of Chinese sentence-final particles (SFP) (Paul (2012)) and this also accounts for discourse function of VOde as assertions (footnote 10).[25] Furthermore, as sentence-final *de* has scope over the whole embedded clause (TP), not only may there be TAM markers, negators and *dou* but A'-movement is also possible for either specific constituents in the embedded clause or the entire clause itself, which entails both narrow and broad focus in VOde (section 2.3). Verb-adjacent *de* (VdeO), on the other hand, seems to be a verbal suffix denoting past-tense (T(past)), and since it is traditionally assumed that Chinese has verb movement to little v where it is affixed with aspectual suffixes (Huang (1982), Ernst (1995), Lin (2001)), *de* may be argued to undergo 'affix-hopping' from T(past) to little v where it is suffixed onto the verb, which would pre-empt all intermediate functional heads and disallow other TAM markers (T/Mod/Asp), negation (Neg) and *dou* (cf English lexical verbs (Pollock (1991)).[26] Furthermore, as verbal suffix *de* is merged within the embedded clause, it does not have scope over the whole embedded clause and hence cannot give rise to broad focus as it is impossible for the embedded clause to undergo A'-movement.[27][28] VOde and VdeO, therefore, may be represented thus:

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[24] Although Cheng (2008:245 fn 8) is sceptical about applying den Dikken's (2006) relator analysis (vis-à-vis Pred) to Chinese, Pred/R strongly resembles little v in its function of introducing external arguments and should be universally projected (Bowers (1993:595-596, 2002:183ff), cf Hale and Keyser (1993)). Furthermore, Bowers' configurational approach towards predication is arguably superior to traditional raising verb analyses since it provides a unified approach towards predication (Bowers (2001:301)) as opposed to mere co-indexing.
[25] This analysis subsumes sentence-final *de* within the inventory of sentence-final particles in Chinese (cf Paul (2005:5, 2009:5-6), Paul and Gasde (1996:265)), which are analysed as C elements in the right periphery and are derived via roll-up movement of the TP complement to SpecC (Paul (2009:2, Xiong (2007:322-323), cf Kayne (1994:, cf footnote . Furthermore, in contrast to DPs, CPs in Chinese do allow extraction (Paul (2009:19-20), Xiong (2007:323)).
[26] This is a slight modification on Paul and Whitman (2008:435-438) who argue that verbal suffix *de* is base-generated in little v when little v is standardly taken to host aspect and not tense (Cinque (1999)).
[27] While Paul and Whitman (2008:431-432) argue that A'-movement is not permitted in *shi-de* constructions, object-fronting has been shown to be possible in VOde (see footnote 21) (cf Hoh and Chiang (1990), Cheung (2008, 2013)), which can be also extended to VdeO:

i)	Ta	shi	fan	chi	de	yi	da	wan
	He	SHI	rice	eat	DE	one	big	bowl
ii)	Shi	fan	ta	chi	de	yi	da	wan
	SHI	rice	he	eat	DE	one	big	bowl

'It was rice that he ate one big bowl of.' (cf footnote 21, ii-iii))

It can hence be argued that cleft-focus in *shi-de* constructions is derived via A'-movement, as per standard assumptions in syntax-semantics (Chomsky (1976)).
[28] Hole (2011:1721-1722) proposes to unify VOde and VdeO by arguing that *de* is a C-element and VdeO is derived via object fronting before remnant movement of the embedded clause to SpecC (Hole (2011:1721-1722)). Hole (2011:1722) supports this by arguing that objects in VdeO are necessarily definite (Kimura (1999:305), Sugimura (2003)), which conforms to object fronting in Chinese (Shyu (2001), Paul (2002)):

i)	*Wo	shi	zai	tushuguan	kan	de	yi	ben	shu
	I	SHI	at	library	read	DE	one	CL	book

(intended) 'It was in the library that I read a book.' (Hole (2011:1722))

VOde:

20a)

PredP[29]
SpecPred   Pred'
subject   Pred   FocP
          shi   SpecFoc   Foc'
          [u-Foc]   subject $_j$ Foc   CP
                    adverb $_k$ SpecC   C'
                    verb $_l$ TP $_i$ C   TP
                    TP $_i$ SpecT   T'   de   t $_i$
                    [i-Foc]   t $_j$ T   vP
                                              Specv   v'
                                              t $_j$ AdvP   v'
                                                        t $_k$ v   VP
                                                                 t $_l$ V'
                                                                          V   DP
                                                                          t $_l$ object
                                                                                          [i-Foc]

Hole (2011:1725-1726) also argues that the fronted object in VdeO may undergo LF-movement to the left-periphery of *de*, which accounts for why object focus is possible in VdeO and not in VOde. This analysis is problematic, since I have argued that VOde does allow object-focus and the non-adjacency in object-focus-assignment in both VOde and VdeO may be unified as association with focus (see section 2.1). Furthermore, the purported definiteness of objects in VdeO is contentious, since Lee (2005:142-150) argues for the opposite, namely that objects in VdeO cannot be definite:

ii)   *Ta shi   zuowan   qu   de   na   jia   riben   liaoli   dian
       He SHI   last.night   go   DE   DEM   CL   Japan   cuisine   shop
       (intended) 'It was last night that he went to that Japanese restaurant.' (Lee (2005:146))

Most of my informants also do not support obligatory definiteness of objects in VdeO, which places Hole's object-fronting on very shaky grounds. Moreover, it is unclear how Hole's analysis can account for the absence of TAM/neg/*dou* in VdeO, since he resorts to linearization principles which are excessively complicated and dubious (Hole (2011:1721ff)). In my analysis, I propose that *de* in VdeO is a past-tense suffix derived via V-to-v movement which straightforwardly accounts for all the restrictions in VdeO.

[29] In representing copula *shi*, I only display Pred and its subject (SpecPred), allowing for the possibility that it is further merged with higher elements in T which account for its tense/finiteness properties (section 1.1).

VdeO:

20b)

```
                PredP
             /        \
        SpecPred      Pred'
           |         /     \
      Subject Pred        FocPTP
              |          /      \
             shi     SpecFoc    Foc'
           [u-Foc]  subject_i  /    \
                     Adverb_j Foc    TP
                     [i-Foc]       /    \
                               SpecT    T'
                                t_i    /   \
                                   T(past)  vP
                                    (de)   /   \
                                        Specv   v'
                                         t_i   /  \
                                            AdvP   v'
                                             t_j  /   \
                                                 v     VP
                                            V_k-de     V'
                                         [i-T:past] V  /  \
                                                  t_k   DP
                                                      object
                                                      [i-Foc]
```
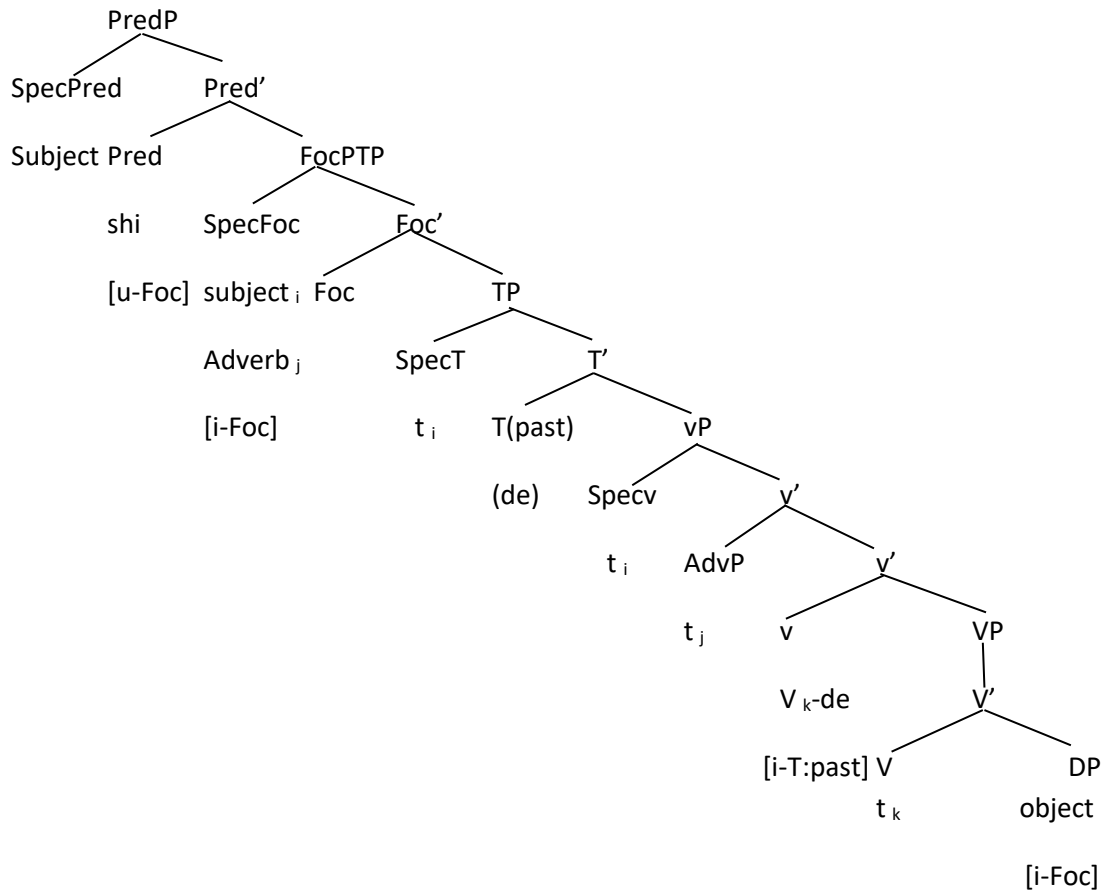
The empirical relationship between VOde (20a)) and VdeO (20b)) may hence be understood in terms of scope: copula *shi* (Pred) assigns focus ([u-Foc]) to its clausal complement (CP/TP), and while sentence-final *de* (C) selects a clausal complement (TP) in which there may be TAM markers, negators and *dou* as well as A'-movement for either specific constituents in the embedded clause (narrow focus) or the entire clause itself (broad focus), verb-adjacent *de* (T(past)) is suffixed onto the verb via affix-hopping and V-to-v *Move* which not only pre-empts all other TAM markers, negators and *dou* but also restricts A'-movement to certain constituents in the embedded clause (narrow focus) only. Such is a formal analysis of *shi-de* constructions. In the next section, I analyse their historical formation.

