

Shi as a Focus Particle and Exhaustifying Operator in Mandarin Chinese*

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ABSTRACT The 6 types of Mandarin focus constructions featuring *shi* ‘be’ all enforce an exhaustive identification of the focus. This is justified by three exhaustivity tests outlined in this paper: the entailment test (Szabolcsi 1981), the negation test (Kiss 1998), and the coordination test (Van der Wal 2016). Importantly, this exhaustive identification holds true regardless of the size of the focus or the way by which the focus is assigned, i.e., through PF-adjacency to *shi* or by bearing prosodic prominence. This study proposes an all-encompassing syntactic analysis of this phenomenon based on three claims: (i) the *shi*-marked exhaustivity is a conventional implicature syntactically realized as the Focus Associated Implicature Projection (FaiP) (Bianchi, Bocci & Cruschina 2015); (ii) *shi* is an exhaustifying operator base-generated in the Fai head, and the feature content of the FocP it selects is endowed with a [FOCUS] feature, and an optional EPP feature that allows the FocP to not always have a specifier; and (iii) the negator *bu* appearing to the immediate left of *shi* is analysed as directly attached to *shi*, substantiating that the scope of negation bears only on the focus activated by the exhaustive implicature trigger. Importantly, the addition of an optional EPP feature optimally juggles with the *prima facie* Adjacency restriction (Paul & Whitman 2008) obeyed in obtaining an unmarked focus in these structures and violated in some cases where prosodic marking is applied.

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1 A BRIEF INTRODUCTION TO MANDARIN FOCUS CONSTRUCTIONS

In Mandarin, focus – a specific type of information-structural prominence – can be encoded via prosodic prominence, syntactic reordering, or focus markers. As is prescribed by the Nuclear Stress Rule (NSR) (Cinque 1993, Truckenbrodt 2012), the main sentential stress of a sentence accompanied by a pitch accent naturally falls on the most deeply embedded constituent. This applies to Mandarin in the sense that an information-structurally-neutral sentence, as in (1a), has the sentential stress on *dangao* ‘cake’ by default. However, in reply to a wh-question seeking new information on a particular constituent as (1b) exemplifies, the focus of the answer must retract the default sentential stress from the rightmost position, per the Focus Rule (Reinhart 2006). This leaves the rest of the whole sentence destressed and deaccented (Truckenbrodt 1995). This prosodic manifestation of focus is termed ‘A-accent’ (Jackendoff 1972) as opposed to a ‘B-accent’ that is normally associated with topic.¹ The infelicity of answer (i) in (1) is, hence, due to a clash of two A-accented constituents within one clausal domain.

- (1) a. *Zhangsan chi le [DP yi-kuai DANGAO²].*
 Zhangsan eat PFV one-CLF cake
 ‘Zhangsan ate a piece of cake.’
- b. Q: *Shei chi le yi-kuai dangao?*
 who eat PFV one-CLF cake
 ‘Who ate a piece of cake?’
- A: (i) *#[ZHANGSAN]_F chi le [DP yi-kuai DANGAO].*
 (ii) *[ZHANGSAN]_F chi le [DP yi-kuai dangao].*
 Zhangsan eat PFV one-CLF cake
 ‘Zhangsan ate a piece of cake.’

¹ As is described by (Jackendoff 1972), an A-accent is characterized by a falling intonational contour which normally extends to the end of a sentence, as is shown in (i). A B-accent, on the contrary, features a rising intonational contour, as is shown in (ii). Crucially, the stressed syllable within the focused or the topicalized constituent bears a high pitch (indicated by H*).

- (i) Context: Did Mary eat the apple?
 Answer: (No), [JOHN]_F ate the apple. (A-accent)

H* 

- (ii) Context: What did Mary eat?
 Answer: [John]_{TOP} ate an APPLE, (but I do not know about Mary). (B-accent)

H* 

² Intonational prominence is represented by capital letters.

The syntactic encoding of focus, on the other hand, is well established in Mandarin *lian...dou* ‘even’ focus constructions³ (Paul 2015, Badan & Del Gobbo 2015). In these constructions, a focus can be achieved by syntactically displacing a constituent, such as DP, PP, VP, CP, to the immediate right of *lian*, irrespective of whether *lian* appears in the clause-internal periphery or the clause-external periphery (see 2a-2b).

- (2) a. [_{IP} Zhangsan *lian* [_{F/i} *[pingguo]* *dou bu chi pingguo/t_i*].
 Zhangsan even apple all NEG eat apple
 ‘Zhangsan does not eat even an apple.’
- b. *Lian* [_{F/i} *[pingguo]*] [_{IP} Zhangsan *dou bu chi t_i*].
 even apple Zhangsan all NEG eat
 ‘Zhangsan does not eat even an apple.’

Zhi ‘only’ and *shi* (sharing the same form with the copula) are two well-known focus markers in Mandarin. In each of the two sentences presented in (3), the default focus falls on the constituent that immediately follows the focus particles. Importantly, these particles must be spelt out.

- (3) a. *Women zhi [xingqiyi]_F shang wangqiuke.*
 2PL only Monday take tennis-course
 ‘We take the tennis course only on Mondays.’
- b. *Women shi [xingqiyi]_F shang wangqiuke.*
 2PL SHI Monday take tennis-course
 ‘It is on Mondays that we take the tennis course.’

One crucial and interesting fact tied to the Mandarin focus particles is the phenomenon known as Association with Focus (AwF), originally observed in the focus constructions marked by English *only* (Jackendoff 1972). That is, any constituent to the right of the focus marker can be associated with a focus interpretation by bearing an emphatic stress. Thereby, the direct object *wangqiuke* ‘tennis course’ can be focus-marked by being prosodically prominent even though it is not PF-adjacent to *shi*, as is shown in (4).

- (4) *Women shi xingqiyi shang [WANGQIUKE]_F.*
 2PL SHI Monday take tennis-course
 ‘It is the tennis course that we take on Mondays.’

³ In *lian...dou* constructions, *lian* ‘even’ is optional but the adverb *dou* ‘all’ must be present. When *lian* is present, the focused constituent does not need to be prosodically prominent, but when *lian* is unpronounced, the focus must bear the focal stress (Sybesma 1996, Badan & Del Gobbo 2015).

⁵ The choice of the trace theory (Chomsky 1981) or the copy theory (Chomsky 1993) bears little relevance to the current analysis. For ease of exposition, I will consistently adopt the trace marking strategy to indicate the IS (Information Structure)-encoding displacement in the glosses throughout the article.

As the title suggests, this study particularly concerns the focus particle *shi*. It re-evaluates two fundamental sentence patterns containing *shi*: (a) the bare *shi* constructions and (b) the *shi...de* constructions.⁶ The former category consists of two subtypes: (a-i) the bare initial *shi* pattern where *shi* marks the start of the sentence, and (a-ii) the bare pseudo-clause-medial *shi* pattern where *shi* can appear to the immediate left of any constituent base generated no lower than VP. Additionally, the latter major category can be further divided into four subtypes: the *shi...de* constructions containing (b-i) a clause-initial *shi* and a sentence-final *de*, (b-ii) a pseudo-clause-medial *shi* and a sentence-final *de*, (b-iii) a clause-initial *shi* and a pre-object *de* and (b-iv) a pseudo-clause-medial *shi* and a pre-object *de*. Consider the examples given in (5).

(5)

- a. i. *Shi* [ZHANGSAN]_F *zuotian zhao-dao le wo-de yaoshi.*
 SHI Zhangsan yesterday find-arrive PFV my key
 ‘It was Zhangsan who found my keys yesterday.’
- ii. *Zhangsan shi [zuotian]_F zhao-dao le wo-de yaoshi.*
 Zhangsan SHI yesterday find-arrive PFV my key
 ‘It was yesterday that Zhangsan found my keys.’
- b. i. *Shi* [ZHANGSAN]_F *zuotian zhao-dao wo-de yaoshi de.*
 SHI Zhangsan yesterday find-arrive my key DE
 ‘It was Zhangsan who found my keys yesterday.’
- ii. *Zhangsan shi [zuotian]_F zhao-dao wo-de yaoshi de.*
 Zhangsan SHI yesterday find-arrive my key DE
 ‘It was yesterday that Zhangsan found my keys.’
- iii. *Shi* [ZHANGSAN]_F *zuotian zhao-dao de wo-de yaoshi.*
 SHI Zhangsan yesterday find-arrive DE my key
 ‘It was Zhangsan who found my keys yesterday.’
- iv. *Zhangsan shi [zuotian]_F zhao-dao de wo-de yaoshi.*
 Zhangsan SHI yesterday find-arrive DE my key
 ‘It was yesterday that Zhangsan found my keys.’

⁶ The classifications of *shi*-containing structures in this paper are in the general spirit of the approach adopted by (Pan & Liu 2023) but fine-tuning the ‘medial-*shi*’ to ‘pseudo-clause-medial *shi*’. This is corroborated by systematic ATI (anti-topic item)-substitution failures of the subjects appearing to the immediate left of *shi* (to appear in subsection 2.2).

The focus constructions containing a clause-initial *shi*, such as (5a-i), (5b-i), and (5b-iii), are characterized by a focused subject bearing the prosodic prominence, while a pseudo-clause-medial *shi* in (5a-ii), (5b-ii) and (5b-iv) marks its right-adjacent constituent as a focus by default, dispensing with PF-marking. Further, as for initial *shi* constructions that do not contain a sentence-final *de*, all the non-adjacent constituents can be displaced to the right of *shi* and marked by *shi*. Such constituents, however, can stay in situ when being marked by a pseudo-clause-medial *shi*, whereas the trade-off is that they have to be prosodically prominent in the first place. This weakens the Adjacency restriction⁷ as the lack of Adjacency can always be made up for by resorting to PF-marking in pseudo-clause medial *shi* constructions. The distinction between the two focus-assignment strategies, i.e. being right-adjacent to *shi* or bearing the prosodic prominence, has been proposed to boil down to the size of the focus domain selected by *shi* (Pan & Liu 2023). When the former strategy is adopted, the focus domain only contains the constituent being right-adjacent to *shi*; when the latter strategy is used, the focus domain can be extended to encompass the non-adjacent constituents as long as they are PF-marked. Their analysis amounts to saying that if a sentence pattern allows for both strategies, *shi* in that pattern can select focus domains of varying sizes. However, the correlation established between the choices that *shi* makes and the phonological feature of the focus is not self-evident. In this study, I pursue an analysis ascribing the alternation between the two focus-marking strategies to the optional EPP feature residing in the feature matrix of the focus head selected by *shi*.

The paper is organized as follows. I will first delimit the distributions of *shi* and re-examine the default and marked focus readings of each of the six constructions in section 2. In section 3, I discuss the limitations of the 3 existing analyses even though they have made non-trivial contributions to our understanding of *shi*. I then demonstrate that the *shi*-marked focus invariably encodes an exhaustive identification in all the studied structures by introducing three exhaustivity tests. Section 4 offers a syntactic analysis of the *shi*-constructions by claiming that *shi* is an exhaustifying operator base generated in the Fai (Focus-Associated-Implicature, cf. Bianchi et al. 2015) head, triggering an exhaustive implicature on the focused element that either agrees with Foc at distance or is displaced to Spec-FocP. The default focus interpretations of the six structures are rendered given the EPP feature on Foc is set to be positive. Alternatively, the AwF-derived focus interpretations can be taken as a manifestation of an Agree relation between *shi* and the in-situ focus licensed by the [-EPP] feature on Foc. Section 5 concludes the paper.

⁷ According to Paul & Whitman (2008), only PF-adjacent constituents appearing to the right of *shi* can be marked as an exhaustive focus by *shi*. In other words, the Adjacency condition has been claimed to be the sole criterion of determining the distribution of *shi*-marked focus.

2 THE SYNTACTIC DISTRIBUTION OF *SHI*

2.1 Bare *shi* constructions

In Mandarin bare *shi* constructions, *shi* can either occur at the beginning of the sentence or in a pseudo-clause-medial position. The clause-initial bare *shi* construction, where *shi* occurs at the very front of the sentence, makes available two default interpretations (Cheng 2008, Paul & Whitman 2008): either the constituent immediately following *shi* or the whole proposition is contrastively focused. The former type of focus is referred to as a narrow contrastive focus (henceforth CF), and the latter one an IP-wide CF as they both contrast with other contextually salient alternatives. Crucially, the precondition for the subject to have a narrow CF reading in (6a) is prosodically marking the subject as prominent.⁸ As can be seen in (6b), a sentential focus reading arises when there is no focal stress that falls on any particular constituent of the sentence.

- (6) a. *Shi* [ZHANGSAN]_{CF} *zuotian zhao-dao le wo-de yaoshi*, (*bushi LISI*).
- SHI Zhangsan yesterday find-arrive PFV my key not
Lisi

‘It was Zhangsan who found my keys yesterday (not Lisi).’

- b. *Shi* [Zhangsan *zuotian zhao-dao le wo-de yaoshi*]_{CF}, (*bushi Lisi qiantian diu le yi-ba san*).
- SHI Zhangsan yesterday find-arrive PFV my key not
Lisi the-day-before-yesterday lose PFV one-CLF umbrella

‘It was the case that Zhangsan found my keys yesterday (not that Lisi lost an umbrella the day before yesterday).’

In-situ adjuncts can be CF-marked prosodically, similar to the subject, as illustrated in (7a). However, VP-internal constituents such as direct or indirect objects, or arguments originating in the extended verbal projections like CauseP (which incorporates the *ba*-construction, according to Sybesma 1999), fail to be focus-marked by *shi*, even if they carry focal stress, as shown in (7b, 7c).

- (7) a. *Shi* Zhangsan [ZUOTIAN]_{CF} *zhao-dao le wo-de yaoshi*.
- SHI Zhangsan yesterday find-arrive PFV my key

‘It was yesterday that Zhangsan found my keys.’

⁸ By prosodically marking a constituent as prominent, I mean that this constituent has the intonational feature of bearing the high pitch accent or, in other words, it carries an A-accent.

- b. #*Shi Zhangsan zuotian zhao-dao le [WO-DE YAOSHI]_{CF}*, (*bushi*
 SHI Zhangsan yesterday find-arrive PFV my key not
YI-BA SAN).
 one-CLF umbrella
 Int.: ‘It was my keys that Zhangsan found yesterday (not an umbrella).’
- c. #*Shi Zhangsan zuotian [CauseP ba [VP [SHU]_{CF} gei le Lisi]]]*.
 SHI Zhangsan yesterday BA book give PFV Lisi
 Int.: ‘It was the book that Zhangsan gave to Lisi.’

This being so, in order for constituents other than the subject or the adjuncts to bear a focal construal in the bare clause-initial *shi* construction, the third type of CF-marking strategy emerges: overtly displacing the relevant constituent to the immediate right of *shi*. Notably, constituents undergoing this syntactic operation are exempt from PF marking. This can be illustrated by examples in (8).