Section 3: diachronic analysis of *shi-de* constructions (VOde/VdeO):

Recent historical analyses have proposed that *shi-de* constructions are formed in Medieval Chinese where copula *shi* selects two different types of nominalised relative clauses headed by *de*,[30] namely phrase-final *de* (VOde) (Han (2011, 2012), Zhan (2012)) and phrase-medial *de* (VdeO) (Long and Xiao (2009, 2011), Long (2013)). Before I analyse the diachrony of *shi-de* constructions, I briefly outline the historical evolution of Chinese *de* and explain how the two types of nominalised clauses may be represented.

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[30] As is common in Asian languages, Chinese uses nominalisation as a strategy for constructing relative clauses (Yap and al (2010)).

Section 3.1: *de* (n > D):

Modern Chinese *de* is widely analysed as an adnominalizer capable of selecting different types of nominal complements, and it is argued to be merged relatively low on the nominal spine given its position relative to demonstratives, classifiers, numbers, and adjectives (del Gobbo (Paul (2015)), namely a low determiner position (D/n). In the earliest attestations, *de* is regularly placed in phrase-final position from which it seems to have been shifted upwards via frequent apposition with co-indexed nouns (Lu (1943), Cao (1999)).[31] As *de* is originally a phrase-final nominaliser, it can be analysed as a little n head selecting a clausal complement which raises to Specn to derive the correct word order (Yap (2010)), and assuming the universal DP-hypothesis (Longobardi (1994)), it can also be argued that *de* in little n has an *Agree* relation with a higher D head in marking referentiality/definiteness in the nominalised structure. Moreover, its diachronic evolution suggests that it may have been shifted upwards to a higher functional head in the nominal domain. The two relative clause structures (VOde/VdeO) may hence be analysed as two different nominal structures, namely nP (VOde) and DP (VdeO) which represent two different chronological stages in the history of Chinese *de*.[32] In the next sub-sections, I propose a formal account of the formation of *shi-de* constructions (VOde/VdeO).

Section 3.2: VOde (nP > CP):

The earliest attestation of VOde being selected by copula *shi* is in *Zhenzhou liji Huizhou chanshi yulu* (9th century AD) where the complement seems to have an equational relationship with the matrix subject (Han (2012:15), Zhan (2012:155)):

20) 道流　是　　爾　　目前　用　　底

daoliu shi er muqian yong di

Daoism SHI you now use DE

'Daoism is what you are using now.' (*Zhenzhou liji Huizhou chanshi yulu*)

This construction gains currency and structural ambiguity in examples where the complement of copula *shi* is used contrastively and hence implies focus (Zhan (2012)）)：

---

[31] The phrase-final nature of the earliest attestations of *de* strongly supports its origins in Classical Chinese *zhe* rather than Classical Chinese *zhi* (Liu (2008))*,* since the latter never occurs phrase-finally without a nominal complement (Djamouri (1999)) whereas the former regularly occurs phrase-finally and resembles the earliest examples of *di* (The adnominalizing similarities between Classical Chinese *zhi* and Modern Chinese *de* are hence entirely superficial and cannot be taken for granted, as has been done in traditional literature (Wang (1958), Mei (1988), Pulleyblank (1995)).

[32] This also seems to fit with the chronology of *shi-de* constructions, since VOde is attested earlier than VdeO (see footnotes 4 and 5).

21)

非	是	菩萨	行藏，
Fei	shi	pusa	xingcang
NEG	SHI	divine.beings	behaviour

此	是	俗门	作	底
Ci	shi	sumen	zuo	di
This	COP	laymen	do	DE

'This is not the behaviour of divine beings; this is the doings of laymen.'

(*Dunhuang bianwenji* 敦煌变文集)

As the relative clause here (*suren zuo di* 'the doings of laymen') is used to contrast with a previous clause (*fei shi pusa xingcang* 'this is not the behaviour of divine beings'), there is implicit focus here which makes it possible to reanalyse the relative clause (*suren zuo di*) as denoting either narrow (subject) focus or broad (predicate) focus: 'this is the doings of laymen' > 'it was laymen who did this'/'it is the case that laymen did this'.[33] Such reanalysis is further advanced in *Zhuzi Yulei* (1270 AD) where there are numerous contrastive uses of VOde as well as frequent omissions of the final nominal complement which render the nominal interpretation of *de* rather opaque:[34]

22)

Moreover, there are examples of adverbial use before *shi* which seems to strengthen cleft interpretation (Han :

22)

---

[33] This ambiguity between equational copular constructions and cleft constructions still exists in modern Chinese (Chao (1968:295-296), Paris (1979:93), Teng (1979:105-108), see footnote 14):

i)	Zhangsan	shi	1970-nian	biye	de	(ren)
	Zhangsan	SHI	1970-year	graduate	DE	person

'Zhangsan is the one who graduated in 1970.'/'It was in 1970 that Zhangsan graduated.'
(Shi (1994:81))