- (8) a. *Shi [VP zhao-dao le wo-de yaoshi]_{CF/i} Zhangsan zuotian t_i*,
 SHI find-arrive PFV my key Zhangsan yesterday
 (*bushi diu le yi-ba san*).
 not lose PFV one-CLF umbrella
 ‘It was finding out my keys that Zhangsan did yesterday (not losing an umbrella).’
- b. *Shi [DP wo-de yaoshi]_{CF/i} Zhangsan zuotian zhao-dao le t_i*,
 SHI my key Zhangsan yesterday find-arrive PFV
 (*bushi Lisi de san*).
 not Lisi POSS umbrella
 ‘It was my keys that Zhangsan found yesterday (not Lisi’s umbrella).’

A question naturally arises at this point: Is the dependency between the constituent (in the sense of Chomsky 1995) appearing in the derived position and its phonetically null counterpart appearing in the base position built by A’-movement? Given the fronted constituents reconstruct for binding in both short-distance and long-distance sentences, and that this syntactic dependency is island-sensitive, it can be established that this focus fronting operation targets an A’-position. Consider the data in (9).

- (9) a. Short-distance fronting
Shi [ta-ziji⁹ de yaoshi]_{CF/i} Zhangsan zuotian zhao-dao le t_i.
 SHI 3SG-self POSS key Zhangsan yesterday find-arrive PFV
 ‘It was his_j own keys that Zhangsan_j found yesterday.’

b. Long-distance fronting

Shi [*ta-ziji de yaoshi*]_{CF/i} *Xiaoming shuo* [_{CP} *t_i* [_{IP} *Zhangsan*
 SHI 3SG-self POSS key Xiaoming say Zhangsan
zuotian zhao-dao le t_i]].
 yesterday find-arrive PFV

‘It was his_j own keys that Xiaoming_j says Zhangsan found yesterday.’

(9a) clearly shows that the displaced object with an embedded reflexive behaves as though it has reconstructed to its original position for the purpose of binding. The interpretation of the reflexive pronoun *ziji* ‘self’ is referentially determined by *Zhangsan*, the matrix subject of the sentence. On the other hand, the long-distance object fronting seems to be a bit tricky as indicated by (9b). It turns out that the displaced object gets bound by the matrix subject *Xiaoming* rather than the embedded subject *Zhangsan*. This indicates that the complex reflexive has been reconstructed to somewhere in the matrix domain, below the subject. Therefore, we can conclude that reconstruction is needed for binding relations in the interpretation of this long-distance fronting operation, but it does not need to be a total one. This, in turn, bears out that the focus fronting of the object obeys successive cyclicity and is applicable in an unbounded fashion. Let us now consider examples containing focus extraction out of island environments.

(10) a. Complex NP island

**Shi* [*wo-de yaoshi*]_{CF/i} *Zhangsan zuotian zhao-dao le yi-ge*
 SHI my key Zhangsan yesterday find-arrive PFV one-CLF
 [_{DP} *zhuang zhe t_i de bao*].
 contain PROG DE bag

Int.: ‘It was my keys that Zhangsan found a bag that contains it.’

b. Subject island

**Shi* [*wo-de yaoshi*]_{CF/i} [_{CP} *Zhangsan zhao-dao le t_i*] *shi*
 SHI my key Zhangsan find-arrive PFV COP
bu-keneng de.
 impossible DE

Int.: ‘It was impossible that it was my keys that Zhangsan found.’

⁹ The reason why we are adopting the complex reflexive – *ta-ziji* ‘himself’ rather than the bare reflexive *ziji* ‘self’ is simply due to the fact that the former is considered more natural by native speakers than the bare reflexive. The adoption of complex reflexives should not affect the key point we are meant to make here, even though they exhibit different blocking effects compared with the bare reflexive *ziji* ‘self’ (Pan 1998). Specifically, 1st, 2nd, and 3rd person NPs all block the long-distance binding of *ta-ziji*, whereas only the former two types of NPs can block that of *ziji*.

c. Adjunct island

**Shi* [wo-de yaoshi]_{CF/i} [_{PP} Zhangsan zhao-dao t_i hou] hui-jia
 SHI my key Zhangsan find-arrive after return-home
le.
 PFV

Int.: ‘It was after finding MY KEYS that Zhangsan went back home.’

The data in (10a-10c) evidence that this IS-driven fronting operation induces island effects, lending further support to the claim that the dependency between the displaced constituent appearing to the immediate right of *shi* and its lower counterpart is formed by *A'*-movement. Table 1 is a summary of how a CF, be it a narrow or a broad one, is marked in the initial bare *shi* construction.

Unmarked	Marked	
<i>Shi</i> -focus Adjacency	Linear reordering	PF marking
IP focus	Adjuncts	Subject
	VP	Subject-embedded elements
	Object	Adjuncts (non-adjacent to <i>shi</i>)
		Verb (<i>shi</i> -VP adjacent)
	Object (<i>shi</i> -VP adjacent)	

Table 1 Summary of how a CF is marked in the initial bare *shi* construction.

As we have mentioned earlier, in addition to a clause-initial position, *shi* can also appear in a seemingly clause-internal position. That is, *shi* can appear to the immediate left of any constituent base generated no lower than VP. This pattern is dubbed the ‘medial bare *shi*’ construction (Paul & Whitman 2008). It differs from the initial bare *shi* pattern in that any constituent to the right of *shi* can have a narrow focus reading as long as it is right-adjacent to *shi* (see 11), or it bears the focal stress when at a distance from *shi* (see 12). Crucially, this construction is incompatible with a broad sentential focus interpretation when no particular constituent is stressed. Additionally, nothing to the left of *shi* can be focused even if it is stressed.

(11) a. Temporal adjunct

Zhangsan *shi* [zuotian]_{CF} zai jianshenfang zhao-dao le wo-de
 Zhangsan SHI yesterday in gym find-arrive PFV my
 yaoshi (*bushi jintian*)
 key not today

‘It was yesterday that Zhangsan found my keys in the gym (not today).’

b. Locative adjunct

Zhangsan zuotian shi [zai jianshenfang]_{CF} zhao-dao le wo-de
 Zhangsan yesterday SHI in gym find-arrive PFV my
yaoshi bushi zai jiaoshi.
 key not in classroom

‘It was in the gym that Zhangsan found my keys yesterday (not in the classroom).’

c. VP

Zhangsan zuotian zai jianshenfang shi [zhao-dao le wo-de
 Zhangsan yesterday in gym SHI find-arrive PFV my
yaoshi]_{CF} (bushi diu le yi-ba san).
 key not lose PFV one-CLF umbrella

‘It was finding out my keys that Zhangsan did yesterday in the gym (not losing an umbrella).’

(12) a. Locative adjunct

Zhangsan shi zuotian [ZAI JIANSHEFANG]_{CF} zhao-dao le
 Zhangsan SHI yesterday in gym find-arrive PFV
wo-de yaoshi (bushi ZAI JIAOSHI).
 my key not in classroom

‘It was in the gym that Zhangsan found my keys yesterday (not in the classroom).’

b. Object

Zhangsan shi zuotian zai jianshenfang zhao-dao le [WO-DE
 Zhangsan SHI yesterday in gym find-arrive PFV my
YAOSHI]_{CF} (bushi YI-BA SAN).
 key not one-CLF umbrella

‘It was my keys that Zhangsan found yesterday in the gym not an umbrella.’

In (11a-11c), the focus particle *shi* appears in the left-adjacent positions of the temporal adjunct, the locative adjunct, and the VP respectively. These constituents invariably get a CF reading imposed by *shi*. However, *shi* cannot penetrate further into VP and appear to the immediate left of the object, (13a). Thus, *shi* must reside in the pre-verbal position, and the remote object is associated with *shi* through stress, (13b).

- (13) a. **Zhangsan zuotian zai jianshenfang [VP zhao-dao le shi [wo-de Zhangsan yesterday in gym find-arrive PFV SHI my yaoshi]_{CF}, (bushi yi-ba san).*
key not one-CLF umbrella

Int.: ‘It was my keys that Zhangsan found yesterday in the gym (not an umbrella).’

- b. *Zhangsan zuotian zai jianshenfang shi [VP zhao-dao le Zhangsan yesterday in gym SHI find-arrive PFV [WO-DE YAOSHI]_{CF} (bushi yi-ba san).*
my key not one-CLF umbrella

‘It was my keys that Zhangsan found yesterday in the gym (not an umbrella).’

However, a fact that has been consistently overlooked in the previous literature is that the position taken by *shi* in this construction is actually not a real clause-internal one because the constituents appearing linearly before *shi* cannot be substituted by anti-topic items such as NPIs, quantificational NPs, and disjunctive NPs (Tomioaka 2007) (see 14). This suggests that the items held in this position are topics. Hence, I dub this *shi* as ‘pseudo-clause-medial *shi*’, and propose that everything that appears to its left lands in the Spec-TopP in the matrix left periphery.

- (14) a. NPI
**Meiyou-ren shi [zhao-dao le wo-de yaoshi]_{CF}.*
nobody SHI find-arrive PFV my key

Int.: ‘It was finding out my keys that nobody did.’

- b. Quantificational NP
**Suoyou-ren shi [zhao-dao le wo-de yaoshi]_{CF}.*
everyone SHI find-arrive PFV my key

Int.: ‘It was finding out my keys that everyone did.’

- c. Disjunctive NP
**Zhangsan huo Lisi shi [zhao-dao le wo-de yaoshi]_{CF}.*
Zhangsan or Lisi SHI find-arrive PFV my key

Int.: ‘It was finding out my keys that Zhangsan or Lisi did.’

Table 2 summarizes how a narrow CF is marked in the pseudo-clause-medial bare *shi* construction.

Unmarked	Marked	
<i>Shi</i> -focus Adjacency	Linear reordering	PF marking
IP focus (N/A)	Adjunct	Adjunct (non-adjacent to <i>shi</i>)
Adjunct	VP	Verb (<i>shi</i> -VP adjacent)
VP		Object (<i>shi</i> -VP adjacent)

Table 2 Summary of how a CF is marked in the pseudo-clause-medial bare *shi* construction.

The ‘floating property’ of the pseudo-clause-medial *shi* is also detectable with another focus particle in Mandarin Chinese – *zhi* ‘only’. *Zhi* focus-marks a clause-medial constituent by either appearing to its immediate left or associating with a constituent bearing the prosodic prominence. Examples adopting the former strategy are shown in (15), and those adopting AwF are shown in (16).

- (15) a. Temporal adjunct
Women zhi [xingqiyi]_{CF} zai xuexiao shang wangqiuke.
 1PL only Monday in school take tennis-course
 ‘We take the tennis course in school only on Mondays.’
- b. Locative adjunct
Women xingqiyi zhi [zai xuexiao]_{CF} shang wangqiuke.
 1PL Monday only in school take tennis-course
 ‘We take the tennis course on Mondays only in school.’
- c. VP
Women xingqiyi zai xuexiao zhi [shang wangqiuke]_{CF}.
 1PL Monday in school only take tennis-course
 ‘We only take the tennis course in school on Mondays.’
- (16) a. Locative adjunct
Women zhi xingqiyi [zai XUEXIAO]_{CF} shang wangqiuke.
 1PL only Monday in school take tennis-course
 ‘We take the tennis course on Mondays only in school.’
- b. Object
Women zhi xingqiyi zai xuexiao shang [WANGQIUKE]_{CF}.
 1PL only Monday in school take tennis-course
 ‘We only take the TENNIS COURSE on Mondays in school.’

2.2 *Shi...de constructions*

The *shi...de* constructions that this paper is concerned with are those containing a clause-initial or a pseudo-clause-medial *shi*, and a sentence-final or a pre-object *de*. The position of *de* in this construction is subject to regional variation (Paul & Whitman 2008): Northerners are more likely to use a pre-object *de*, whereas Southerners prefer to put *de* in the sentence-final position. Therefore, *shi...de* constructions can be further divided into four subtypes (cf. Pan & Liu 2023): *shi...de* constructions containing (i) a clause-initial *shi* and a sentence-final *de*; (ii) a clause-initial *shi* and a pre-object *de*; (iii) a pseudo-clause-medial *shi* and a sentence-final *de*; or (iv) a pseudo-clause-medial *shi* and a pre-object *de*. (17) offers examples containing a clause-initial *shi* and a pre-object *de*.

(17) a. IP-wide CF

Shi [Zhangsan zuotian zai jianshenfang zhao-dao de wo-de
 SHI Zhangsan yesterday in gym find-arrive DE my
yaoshi]_{CF} (*bushi Lisi jintian zai jiaoshi diu de tade san*).
 key not Lisi today in classroom lose DE his umbrella

‘It was that Zhangsan found my keys in the gym yesterday (not that Lisi lost his umbrella today).’

b. Subject CF

Shi [ZHANGSAN]_{CF} zuotian zai jianshenfang zhao-dao de wo-de
 SHI Zhangsan yesterday in gym find-arrive DE my
yaoshi (*bushi Lisi*).
 key not Lisi

‘It was Zhangsan who found my keys in the gym yesterday (not Lisi).’

As can be seen above, the *shi...de* construction with a clause-initial *shi* and a pre-object *de* parallels with the bare initial *shi* pattern in how a sentential CF or a subject CF is realized: when there is no stress that falls on any constituent of the sentence, the construction has an IP-wide broad CF reading by default; the subject receives a narrow CF reading when it bears the focal stress. In addition, this construction also allows the prosodic prominence to shift focus to adjuncts, even though they are remote to *shi*, but not to VP-internal constituents (compare 18a and 18b).

(18) a. *Shi* Zhangsan [ZUOTIAN]_{CF} zhao-dao de wo-de yaoshi, (*bushi qiantian*).
 SHI Zhangsan yesterday find-arrive DE my key not
 the-day-before-yesterday

‘It was yesterday that Zhangsan found my keys not the day before yesterday.’

- b. #*Shi* *Zhangsan zuotian zhao-dao de [wo-de YAOSHI]_{CF}*, (*bushi*
 SHI Zhangsan yesterday find-arrive DE my key not
yi-ba san).
 one-CLF umbrella

Int.: ‘It was my keys that Zhangsan found yesterday (not an umbrella).’

Therefore, in order for VP-internal constituents to receive a CF reading, they have to undergo overt fronting to the right-adjacent position of the clause-initial *shi*.

- (19) *Shi [wo-de yaoshi]_{CF/i} Zhangsan zuotian zhao-dao de ti*.
 SHI my key Zhangsan yesterday find-arrive DE

‘It was my keys that Zhangsan found yesterday (not an umbrella).’

Table 3 is a summary of how a CF, be it a narrow or a broad one, is marked in *shi...de* constructions containing a clause-initial *shi*.

<i>Shi...de</i> construction (clause-initial <i>shi</i> + sentence-final <i>de</i>)		
Unmarked	Marked	
<i>Shi</i> -focus Adjacency	Linear reordering	PF marking
IP focus	Adjunct	Subject
	Object	Subject-embedded elements
		Adjunct (non-adjacent to <i>shi</i>)
<i>Shi...de</i> construction (clause-initial <i>shi</i> + pre-object <i>de</i>)		
Unmarked	Marked	
<i>Shi</i> -focus adjacency	Linear reordering	PF marking
IP focus	Adjunct	Subject (<i>shi</i> -adjacent)
	VP	Subject-embedded elements
	Object	Adjunct (non-adjacent to <i>shi</i>)
		Verb (<i>shi</i> -VP adjacent)
Object (<i>shi</i> -VP adjacent)		

Table 3 Summary of how a CF is marked in the type (b-i) and type (b-iii) *shi...de* constructions.