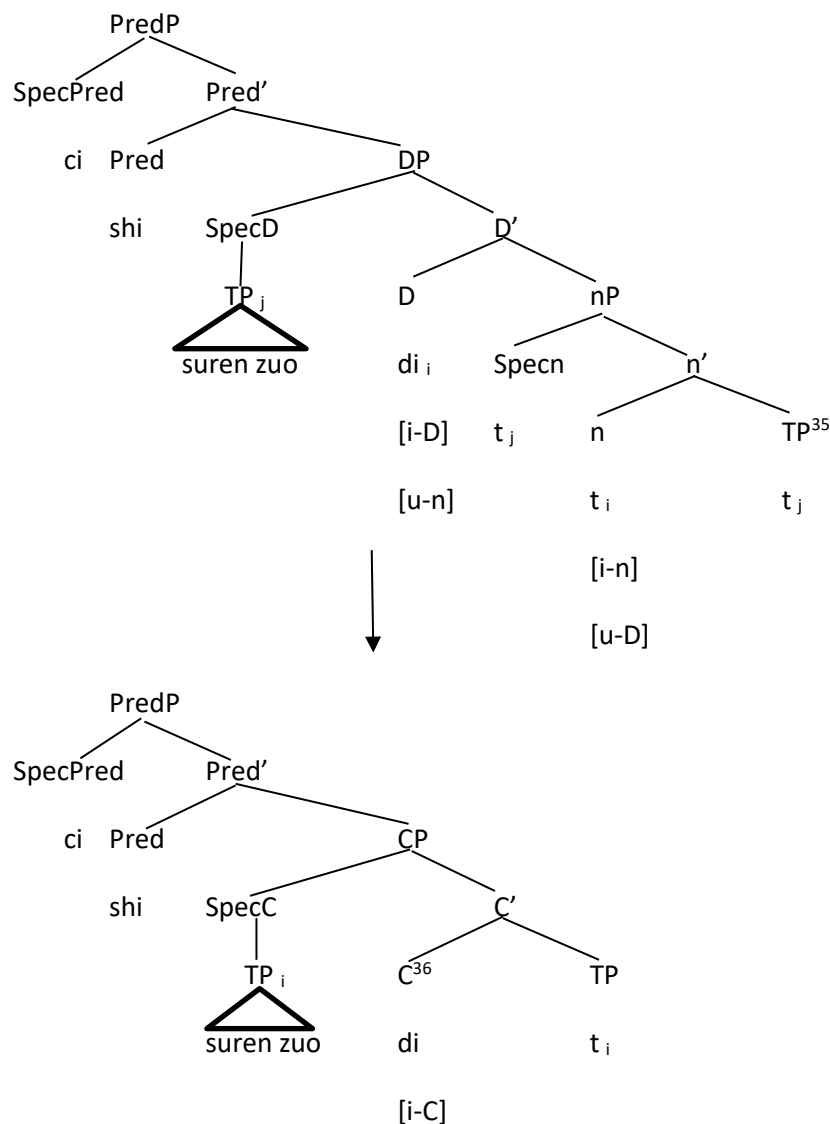[34] In fact, there is already one such example in *Zutangji* (祖堂集) (952 AD):

i)	师	云："	人人	尽	有	底	衣	即	是。"
	Shi	yun	renren	jin	you	di	yi	ji	shi
	Teacher	say	everyone	all	have	DE	clothes	then	SHI

	僧	云："	既	是	人人	尽	有	底，
	Seng	yun	ji	shi	renren	jin	you	di
	Monk	say	as	SHI	everyone	all	have	DE

	用	被	作	什摩？"
	Use	garment	do	what

'The teacher said, 'It is the clothes which everyone has then.' The monk said, 'If it is the clothes which everyone has (> if it is the case that everyone has it), what use is there for garments?'

As the head noun of the relative clause is omitted (*ji shi renren jin you di* (*yi*) 'as it is the clothes which everyone has…'), it can be reanalysed as a cleft construction with broad focus (> 'as it is the case that everyone has it…').

The reanalysis of VOde seems to be complete by the Yuan dynasty (14th century AD) where there are unequivocal non-nominal examples of VOde which must hence be analysed as clefts (Han (2012:18ff)):

Sentence-final *di*, therefore, seems to have been reanalysed from a phrase-final nominaliser (little n) to a sentence-final clausal particle (C) with embedded cleft focus, which may be represented thus:

```
              PredP
          ┌─────┴─────┐
      SpecPred       Pred'
        ci        ┌───┴────┐
                 Pred       DP
                 shi    ┌────┴─────┐
                      SpecD        D'
                       TP_j    ┌───┴────┐
                     ◁─────▷   D         nP
                    suren zuo  di_i   ┌──┴────┐
                              [i-D]  Specn    n'
                              [u-n]   t_j   ┌─┴──────┐
                                           n       TP³⁵
                                           t_i      t_j
                                          [i-n]
                                          [u-D]
```

↓

```
              PredP
          ┌─────┴─────┐
      SpecPred       Pred'
        ci        ┌───┴────┐
                 Pred       CP
                 shi    ┌────┴─────┐
                      SpecC        C'
                       TP_i    ┌───┴────┐
                     ◁─────▷  C³⁶       TP
                    suren zuo  di        t_i
                              [i-C]
```

---

³⁵ It may be argued that sentence-final *de* should be analysed as a determiner (D) selecting an empty noun, since there are numerous examples in *Zhuzi Yulei* of relative clauses with the head noun omitted (cf main text, see footnote 34), but since VOde already has cleft interpretation in early examples where no head noun is reconstructible (main text, 21)), this suggests that the origins of VOde go back to its early use as a nominaliser (n) (cf footnote 33).

³⁶ The structural configuration for cleft-focus (A'-Move) is omitted here for clarity of exposition (for which see section 2.4, 20a))

As sentence-final *de* has scope over the embedded clause, it allows for all kinds of clausal elements as well as both narrow and broad focus (section 2.4, 20a)), which is indeed attested (Han (2012)). Such is the formation of VOde, which involves the weakening of the nominal interpretation of phrase-final nominaliser *di* and its reanalysis as a sentence-final clausal particle (n > C). In the next section, I analyse the formation of VdeO in a similar fashion.

Section 3.2: VdeO (DP > TP):

In contrast to VOde, VdeO is attested in non-equative copular constructions where the relative clause is not necessarily co-indexed with the subject but rather denotes an object which may be related to the subject as his/her possession or attribution (Long and Xiao (2009, 2011), cf Zhang and Tang (2010), Zhang (2012)).[37] The earliest example of this is attested in *Wudeng Juiyuan* (Liu (2006), Long and Xiao ((2009, 2011), Long (2013)):

21b)

天下	人	総	是	參	得	底	禪
Tianxia	ren	zong	shi	can	de	di	chan
Beneath.world	people	always	SHI	study	obtain	DE	enlightenment

某	是	悟		得	底
Mou	shi	wu		de	di
I	SHI	understand		obtain	DE

'People in the world always have enlightening which is obtained through studying, whereas I have enlightenment that is obtained through understanding.' (*Wudeng juiyuan*)

Here the complements of *shi* (*can de di chan* 'enlightenment obtained through studying'*, wu de di* (*chan*) '(enlightenment) obtained through understanding') denote objects that are attributed to their respective subjects (*tianxia ren* 'people in the world', *mou* 'I' respectively) as their respective modes of attaining enlightenment, and since these denote specific objects (two kinds of *chan* 'enlightenment', one obtained through studying (*can de di chan*) and the other obtained via understanding (*wu de di*)), *de* here can be analysed as a determiner with deictic force i.e. 'the understanding that is obtained via studying (*can de di chan*) or the understanding that is obtained via understanding (*wu de di* (*chan*)). Later examples of VdeO do not necessarily denote definiteness/specificity, which leads to structural ambiguity:

21a)

前者	打	太醫	那	兩	個	人
qianzhe	da	taiyi	na	liang	ge	ren,
Former	hit	Chinese.medicine	those	two	CL	people

---

[37] It has long been noted that Chinese copula *shi* need not be equative and may lingusitically copula verbs may select complements that hold a loose predication relationship with the matrix subject and may hence not be strictly equational or coreferential.

是	如此	如此	這般	這般	使	的	手段
Shi	ruci	ruci	zheban	zheban	shi	de	shouduan
SHI	thus	thus	so	so	use	DE	manipulation

'As for those two people who formerly specialise in medicine, it is manipulation that is used in this-this such-such a way.' (*Yuanzaju* 元雜劇)

21b)

娘	原	是	氣惱-上	起	的	病
niang	yuan	shi	qinao-shang	qi	de	bing
Mother	originally	SHI	angry-LOC	contract	DE	illness

'As for my mother, it was originally the illness that was contracted by getting angry.'