As expected, a pseudo-clause-medial *shi* in the *shi...de* constructions exhibits the same floating property as what we found in the pseudo-clause-medial bare *shi* pattern. As is shown in (20), the narrow CF falls on the right-neighboring

constituent of *shi* by default, without being prosodically prominent. This contrasts with Cheng's (2008) judgment that this construction only receives a narrow focus reading provided that the constituent is prosodically prominent.

- (20) a. Temporal adjunct
Zhangsan shi [shangzhou]_{CF} zai zhongguocheng chi de kaoya.
 Zhangsan SHI last-week in Chinatown eat DE roasted-duck
 'It was last week that Zhangsan ate roasted duck in Chinatown.'
- b. Locative adjunct
Zhangsan shangzhou shi [zai zhongguocheng]_{CF} chi de kaoya.
 Zhangsan last-week SHI in Chinatown eat DE roasted-duck
 'It was in Chinatown that Zhangsan ate roasted duck last week.'

In addition, any prosodically prominent constituent to the right but at a distance from *shi* can associate with *shi* through AwF, (21a-21b). Crucially, when *shi* appears to the immediate left of the verb, the verb cannot be automatically CF-marked by default; this is because an element within VP has to be PF-marked in the first place and then gets CF-marked, as revealed by (21c).

- (21) a. Locative adjunct
Zhangsan shi shangzhou [zai ZHONGGUOCHENG]_{CF} chi de
 Zhangsan SHI last-week in Chinatown eat DE
kaoya.
 roasted-duck
 'It was in Chinatown that Zhangsan ate roasted duck last week.'
- b. Object
Zhangsan shi shangzhou zai zhongguocheng chi de [KAOYA]_{CF}.
 Zhangsan SHI last-week in Chinatown eat DE roasted-duck
 'It was roasted duck that Zhangsan ate last week in Chinatown.'
- c. Verb
Zhangsan shangzhou zai zhongguocheng shi [CHI]_{CF}/[#chi]_{CF} de
 Zhangsan last-week in Chinatown SHI eat/eat DE
kaoya (bu-shi MAI de kaoya).
 roasted-duck NEG-SHI buy DE roasted-duck
 'It was EATING the roasted duck that Zhangsan did last week in Chinatown (not buying it).'

In contrast with the pseudo-clause-medial bare *shi* construction, their *shi...de* counterparts seem to abandon VP-fronting, as can be seen through the contrast between (22a) and (22b-22c).

- (22) a. Pseudo-clause-medial bare *shi* pattern
Zhangsan shi [zhao-dao le wo-de yaoshi]_{CF/i} zuotian t_i, (bu-shi
 Zhangsan SHI find-arrive PFV my key yesterday NEG-SHI
mai le kaoya).
 buy PFV roasted-duck
 ‘It was finding out my keys that Zhangsan did yesterday (not buying a roasted duck).’
- b. *Shi...de* construction with a pseudo-clause-medial *shi* and a pre-object *de*
 ??*Zhangsan shi [zhao-dao de wo-de yaoshi]_{CF} zuotian t_i, (bu-shi*
 Zhangsan SHI find-arrive DE my key yesterday NEG-SHI
mai de kaoya).
 buy DE roasted-duck
 Int.: ‘It was finding out my keys that Zhangsan did yesterday (not buying a roasted duck).’
- c. *Shi...de* construction with a pseudo-clause-medial *shi* and a sentence-final *de*
 **Zhangsan shi [zhao-dao le wo-de yaoshi]_{CF} zuotian t_i de,*
 Zhangsan SHI find-arrive DE my key yesterday DE
(bu-shi mai le kaoya de).
 NEG-SHI buy PFV roasted-duck DE
 Int.: ‘It was finding out my keys that Zhangsan did yesterday (not buying a roasted duck).’

Even though the focus-fronting of VP is generally bad, the acceptability of (22b) is remarkably higher than (22c). This might be due to the reason that the pre-object *de* is an aspectual marker (Paul & Whitman 2008) merged relatively closer to the VP, whereas the sentence-final *de* is an assertion operator (Pan & Xu 2022), heading the AssertionP, presumably base-generated in the left periphery between the FocP and the TP (Paul & Whitman 2008, Pan & Xu 2022). The sentence-final *de* intervenes the focus fronting of the whole VP, leaving the surface word order unaccounted for. Detailed syntactic derivations will be presented in section 4.

A summary of how a narrow CF is marked in the remaining two subtypes of *shi...de* constructions is presented in Table 4.

<i>Shi...de</i> construction (pseudo-clause-medial <i>shi</i> + sentence-final <i>de</i>)		
Unmarked	Marked	
<i>Shi</i> -focus Adjacency	Linear reordering	PF marking
IP focus (N/A)	Adjunct	Adjunct (non-adjacent to <i>shi</i>)
Adjunct		VP (non-adjacent to <i>shi</i>)
<i>Shi...de</i> construction (pseudo-clause-medial <i>shi</i> + pre-object <i>de</i>)		
Unmarked	Marked	
<i>Shi</i> -focus adjacency	Linear reordering	PF marking
IP focus (N/A)	Adjunct	Adjunct (non-adjacent to <i>shi</i>)
Adjunct		VP (non-adjacent to <i>shi</i>)
VP		Verb (<i>shi</i> -VP adjacent)
		Object (<i>shi</i> -VP adjacent)

Table 4 Summary of how a CF is marked in the type (iii) and type (iv) *shi...de* constructions.

3 *SHI* AND EXHAUSTIVITY

Looking into the data presented in [section 2](#), at least two points are worth noting: (i) the focus marked by *shi* can be translated into a clefted constituent in the glosses, irrespective of how the focus is assigned; (ii) the Adjacency restriction on the linear order between *shi* and the focus seems to be a *prima facie*, as this restriction is certainly weakened when the prosodic prominence licenses a focus reading of a non-adjacent element in certain patterns. In accounting for the semantics of *shi*-containing constructions and the asymmetry regarding the Adjacency restriction, several fruitful attempts have been made by previous authors. In the first half of this section, I summarize and discuss three influential analyses¹⁰: the focus cleft analysis ([Paul & Whitman 2008](#)), the predication analysis ([Cheng 2008](#)), and the focus-domain analysis ([Pan & Liu 2023](#)). In the latter half, I apply three exhaustivity tests: the entailment test ([Szabolcsi 1981](#)), the negation test ([Kiss 1998](#)), and the coordination test ([Van der Wal 2016](#)) to the focus constructions featuring *shi*. The results lend credence to our central claim that *shi* is an exhaustifying operator. This also lays the semantic foundation for the minimalist analysis I will be formulating in [section 4](#).

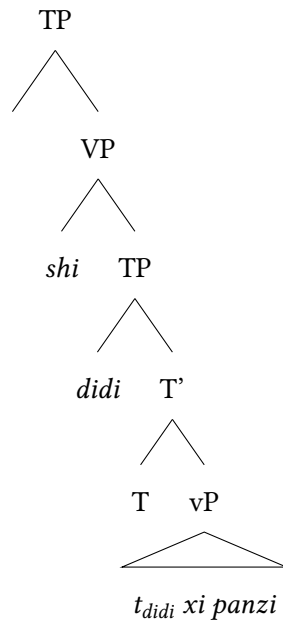
¹⁰ I refer interested readers to the original works of these three analyses. If the overview presented here involves any misinterpretations or misconceptions, all errors are my own.