(*Jinping meici hua*)

In 21a-b), the relativized head nouns (*shouduan* 'manipulation', *bing* 'illness') are general abstract concepts rather than real concrete objects, which weakens the determiner interpretation of *de* and allows for their reanalysis as clefts: 'the two people have manipulated in such a way' > 'it was in such a way that the two people have manipulated' (21a)), 'mother originally had illness that was contracted through anger' > 'originally it was through anger that mother got the illness' (21b)). Another context in which the determiner interpretation of *de* is weakened is when the relativized head noun is used in questions where it does not refer to a known concrete thing:

22)

悟空，	你	是	哪	世	修-來	的	緣法
Wukong	ni	shi	na	shi	xiu-lai	de	yuanfa?
Wukong	you	SHI	which	life	obtain-AFF	DE	karma

'Wukong, as for you, it is the karma of which life that is obtained?' (*Xiyouji* 西游記）
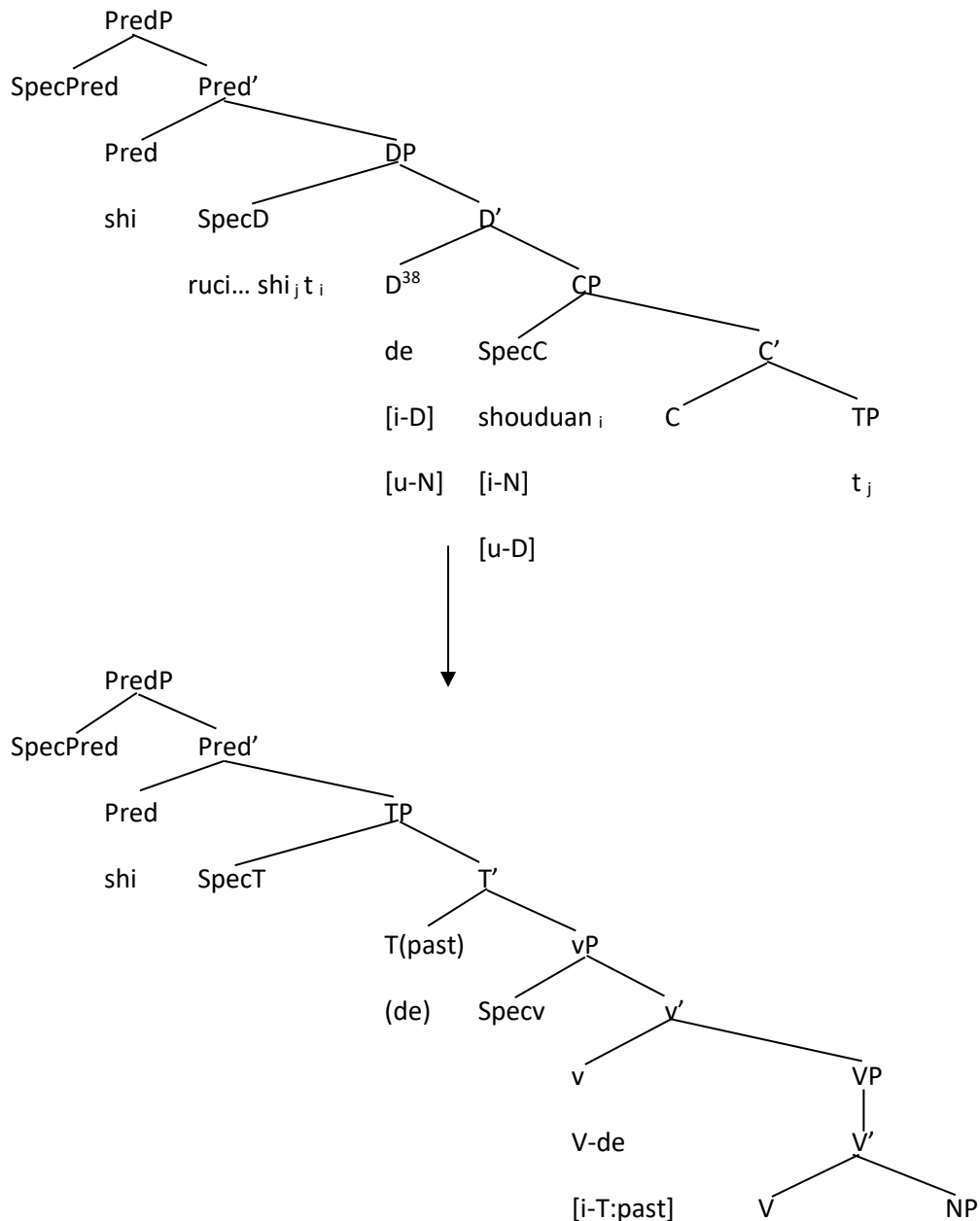
Here the relativized head noun (*yuanfa* 'karma') is modified by an interrogative phrase within the relative clause (*na shi xiu-lai de yuanfa* 'karma obtained from which life') which weakens the realis interpretation of *de* and yields a cleft interpretation ('it was in which life that you obtained your karma?'). In these examples of VdeO, the relativized objects (*shouduan* 'manipulation', *bing* 'illness', *yuanfa* 'karma') all mark the outcome of the preceding relative clauses (*ruci ruci zheban zheban shi de shouduan, qinao-shang qi de bing, nashi xiulai de yuanfa*) and are hence logically and temporally preceded by the verb within (*shi* 'use', *qi* 'contract', *xiu-lai* 'obtained'), which implies past-time interpretation and hence re-analysis of *de* as a past-tense verbal suffix. The reanalysis is confirmed in the Qing dynasty (17th-20th century AD) where there are examples in which the object of the embedded clause cannot possibly be derived via relativisation and must be interpretated as clefts (Long (2013:431-432)):

23) | 你 | 方才 | | 不 | 是 | 這 | 個 | 樣兒 |
|---|---|---|---|---|---|---|---|
| ni | fangcai | | bu | shi | zhe | ge | yanger |
| You | just.now | | NEG | SHI | this | CL | look |

見	的	我	麼
Jian	de	wo	me?
See	DE	me	QUESTION.PARTICLE

'Was it not with this look that you saw me just now?' (*ernu yingxiong zhuan*)

Phrase-medial *de* (VdeO), therefore, seems to have been reanalysed from a low determiner (D2) in nominalised relative clauses to a past-tense verbal suffix (T(past)-v), which may be represented thus:

PredP
SpecPred   Pred'
        Pred   DP
        shi   SpecD   D'
            ruci… shi_j t_i   D^{38}   CP
                        de   SpecC   C'
                        [i-D]   shouduan_i   C   TP
                        [u-N]   [i-N]   t_j
                                [u-D]

PredP
SpecPred   Pred'
        Pred   TP
        shi   SpecT   T'
                    T(past)   vP
                    (de)   Specv   v'
                        v   VP
                        V-de   V'
                        [i-T:past] V   NP

In the original relative clause construction, I have adopted Simpson's (1997, 2001) Kaynian approach in deriving the relativized object via A'-movement to the left-periphery of the embedded clause (CP) and remnant movement of the relative-clause with the object-gap to the specifier of *de* in D2, which derives the correct word order (VdeO), and when the definiteness interpretation of *de* is weakened in cases where the relativized object is not necessarily real, definite or specific, *de* is reanalysed as a verbal suffix in little v and is merged with the verb via V-to-v movement (cf section 2.4). As *de* is merged within the embedded clause as a verbal suffix in little v, it pre-empts all other TAM markers, negators and *dou* which are merged higher than little v (see section 3.4, 20b)),[39] and since *de* does not have scope over the entire embedded clause, it prohibits broad focus and allows for narrow

---

[38] In deriving Chinese relative clauses, it has been argued that *de* is a determiner (D) selecting the relativized noun and attracts the remnant relative clause to its specifier (Simpson (2001, 2003), cf footnotes).

[39] It has been pointed out that as VdeO originally denotes a specific object, it has realis condition and hence prohibits negation and modal auxiliaries, which facilitates its reanalysis as a verbal suffix.

focus only (see section 3.2, .[40] Such is the formation of VdeO, which also involves the weakening of the nominal interpretation of *de* in nominalised relative clauses which leads to its reanalysis as a past-tense verbal suffix (D > T(past)/v).[41] Both VOde and VdeO displays broad and striking similarities as will be explored in the rest of this paper.
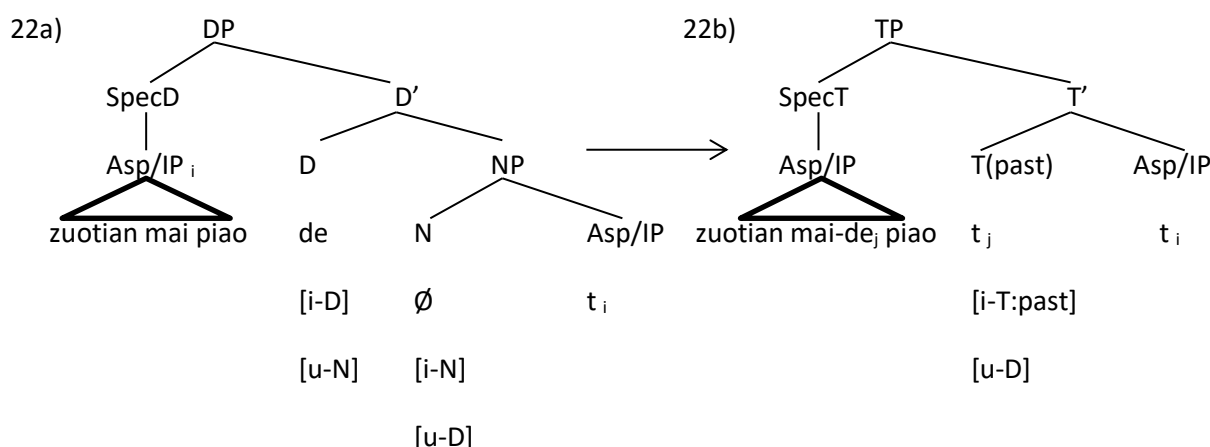
Section 3.4: VOde/VdeO (nP/DP > CP/TP):