3.1 *The focus cleft analysis*

Paul & Whitman (2008) entertained the idea that positionally-determined foci, i.e., being adjacent to *shi*, should be analyzed as having a biclausal structure (see 23), akin to clefts, in which the lower clause is selected by *shi* and is the complement of *shi*. The relevant constructions include the initial bare *shi* construction and the *shi...de* constructions with a sentence-initial *shi* or a post-topic *shi*.

- (23) a. Initial bare *shi* construction
Shi didi xi panzi.
 SHI younger-brother was plate
 ‘It was younger brother who washed the plates.’

- b. The syntactic representation of (23a)

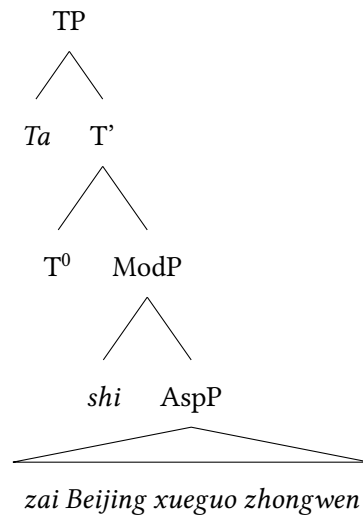


(Paul & Whitman 2008: 67)

On the contrary, those *shi*-containing structures licensing AwF are monoclausal, with *shi* serving as the head of the ModP (see 24).

- (24) a. Medial bare *shi* construction
Ta shi [zai Beijing]_{CF} xue guo zhongwen.
 3SG SHI at Beijing study EXP Chinese
 ‘She studied Chinese in Beijing.’

- b. The syntactic representation of (24a)



(adapted from Paul & Whitman 2008: 72, 73)

However, since their analysis is based on an overgenerating prediction that only positionally determined focus can be exhaustive (the semantic nature of clefted elements) in *shi* constructions and not for those marked through AwF, the biclausal-monoclausal distinction falls short in accounting for the syntactic divergence of the structures in question. In fact, just like the focus associated with English *only*, those associated with *shi* by prosody also have an exhaustive identification. As Rochemont (2013) observed, the English exhaustive focus (henceforth EF) marker *only* can mark its prosodically-neutral PF-adjacent constituent (25a) and also prosodically prominent elements which are far apart (25b-25d) as exhaustive. A close parallel can be detected in the Mandarin bare *shi* and the *shi...de* constructions. In subsection 3.4, I will vindicate why *shi* should be treated as an exhaustifying operator just like the English *only* on semantic grounds.

- (25) John only introduced Bill to Sue.
- a. John only [introduced Bill to Sue]_F.
 - b. John only introduced [BILL to SUE]_F.
 - c. John only introduced [BILL]_F to Sue.
 - d. John only introduced Bill to [SUE]_F.

Looking more closely into the analysis presented by Paul & Whitman (2008), their arguments mainly diverge from this current study in at least the following 6 aspects. First, the narrow focus in the *shi...de* constructions is solely determined by the specific position it resides in, namely only the constituent that is in the vicinity of *shi* is CF-marked. As a matter of fact, this is not true for either the clause-initial or the pseudo-clause-medial *shi...de* constructions. As section 2 explicates, the ways that a narrow focus is marked in the *shi...de* constructions containing a post-topical *shi* or a

clause-initial *shi* are both at least twofold: through *shi*-focus Adjacency or through AwF. Second, the narrow focus in the pseudo-clause-medial bare *shi* construction is completely determined by intonational prominence. This prediction is not borne out because intonational prominence only kicks in as a focus-marking strategy in this construction when a constituent is to the right of *shi* but not PF-adjacent to it.

Third, negation in the *shi...de* constructions only bears on the focus appearing to the immediate right of *shi*, to the exclusion of the rest of the sentence. Since this property speaks to that of clefts where negation only falls on the clefted constituent to the exclusion of the presupposition, the author argued that this forms a piece of evidence favoring the conjecture that *shi...de* constructions are clefts. The idea in general is correct, as negation is truly focus-sensitive in it-clefts, but its logical connection with diagnosing *shi...de* constructions as involving a bi-clausal structure does not seem to hold. This is because the *shi...de* constructions obviously allow for AwF, the focus marked by which is not positionally determined but falls within the scope of the negation. Compare (26a) and (26b).

- (26) a. *Ta bu shi [zuotian]_{CF} qu Beijing de, shi qiantian qu*
 3SG NEG SHI yesterday go Beijing DE SHI day-before-yesterday go
de.
 DE

‘It was not yesterday that he went to Beijing, it was the day before yesterday.’

(Paul & Whitman 2008, 7a)

- b. *Ta bu shi zuotian qu [BEIJING]_{CF} de.*
 3SG NEG SHI yesterday go Beijing DE

‘It was not Beijing that he went to yesterday.’ / *‘It was Beijing that he did not go to yesterday.’

Fourth, the authors suggested that only the subject is EF-marked in the bare initial *shi* constructions. According to my consultants and me, however, those non-subject constituents can also receive a narrow focus reading through undergoing movement to the immediate right of *shi* (for examples please refer back to 8a, 8b).

Fifth, they argued that in the cleft-like *shi...de* constructions and the initial bare *shi* construction, *shi* should be analyzed as the main verb because it can be negated, be preceded by adverbs, and form A-not-A questions. However, the former two arguments fall short for the following reasons. It is true that *shi* in the above-mentioned constructions can be negated, but the negation is exclusively focus-sensitive, irrespective of the way that the focus is assigned – AwF or being *shi*-adjacent. This is, however, totally different from how negation operates on a verb, as, in that case, what falls within the complement position of the Neg head is normally the whole *vP*. Consider examples in 27 where none of the constituents are prosodically marked. In (27a), the focus marked by *shi* is its right-adjacent constituent *zai jianshenfang* ‘in the gym’, and it is precisely this constituent that is negated by *bu*. However, in (27b), the negation applied to the entire *vP*.

- (27) a. *Zhangsan zuotian bu shi zai jianshenfang zhao-dao le [wo-de*
Zhangsan yesterday NEG SHI in gym find-arrive PFV my
*YAOSHI]*_{CF}.
 key
 ‘It was not my keys that Zhangsan found yesterday in the gym.’ / *‘It was
 my keys that Zhangsan did not find yesterday in the gym.’
- b. *Zhangsan bu [vP xihuan zai jianshenfang duanlian].*
Zhangsan NEG like in gym exercise
 Zhangsan does not like to do exercises in the gym.’

Additionally, the property of being linearly preceded by frequency or degree adverbs mentioned in the paper does not form a strong piece of evidence supporting the conjecture that *shi* is a main verb. Since *shi* cannot be preceded by a manner adverb, which is normally taken to be merged lower than the frequency or degree adverbs, as is shown below, it remains doubtful if *shi* is a real verbal predicate.

- (28) **Hen-kuai-de shi Zhangsan zhao-dao le wo-de yaoshi.*
 very-quickly SHI Zhangsan find-arrive PFV my key
 Int.: ‘It very quickly was Zhangsan who found my keys.’

Sixth, to test the exhaustivity of the focused constituents, Paul & Whitman (2008) adopted the coordination test (Zubizarreta & Vergnaud 2006), as is shown in (29). They claimed that the foci in the *shi...de* pattern, as in (29a), cannot be coordinated, thus they are exhaustive; while the foci in the pseudo-clause-medial bare *shi* pattern, as in (29b), can be coordinated, so they are non-exhaustive.