In the diachronic formation of *shi-de* constructions (VOde/VdeO), *de* undergoes reanalysis from a nominal element (n/D) to a clausal one (C/T(past)) in contexts where the original nominal interpretation (n/D) is weakened, and while in phrase-final position (VOde) *de* is reanalysed as an SFP (n > C) (section 3.2), in phrase-medial position (VdeO) *de* is reanalysed as a past-tense verbal suffix (T(past)-v) (section 3.3), which seem to conform to S&W's (2002) 'lateral' reanalysis (see introduction, footnote 4). In the next section, I propose a formal (Minimalist) interpretation on the data and propose modifications to S&W's LG hypothesis.

Section 4: 'lateral' grammaticalization revised:

S&W (2002) argue that VdeO is derived from VOde where sentence-final *de* is 'laterally' reanalysed from being a determiner (D) to a past-tense marker (T(past)):

VOde > VdeO (cf section 1, 3a-b)):

22a)
```
              DP
           /      \
      SpecD        D'
        |        /     \
     Asp/IP i   D       NP
        |               /  \
   zuotian mai piao   N    Asp/IP
                      de
                    [i-D]   N      t i
                            Ø
                    [u-N]  [i-N]
                           [u-D]
```

22b)
```
              TP
           /      \
      SpecT        T'
        |        /     \
     Asp/IP   T(past)   Asp/IP
        |
   zuotian mai-de_j piao   t j      t i
                        [i-T:past]
                        [u-D]
```

(with arrow from 22a NP region to 22b)

S&W (2002:199-202) argue that this 'lateral' reanalysis indicates structural correspondences between the nominal and clausal domains, namely D and T heads which have been argued to be structurally equivalent in their respective functional hierarchies (Abney (1987), Longobardi (1994)). This 'lateral' reanalysis is a sharp contrast to standard Minimalist analyses of grammaticalization
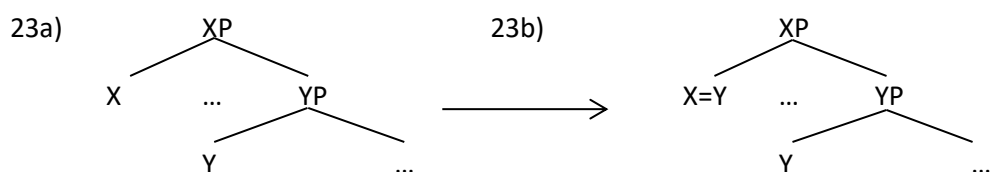
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[40] This reanalysis entails a narrowing of scope in *de,* since in the original relative clause *de* causes XP movement for the relative clause and hence has scope over it. Indeed, relative clauses do allow for clausal alternatives:

Hole (2011:1710 fn 7) also notes that verb focus, though not accepted by most, is marginally possible in VdeO, which may be a retention of the old relative clause structure.

[41] It has been argued that the object in VdeO is necessarily definite (see footnote , which may be a retention of the original DP structure where *de* (D) assigns definiteness to the relativized head noun.

(Roberts and Roussou (R&R) (2003), van Gelderen (2004, 2011)) where the functional element is argued to have been shifted upwards to a higher functional head in its functional domain:

'Upward feature analysis' (R&R (2003:200))

23a)
```
        XP
      /    \
     X  ...  YP
            /   \
           Y    ...
```
23b)
```
        XP
      /    \
    X=Y  ...  YP
            /   \
           Y    ...
```
→

'Lateral feature analysis' (S&W (2002:201))

24a)
```
        XP
      /    \
     X     YP
          /   \
         Y    ...
```
24b)
```
        ZP
      /    \
    Z=X    ...
```
→
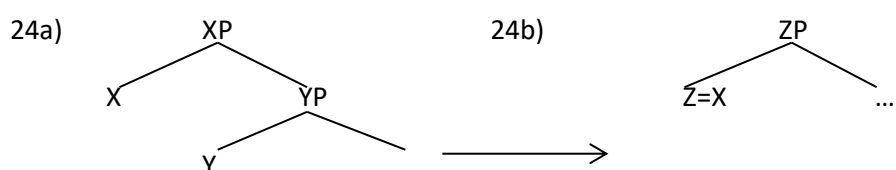
In Tse (2013a, b), it is argued that despite these structural differences, LG conforms to Minimalist definitions of 'structural simplification', which is argued to be the driving mechanism behind grammaticalization and is defined thus: [42]

i) $F^*_{Move/Move} > F^*_{MoveXP/Merge} > F^*_{MoveX/Merge} > F^*_{MoveXP} > F^*_{MoveX} > F^*_{Agree} > F^*_{Merge} > F$ (R&R (2003:228))
ii)   Semantic feature > i-F > u-F > ø   (van Gelderen (2008:296, 2009:4-7, 2011:17-20))
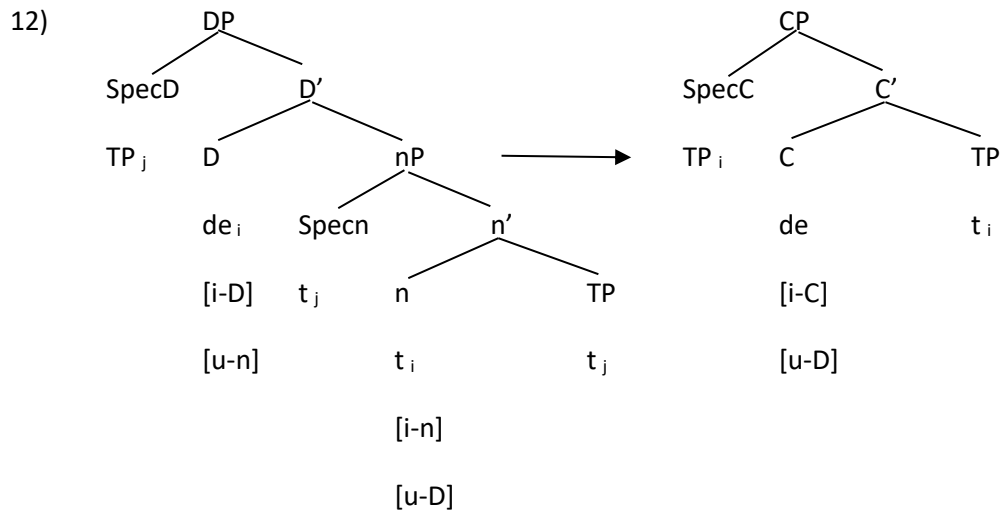
R&R (2003:198-200) define 'structural simplification' as the elimination of syntactic dependencies (*Move/Agree*) in favour of *Merge,* whereas van Gelderen (2011:17-20) argues that uninterpretable features are preferentially 'simpler' than interpretable features in language acquisition and change. Under these assumptions, S&W's analysis of *de* (D > T) also displays 'structural simplification' since in the original structure (VOde, *de* is a determiner selecting an (empty) nominal complement which suggests an *Agree* relation between *de* (D) and the (empty) noun (22a)) in accordance with standard DP analyses (Longobardi (1994, 1996)), and when *de* is re-analysed as a past tense marker (T(past)) (22b)), this D-N *Agree* relation is lost when its (empty) nominal is complement eliminated (cf S&W (2002:189-190)). Furthermore, while *de* (D) originally has interpretation nominal features, namely [i-D] [i-phi] (22a)), these become uninterpretable when *de* is reanalysed as a clausal element ([u-D] [u-phi] (22b)). LG may hence be characterised as 'lateral feature analysis' (D > T) and 'structural simplification' ($D_{Agree} > T_{Merge}$, [i-D/phi] > [u-D/phi]), which makes it a unique type of formal syntactic change (Tse (2016)).