- (29) a. *Shi...de* pattern with a pseudo-clause-medial *shi*
Ta shi [zai Beijing]_{CF} xue zhongwen de, #dan ye shi [zai
 3SG SHI at Beijing study Chinese DE but also SHI at
Shanghai]_{CF} xue de.
 Shanghai study DE
 ‘It is in Beijing that he studied Chinese, but also in Shanghai.’
- b. Pseudo-clause-medial bare *shi* pattern
Ta shi [zai Beijing]_{CF} xue-guo zhongwen, dan ye zai Shanghai
 3SG SHI at Beijing study-EXP Chinese but also at Shanghai
xue-guo.
 study-EXP
 ‘She studied Chinese in Beijing, but also studied Chinese in Shanghai.’

(Paul & Whitman 2008: 12)

The results of this test are not sufficient to determine exhaustivity of the focus for at least two reasons. First, the application of the test involves no context. Crucially, an exhaustive focus differs from a plain contrastive focus in that all the other alternatives relevant to the discourse are excluded by the presence of an exhaustive focus (Cruschina 2021). A CF, on the other hand, only necessarily negates at least one alternative. In order for an addressee to be able to interpret a particular focus as exhaustive, the speaker cannot just take it for granted that the addressee is aware of the discorsal set, for which the presupposition holds by the time the utterance occurs. They should make the context readily available (or ‘activated’ in the sense of Lambrecht 1994) to the addressee, that is, the addressee has the exact mental representations of all the alternatives that the speaker wants them to decode through the utterance. For the example provided in (29b), if *Beijing* and *Shanghai* together form an exhaustive subset of potential alternative places where the person might have studied Chinese, it still holds that the pseudo-clause-medial bare *shi* pattern gives rise to an exhaustive focus construal. Therefore, I argue that to test the exhaustivity of the focus, we need to set up proper contexts rather than simply introspect independent sentences in the coordination pattern. Second, as Pan & Liu (2023) pointed out, this pattern fails the exhaustivity test as the latter part of the sentence in (29b) does not contain *shi*. When *shi* is present, native speakers tend to reject the grammaticality of the sentence, hence the sentence pattern does give rise to exhaustivity effects.

3.2 The predication analysis

As the name suggests, in this analysis, Cheng (2008) claimed that any sentence containing *shi* should be uniformly considered as having a copula *shi* (represented by COP) that selects a small clause (sc), constituted by a predicate and a subject. Her argumentation involved identifying four major types of sentence structures featuring *shi* and diagnosing the focus readings derived from various predication relations. The former two types – the canonical predication (featuring sentences of the pattern 5b-ii) and the inverse predication (also referred to as pseudo-clefts; a type of sentence irrelevant to our current study) – share the base predication structure and vary in terms of whether the *de*-clause predicate undergoes inversion (see 30a-30b). Constituents left within the SC can get an EF reading, and the prosodic marking can freely assign EF to any constituents in the SC of the canonical predication type. The latter two types – the broad *shi...de* constructions (pattern 5b-i), and the bare *shi* constructions (pattern 5a-i and 5a-ii) differ from the former two types in that the predicate of the SC is treated as a phonetically null element: *pro*.

- (30) a. Canonical predication
 $XP_i \text{ COP } [_{\text{SC}} [t_i] [de\text{-clause}]]$
- b. Inverse predication
 $[de\text{-clause}_j] \text{ COP } [_{\text{SC}} [XP] [t_j]]$
- c. Broad *shi...de*
 $pro_i \text{ COP } [_{\text{SC}} [de\text{-clause}] [t_i]]$

- d. Bare *shi*
 pro_i COP [SC [CP] [t_i]]

Let us now look at the four types in detail. Differing from a normal equative sentence containing a subject and a nominal predicate connected by the copula *shi* as in (31), the subject *Zhangsan* is predicated by a verb phrase marked by *de* in (32), an illustration of (30a). Its schematization is given in (32b). Consequently, the linear order of the sentence is derived by moving the subject of the SC to the matrix clause.

- (31) a. *Zhangsan shi laoshi.*
 Zhangsan COP teacher
 ‘Zhangsan is a teacher.’
 b. $Zhangsan_i$ *shi* [SC [SBJ t_i] [PRED *laoshi*]]
- (32) a. *Zhangsan shi zai Taipei zhu de.*
 Zhangsan COP at Taipei live DE
 ‘Zhangsan lives in Taipei.’ (Cheng 2008: 37)
 b. $Zhangsan_i$ *shi* [SC [SBJ t_i] [PRED *zai Taipei zhu de*]]

When the size of the predicate is bigger than what we have in (32a), the author claimed that there is a λ operator marked by *de* as in (33a-33b), where it binds the variable *e*. This predication structure was said to be created by the λ operator, as the *de*-clause is treated as a headless relative clause predicating the subject *zhe-ben shu* ‘this book’. Therefore, the author contended that there is no necessity to postulate an additional step involving the movement of the subject out of the predicate.

- (33) a. *Zhe-ben shu shi Zhangsan mai de.*
 This-CLF book COP Zhangsan buy DE
 ‘This book is bought by Zhangsan.’ (Cheng 2008: 18)
 b. [*Zhe-ben shu*] $_i$ *shi* [SC [SBJ t_i] [PRED λ -Op *Zhangsan mai e de*]]

The inverse predication construction (34a), sharing the base structure with the canonical predication counterpart, was argued not to be a pseudocleft by the author (contra to Paul & Whitman 2008).

- (34) a. *Zhangsan xiang-yao de shi zhe-ben shu.*
 Zhangsan want-have DE COP this-CLF book
 ‘What Zhangsan wants is this book.’ (Cheng 2008: 25b)
 b. [PRED *Zhangsan xiang-yao de*] $_i$ *shi* [SC [SBJ *zhe-ben shu*] [PRED t_i]]

This is supported by the observation that the pivot of this sentence pattern can be a *wh*-phrase, a type of element that is generally not allowed to be clefted cross-linguistically. This can be seen through a comparison between (35a) and (35b).

- (35) a. *Zhangsan xiang-yao de shi shenme?*
 Zhangsan want-have DE COP what
 ‘What is it that Zhangsan wants to have?’
 b. **What is [what Ben is]?*

The third type of sentence – the broad *shi...de* construction containing a clause-initial *shi* and a sentence-final *de* – is derivable from a different predication structure compared with the previous ones. The reasons are twofold according to the author. The string sandwiched by *shi* and *de* in this construction must only follow the SVO order. This, however, is not obligatory for canonical predication sentences. Additionally, the broad *shi...de* construction does not tolerate non-eventive predicates which are otherwise totally fine for the canonical predication structure. The authors argued for two different structures for this construction due to its two distinct focus interpretations: (i) a narrow focus reading of the subject; (ii) a broad focus reading of the whole clause. This contrast is shown in (36) and (37).

- (36) a. Narrow focus on the subject
Shi Zhangsan bu xiaoxin da-po de.
 COP Zhangsan not careful bit-broken DE
 ‘It is Zhangsan who broke it accidentally.’ (Cheng 2008: 35)
 b. [*pro_i shi* [_{SC} [_{SBJ} *Zhangsan*] [_{PRED} *t_i*]]] [_{CP} *Op_j e_j bu xiaoxin da-po de*]
- (37) a. Broad focus
Shi xila-ren zui xian kaishi niang-jiu de.
 COP Greek most first start brew-wine DE
 ‘It is the Greek that first started to produce wine.’ (Cheng 2008: 39)
 b. *pro_i shi* [_{SC} [_{SBJ} *xila ren zui xian kaishi niang-jiu de*] [_{PRED} *t_i*]]

It is evident, as Cheng’s analysis suggests, that whatever seeks to be the subject of the SC receives the focus interpretation. In a sentence like (36a), where a *shi...de* construction, bears a narrow focus on the subject, the subject is predicated by a *pro*-predicate, which then undergoes inversion. Consequently, the *de* clause is treated as an adjunct CP that binds a predicate variable *e*. Conversely, the *de* clause becomes the subject of the small clause when a sentence like (37a) has a broad focus reading.