The new historical evidence as analysed in the previous section suggests that VOde and VdeO are formed separately from original nominal structures in relative clauses to clausal structures
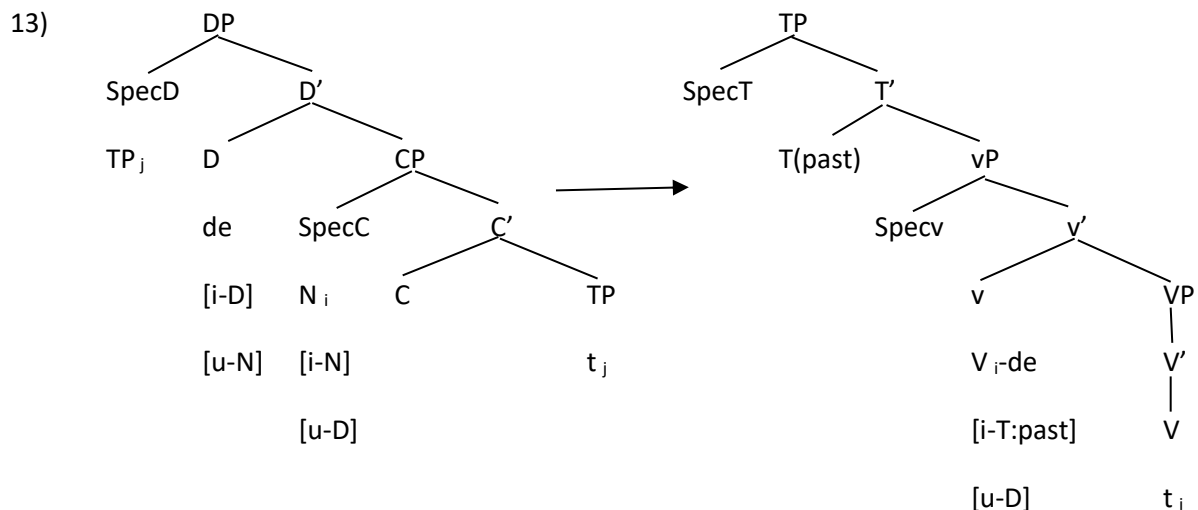
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[42] The notion of 'structural simplification' is crucial in accounting for the cross-linguistic distribution of grammaticalization, since it is argued that grammaticalization is a formally natural type of change and may hence occur cross-linguistically, which is a key modification to traditional accounts of syntactic change which argue that language evolution is random (Roberts (1993), Lightfoot (1999, 2006)). The cross-linguistic distribution of LG is outlined Tse (2012, 2013)), which further underlines the importance of 'structural simplification' for LG.

denoting cleft focus, and *de* is argued to undergo a 'dual' reanalysis from two nominal heads to two clausal heads, which may be encapsulated thus:

VOde: (cf section 3.2,)

12)


```
              DP                                           CP
           /      \                                     /      \
        SpecD      D'                                SpecC      C'
                 /    \                                       /    \
      TP_j     D        nP        ───────▶      TP_i    C          TP
               |      /    \                             |          |
              de_i  Specn    n'                          de         t_i
              [i-D]   |     /    \                       [i-C]
              [u-n]  t_j   n      TP                      [u-D]
                           |       |
                          t_i     t_j
                          [i-n]
                          [u-D]
```

VdeO: (cf section 3.3)

13)


```
              DP                                           TP
           /      \                                     /      \
        SpecD      D'                                SpecT      T'
                 /    \                                       /    \
      TP_j     D        CP        ───────▶      T(past)        vP
               |      /    \                                 /      \
              de    SpecC    C'                          Specv       v'
              [i-D]   |     /    \                                  /    \
              [u-N]  N_i   C      TP                               v       VP
                     [i-N]        t_j                              |        |
                     [u-D]                                      V_i-de      V'
                                                               [i-T:past]    |
                                                               [u-D]         V
                                                                             |
                                                                            t_i
```

In both VOde and VdeO, there is 'lateral feature analysis' in that *de* is reanalysed from being nominal (n/D) to clausal (C/T). Furthermore, there is 'structural simplification' since in VOde (23)) *de* loses its original n-D *Agree* as a phrase-final nominaliser (n) in its reanalysis as an SFP (C) (D-n$_{Agree}$ > C$_{Merge}$)[43] and in VdeO (24)) the original XP movement of the relative clause to the specifier of *de* as a determiner (D) is replaced by a 'simpler' head-to-head verb movement (D$_{MoveXP}$ > v$_{MoveX}$, cf R&R (2003:220)). Moreover, as C-elements are now argued to have uninterpretable D-features, in both cases the interpretable nominal features of *de* are made uninterpretable ([i-D/phi] > [u-D/phi]). Finally, a comparison between VOde and VdeO reveals structural correspondences between the

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[43] Hole (2011:1720-1721), following Zhang (2009), argues that *de* (C) has an *Agree* relation with its immediate complement which specifies its categorial features:

This is contentious, however, as these I maintain that sentence-final *de* instantiates C$_{Merge}$.

nominal and clausal domains as mentioned by S&W (2002:201), since in phrase-final position (VOde) *de* is reanalysed from being a nominaliser (n) to an SFP (C) whereas in phrase-medial position (VdeO) *de* is reanalysed from being a determiner (D) to a verbal suffix (T(past)-v), which, interestingly, suggests an inverse structural correlation between the nominal and clausal domains where a lower nominal head (n) seems to correspond to a higher clausal head (C), as in VOde, whereas a higher nominal head (D) to a lower clausal head (T(past)-v), as in VdeO, which may be represented thus:[44]

VOde/VdeO:
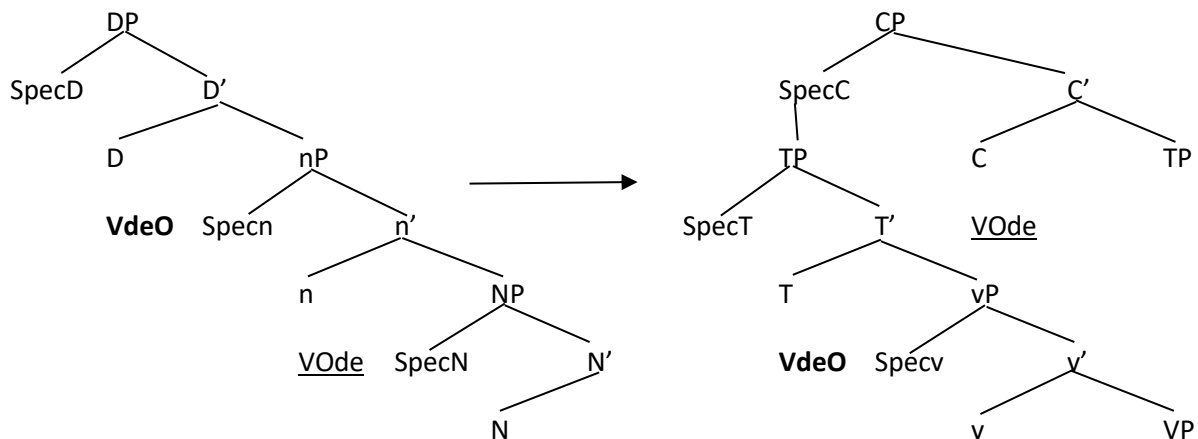
S&W's LG hypothesis may hence be defended and revised, since the new historical evidence does indeed support their hypothesis of a 'lateral feature analysis' and 'structural simplification' in the reanalysis of *de* in the formation of *shi-de* constructions (VOde/VdeO), and its categorial reanalysis also reveals structural correspondences between the nominal and clausal domains, albeit of an inverse kind (see footnote 45). Such is a formal analysis of the formation of *shi-de* constructions, which yields further evidence for the existence and independence of LG in historical syntax.

Section 5: summary and conclusion:

In this paper, I have critically reviewed S&W's original analysis of the diachronic formation of Chinese *shi-de* constructions (section 1) and have proposed new formal representations for the two variants (VOde/VdeO) based on a more detailed account of their empirical similarities and differences which are argued to lie mainly in an underlying difference in syntactic scope (CP and TP respectively) (section 2). The diachronic origins are then analysed where it is argued that VOde and VdeO are derived from two originally nominal relative clauses in copular constructions (section 3), and a formal (Minimalist) analysis of the data does seem to offer new evidence for S&W's LG hypothesis, though with significant and interesting modifications (section 4). It now remains to be seen whether the dialectal variants of Mandarin *shi-de* constructions conform to my analysis here, especially the g-forms in southern-central Chinese dialects (e.g. Cantonese *ge,* see footnote 2) which are only attested as sentence-final (VOge) and not otherwise (*VgeO). It would be interesting to see whether the historical evolution of *ge* shows a similar path of evolution as VOde, especially in light of

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[44] This can be due to the fact that that Chinese has C-elements on the right-periphery in the form of SFPs, which involves preposing its clausal complement (TP) and hence reverses the ordering of elements in the clausal hierarchy and gives rise to this mismatch with the nominal domain (see footnotes).

historical-comparative evidence in Chinese. Moreover, LG seems to be a very exciting prospect for formal historical syntax, since this paper has offered supporting evidence for LG which requires more empirical and theoretical research (cf S&W (2002:190-191)), especially in the formal differences between 'upward feature analysis' and 'lateral feature analysis' (see section 4) which has been argued to entail empirical differences which are significant for grammaticalization theory (Tse (2012, 2013)). All this requires closer scrutiny in light of the new evidence and analysis provided in this paper, which will be left for future research.

Bibliography:

Abney, S. (1987): The English noun phrase in its sentential aspect, PhD dissertation. MA, Cambridge: MIT Press.

Bowers, J. (1993): 'The syntax of predication'. *Linguistic Inquiry* 24:591-656.

Bowers, J. (2001): 'Predication', in Baltin, M. and Collins, C. (eds), *The Handbook of Contemporary Syntactic Theory*. Blackwell, p. 299-333.

Bowers, J. (2002): 'Transitivity'. *Linguistic Inquiry* 33(2):183-224.

Chao, Y-R. (1968): *A grammar of spoken Chinese*. Berkeley: University of California Press.

Cheng, L. (2008): 'Deconstructing the *shi… de* construction'. *Linguistic Review* 25:235-266.

Cheng, R. (1983): 'Focus devices in Mandarin Chinese', in Tang, T-C., Cheng, R. and Li, Y-C. (eds), *Studies in Chinese syntax and semantics. Universe and Scope: Presuppostion and Quantification in Chinese.* Taipei: Student Book Co., pp. 53-102.

Chiu, B. (1993): The Inflectional Structure of Mandarin Chinese. PhD dissertation, UCLA.

Den Dikken, M. (2006): *Relators and Linkers. The Syntax of Predication, Predicate Inversion, and Copulas.* Linguistic Inquiry, Monograph Forty-Seven. Cambridge, MA and London, England: MIT Press.

Dragunov, A. A. (1958): *Grammatical studies in modern Chinese* (Chinese translation). Beijing: Kexue Chuban She.

Garrett, A. (1999): 'A new model of Indo-European subgrouping and dispersal', in Chang, S. S., Liaw, L. and Ruppenhofer, J. (eds), *Proceedings of the Twenty-Fifth Annual Meeting of the Berkeley Linguistis Society.* Berkeley: Berkeley Linguistics Society, pp. 146-156.

Garrett, A. (2006): 'Convergence in the formation of Indo-European subgroups: Phylogeny ad chronology', in Forster, P. and Renfrew, C. (eds), *Phylogenetic methods and the prehistory of languages,* Cambridge: McDonald Institute for Archaeological Research, pp. 139-151.

Gelderen, van. E. (2004): *Grammaticalization as Economy.* Amsterdam: John Benjamins.

Gelderen, van. E. (2011): *The Linguistic Cycle: Language Change and the Language Faculty*. Oxford University Press.

Gelderen, van. E. (2015): 'The Copula Cycle'. *Lingue e Linguaggio* 14(2):289-303.

Han, Y. (2011): 'Qianxi "shi…de£ jusi lishi fazhan', *Journal of Jixi University* 11(10):122-124.

Han, Y. (2012): *Shi…de ju de lishi fazhan yanjiu* (Research on the diachronic development of *shi…de*). MA dissertation, Northwest Normal University.

Harris, A. and Campbell, L. (1995): *Historical syntax in cross-linguistic perspective.* Cambridge: Cambridge University Press.

Heine, B. and Kuteva, T. (2002): *World Lexicon of grammaticalization.* Cambridge: Cambridge University Press.

Hoh, P-S and Chiang, W-Y (1990): 'A focus account of moved wh-phrases at s-structure in Chinese'. *Lingua* 81: 47-73.

Hole, D. (2011): 'The deconstruction of Chinese *shi…de* clefts revisited'. *Lingua* 121:1707-1733.

Huang, C-T. J. (1982): *Logical Relations in Chinese and the Theory of Grammar.* PhD dissertation, MIT Press.

Huang, C-T. J. (1988): 'On 'Be' and 'Have' in Chinese (Shuo *shi* he *you*)'. *The Bulletin of the Institute of History and Philosophy Vol LIX,* Part I. Taipei: Academia Sinica.

Huang, B-R and Liao, X-D (1997): *Xiandai hanyu* (*xia*). Gaodeng jiaoyu chubanshe.

Kayne, R. (1994): *The antisymmetry of syntax.* Cambridge, MA: MIT Press.

Kimura (2003): ' ''de'' ziju de jushi yuyi ji ''de'' zi de gongneng kuangzhan.' *Zhongguo Yuwen* 295(4):303-316.

Kiss, K. (1998): 'Identificational focus versus information focus'. *Language* 74(2):245-273.

Kiss, K. (1999): 'The English Cleft Construction as a Focus Phrase', in Mereu, L. (ed), *Boundaries of Morphology and Syntax,* Amsterdam: John Benjamins, pp. 217-229.

Kitagawa, C. and Ross, C. (1982): 'Prenominal Modification in Chinese and Japanese', *Linguistic Analysis* 9:119-153.

Krifka, M. (2006): 'Basic notions of information structure', in Fery, C., Fanselow, G. and Krifka, M. (eds), *Interdisciplinary studies on information structure* 6: 13-55.

Langacker, R. W. (1977): 'Syntactic Reanalysis', in Li, C. N. (ed), *Mechanisms of Syntactic Change*. University of Texas Press, Austin, pp. 59-139.

Lee, H-C (2005a): On Mandarin shi-de constructions. PhD dissertation, National Tsing Hua University, Hsinchu, Taiwan.

Lee, H-C (2005b): 'On DE in SHI…DE construction'. *USTWPL* 1:131-160.

Li, K-N (2008): 'Contrastive Focus structure in Mandarin', in Chan, M. and Kang, H. (eds), *Proceedings of the 20th Northern American Conference on Chinese Linguistics* (NACCL), Ohio: Ohio State University, pp. 759-774.

Li, C. N. and Thompson, S. A. (1981): *Mandarin Chinese: a functional reference grammar*. Berkeley: University of California Press.

Li, C. N., Thompson, S. A. and Zhang, B-J. (1998): 'Cong huayu jiaodu lunzheng yuqici de'. *Zhongguo Yuwen* 263:93-102.

Lin, J. (2001): *Light verb syntax and the theory of Phrase structure.* PhD dissertation, UC Irvine.

Lin, H-N (2014): 'Aspectual *de* in *shi…de* cleft structures in Mandarin Chinese'. MS, National Taiwan Normal University.

Liu, M-Z (2006): 'Songdai jiegou zhuci ''de'' de xinxing yongfa ji qi laiyuan'. *Zhongguo Yuwen* 310-59-64.

Liu, M-Z (2008): *Hanyu jiegou zhuci 'de' de lishi yanbian yanjiu* [A study of historical evolution of Chinese structural particle DE]. Beijing: Yuwen Press.

Long, H-P (2007): *Yiranyi ''shi…de'' lei jushi de duo jiaodu caoce.* Doctoral dissertation, Central China Normal University.

Long, H-P (2013): 'On the formation of Mandarin VdeO'. *Acta linguistica Hungarica* 60(4):409-456.

Long, H-P and Xiao, X-P (2009): 'Yiranyi ''shi…de'' lei jushi de yufahua'.*Yuyan jiaoxue yu yanjiu* 2:23-30.

Long, H-P and Xiao, X-P (2011a): 'Wo shi zuotian mai de piao jushi jiqi xiangguan wenti'. *Shijie hanyu jiaoxue.* 25:305-318.

Long, H-P and Wang, D (2011b): ' ''S (shi) hui VP de'' jushi de xingcheng'. *Hanyu xuexi* 2011(1):46-52.

Lohndal, T. (2009): 'The Copula Cycle', in Gelderen, E. van. (ed), *Cyclical Change*. Amsterdam: John Benjamins, pp. 209-242.

Lu, S-X (1943):

Lu, S-X (1990): *Zhongguo wenfa yaolue* (*zhong juan)*. Shangwuyin shuguan. \

Luo, C. (1992): 'On the uncleftability of direct object in Chinese'. *Linguistica Atlantica* 14: 55-71.

Meng, E. (2014): *On Bare Shi clefts in Mandarin Chinese: a biclausal analysis.* MA dissertation, Zhongyuan daxue.

Paris, M-C. (1979): *Nominalization in Mandarin Chinese* (English version). Université de Paris.

Paris, M-C (1998): 'Focus operators and types of predication in Mandarin'. *Cahiers de Linguistique Asie Orientale* 27(2): 129-159.

Paul, W. (2005): 'Low IP area and left periphery in Mandarin Chinese'. *Recherches linguistiques de Vincennes* 33:111-134.

Paul, W. (2009): 'Consistent disharmony: sentence-final particles in Chinese'. MS, Centre de Recherches linguistique sur l'Asie Orientale, Paris.

Paul, W. (2014): 'Why particles are not particular: sentence-final particles in Chinese as heads of a split CP'. *Studia Linguistica* 68(1):77-115.

Paul, W. (2015): 'The insubordinate subordinator *de* in Mandarin Chinese: second take'. MS, Centre de Recherches Linguistiques sur l'Asie Orientale (CRLAO), Paris.

Paul, W, and Gasde, H-D. (1996): 'Functional categories, topic prominence and complex sentences in Mandarin Chinese'. *Linguistica* 34:263-294.

Paul, W. and Whitman, J. (2008): 'Shi…de focus clefts in Mandarin Chinese'. *The Linguistic Review* 25:413-451.

Rizzi, L. (1990): *Relativized minimality.* Cambridge, MA: MIT Press.

Rizzi, L. (1997): 'The fine structure of the left periphery', in Haegeman, L. (ed), *Elements of Grammar*. Dordrecht: Kluwer, pp. 281-337.

Roberts, I. and Roussou, A. (2003): *Syntactic change. A Minimalist approach to grammaticalization*. Cambridge: Cambridge University Press.

Rooth, M. (1992): 'A theory of focus interpretation'. *Natural Language Semantics* 1:75-116.

Ross, C. (1983): 'On the functions of Mandarin de', *Journal of Chinese Linguistics* 11(2):214-246.

Shi, D-X. (1994): 'The Nature of Chinese Emphatic Sentences'. *Journal of East Asian Linguistics* 3:81-101.

Shyu, S-I (2008): 'Mandarin cleft construction and focus structure types.' Paper presented at conference on contrastive information structure analysis. University Wuppertal.

Shyu, S-I (2010): 'Inferential and in-situ focus'. MS.

Shyu, S-I (2016): 'Shi… (de) sentences', in Sybesma, R. (ed), *Encyclopaedia of Chinese Language and Linguistics,* Brill Online Reference Works.

Simpson, A. (2001): 'Definiteneesss Agreement and the Chinese DP', *Language and Linguistics* 2:125-156.

Simpson, A. (2003): 'On the status of 'Modifying' DE and the Structure of the Chinese DP', in Tang, S-W, Liu, C-S (eds), *On the formal way to Chinese languages*. CSLI Publications, pp. 74-101.

Simpson, A. and Wu, Z. (2002): 'From D to T – determiner incorporation and the creation of tense.' *Journal of East Asian Linguistics* 11:169-202.

Sugimura (1999): ' ''de'' zi jiegou, chengzhi yu fenlei', in Jiang, L-S. and Hou, J-I (eds), *Hanyu Xianzhuang yu lishi de yanjiu*, Zhongguo shehui kexue chubanshe, pp. 47-66.

Sun, C-F (2006): *Chinese: A linguistic introduction.* Cambridge: Cambridge University Press.

Tang, S-W (2011): 'On gerundive nominalization in Mandarin and Cantonese', in Yap, F-H, Grunow-Harsta, K. and Wrona, J. (eds), *Nominalization in Asian Languages: Diachronic and Typological Perspectives,* Amsterdam: John Benjamins, pp. 147-160.

Tang, T-C (1980): 'Guoyu fenlieju, fenliebianju, zhunfenliejude jiegou yu xianzhi zhi yanjiu'. *Journal of Taiwan Normal University,* 1980, 250-96.

Teng, S-H (1979): 'Remarks on cleft sentences in Chinese'. *Journal of Chinese linguistics* 7(1):101-144.

Tsai, D. (2010): 'Tan Hanyu Motaici qi fenbu yu quanyi de duiying guanxi'. *Zhongguo Yuwen* 3:208-221.

Tsao, F-F (1994): 'Hanyu de fenlieju: Zhuti yu jiaodian hexie gongchu de jiegou'. *Proceedings of the 3rd International Chinese Languages and Teaching Conference,* pp. 93-106.

Tse, K. (2013a): 'Grammaticalization and 'lateral' grammaticalization, formalism and functionalism', in Working papers of the University of Geneva, *SWIGG* 12, GG@G 8:95-115.
http://www.unige.ch/lettres/linge/syntaxe/journal/Volume8/6_Tse_2012.pdf

Tse, K. (2013b): 'What is 'lateral' grammaticalization?', in Languages at the University of Essex (LangUE), Proceedings for LangUE 2012, pp. 98-110.
http://www.essex.ac.uk/langling/documents/langue/langue_2012_proceedings.pdf

Wu, Z. (2004): *Grammaticalization and Language Change in Chinese: A Formal View*. London and New York: Routledge Curzon.

Xion g, Z-R (2007): 'shi…de de joujian fenxi'. *Zhongguo Yuwen* 319(4):321-331.

Yap, F., Choi, P-L and Cheung, K-S (2010a): 'Delexicalizing *di*: how a Chinese noun evolves into a nominalizer, with attitude', in

Yap, F. and Grunow-Harsta (2010b): 'Non-referential uses of nominalization constructions: Asian perspectives'. *Langauge and Linguistics Compass* 3(1): 1-22.

Yap, F. and Wang, J. (2011a): 'From light noun to nominalizer and more : The grammaticalization of *zhe* and *suo* in Old and Middle Chinese', in Yap, F., Grunow-Harsta, K. and Wrona, J. (eds), *Nominalization in Asian Languages: Diachronic and typological perspectives.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 61-108.

Yap, F., Yang, Y. and Wong, T-S (2014): 'On the development of sentence-final particles (and utterance tags) in Chinese', in Beeching, K. and Detges, U. (eds), *Discourse Functions at the Left and Right Periphery: Crosslinguistic Investigatins of Language Use and Language Change,* pp. 179-220.

Yip, P-C, Rimmington, D. (1998): *Intermediate Chinese: A Grammar and Workbook.* London and New York: Routledge.

Yuan, Y-L (2003): 'Cong jiaodian lilun kan juwei de de jufayuyi gong neng'. *Zhongguo Yuwen* 292:3-16.

Zhan, F-Q (2012): *The structure and function of the Chinese copular construction.* PhD dissertation, Stanford University.

Zhang, H-Y (2006): 'Jujiaoshi shizijude jufa yuyi tedian'. *Yuyan jiaoxue yu yanjiu,* 2006, 42-50.

Zhang, H-Y (2012): *'Shi' zi jiegou de jufa yuyi yanjiu.* Beijing: Peking University Press.

Zhang, H-Y (2014): 'Where do they come from? The origin of cleft sentences and related problems in Mandarin Chinese'. *Cognitive Linguistic Studies* 1(2):197-217.

Zheng, Y-D, Sheng, J-C, Liu, Y-H, and Yang, J-R. (1992): *Hanyu yufa nandian sheyi.* Beijing: Huayu jiaoxue chubanshe.