The last type – the bare *shi* sentences – shares the base structure with broad *shi...de* constructions, and they mainly differ from each other in the presence or absence of *de*. In the small clause of the bare *shi* sentences, the subject is a CP, and since different constituents could bear a CF reading by moving to the immediate

right of *shi*, the author argues that they are displaced to the Spec-CP, as is shown in (38a-38b).

- (38) a. *Shi Zhangsan mingtian dao niuyue qu.*
 COP Zhangsan tomorrow arrive New York
 ‘Is Zhangsan who is going to New York tomorrow.’ (Cheng 2008: 2b)
- b. $pro_i shi [_{SC} [_{SBJ} [_{CP} Zhangsan C^0 [_{IP} mingtian\ dao\ niuyue\ qu]]] [_{PRED} t_i]$

To review, the former two types in Cheng’s study share the base predication structure and vary in terms of whether the *de* clause predicate undergoes inversion; the latter two types differ from the former ones in that the predicate of the SC becomes phonetically null. However, Cheng’s claims run into a few problems. In terms of the bare *shi* constructions, the predication structure only shows that whatever falls within the CP domain is licensed to be an EF but does not regulate that it is the PF-adjacent constituent to *shi* that is focalized. Second, Cheng’s analysis appears ad hoc in explaining the optional availability of the two focus interpretations mentioned in (36-37). If both the subject and the whole *de* clause can be fronted to the subject of the SC in order to be EF marked, the question remains unsettled as to how syntax makes the choice. As a matter of fact, it is the prosodic prominence falling on the subject that distinguishes the narrow-focus reading from the broad-focus reading. Moreover, the author argues for a *pro* predicate in the latter two constructions, following Moro (1997). When the pronominal predicate was first proposed by Moro (1997) for Italian equatives, he diagnosed that the inversed predicate is phonetically null and the post-copula argument is the subject because the main verb inflects in accordance with the ϕ -features of the post-copular argument *io* ‘I’ (as is shown in 39).

- (39) a. *Sono io* [Italian]
 am 1SG
 ‘It’s me.’ (Moro 1997; adapted by Cheng 2008)
- b. $pro_i sono [io t_i]$

However, since *shi* does not inflect in Mandarin, it remains unclear whether it is, for instance, that *pro* predicates the clause *Zhangsan mingtian dao niuyue qu* or the clause predicates *pro* in (38a).

3.3 The focus domain analysis

Pan & Liu (2023) proposed analysing *shi* as a focus domain marker. Wherever *shi* is present, the EF marked by *shi* must fall within the domain of *shi*. For patterns (5b-i), (5b-iii), and the initial bare *shi* sentences with an ex-situ constituent adjacent to *shi*, they claimed that *shi* is a verb base generated in Spec-FocP, selecting a focus domain as its complement. When the sole constituent XP, within the domain, is marked as an EF, the sentence is schematically shown in (40a); whereas when any

constituent within the domain, be it XP or YP, is marked as an EF by prosody, the sentence is represented as in (40b).

- (40) a. [_{Foc} [*shi* XP], [_{Foc'} [...YP...]]]
 b. [_{Foc} [*shi* [XP...YP...]], [_{Foc'} [...YP...]]]
 c. [_{Top} [_{vP} *shi* [XP...YP...ZP]]]

However, for pseudo-clause-medial *shi* structures such as pattern (5a-ii), (5b-ii), (5b-iv), and the bare initial *shi* pattern (5a-i), since any post-*shi* constituent can be marked as an EF by prosody, the authors proposed that they share the schematization of (40c), doing away with the idea of FocP. The shortcomings of this study are as follows. First, the authors do not maintain consistency when stating the division of labour between *shi* and prosody in terms of EF marking. The authors argued that the notions of contrast and focus should be separated and so should their marking devices. However, this claim is unmotivated according to their descriptions: they claimed that *shi* in (40a) marks both focus and contrast, whereas it marks only focus in (40b), leaving contrast marked purely by prosody. This certainly leaves the problem of why *shi* does different jobs in the focus structures unresolved. Further, following this vein of analysis, if contrast could be marked purely by prosody, then the authors did not address why the type of prosodic prominence present in the *shi*-type of focus structures exclusively enforces exhaustivity – a specific subtype of contrast. Second, analogous to Paul & Whitman's (2008) analysis, the authors also overlooked the fact that even though *shi* can be negated by adding a negator *bu* to its left in all the structures, the negation only bears on the focused constituent irrespective of whether the focus is assigned through AwF or *shi*-focus Adjacency. If *shi* is analyzed as the main verb as (40c) shows, what falls within the domain of negation is expected to be the whole post-*shi* constituent especially when no PF marking is present, contrary to the facts.

For the sake of clarity, I close this subsection with two tables, summarising the textual descriptions presented above: Table 5 presents an overview of the different treatments of *shi* and *de* proposed in the three studies; Table 6 summarizes the strengths and weaknesses identified in each analysis.

	<i>shi</i>	<i>de</i>
The focus cleft analysis (Paul & Whitman 2008)	(a) A copula (i) <i>Shi...</i> <i>de</i> proper pattern (i.e., containing a clause-initial or a clause-medial <i>shi</i> and a pre-object or a sentence-final <i>de</i>) (ii) Initial bare <i>shi</i> pattern	(b) An emphatic modal verb Medial bare <i>shi</i> pattern
The predication analysis (Cheng 2008)	A copula selecting a small clause	(a) A generalized λ abstraction operator introducing a headless relative clause (b) An assertion operator
The focus domain analysis (Pan & Liu 2023)	A focus domain marker: (a) A copula: merged in Spec-FocP (For type (40a, b)) (b) A matrix verb (For type (40c))	(a) Sentence-final <i>de</i> : an assertion marker heading the AssertionP (b) Pre-object <i>de</i> : an aspectual marker heading the AspP

Table 5 Summary of how the three analyses treat *shi* and *de* respectively in Mandarin focus structures.

	Strengths	Weaknesses
The focus cleft analysis (Paul & Whitman 2008)	<ul style="list-style-type: none"> (a) Identifying the correlations between the interpretations of the <i>shi</i>-marked focus and the Exclusiveness Condition (b) Identifying the two focus marking strategies made available by <i>shi</i>: (i) <i>shi</i>-focus Adjacency; (ii) AwF (c) Stressing the different interpretations of the two <i>des</i> 	<ul style="list-style-type: none"> (a) Equating <i>shi</i> constructions with clefts (b) Asserting that the Exclusiveness Condition is not observable in cases with AwF (c) Treating <i>shi</i> as a copula or a modal verb without taking into account that the negation of <i>shi</i> is focus-sensitive irrespective of which focus marking strategy is adopted
The predication analysis (Cheng 2008)	<ul style="list-style-type: none"> (a) Identifying the two focus marking strategies made available by <i>shi</i>: (i) <i>shi</i>-focus Adjacency; (ii) AwF (b) Stressing the different interpretations of the two <i>des</i> (c) Identifying the correlations between the interpretations of the <i>shi</i>-marked focus and the Exclusiveness Condition 	<ul style="list-style-type: none"> (a) Asserting the sole identity of <i>shi</i> – a copula – in all <i>shi</i>-containing constructions (b) Assuming that the Exclusiveness Condition abide by the <i>shi</i>-marked focus directly correlates with the lexical property of a copula (c) Failing to capture the ‘<i>shi</i>-focus Adjacency’ strategy in the purported structures
The focus domain analysis (Pan & Liu 2023)	<ul style="list-style-type: none"> (a) Highlighting the labor division of the two strategies: the focus domain is marked by <i>shi</i> through Adjacency; a specific constituent within the domain is focus-marked by prosody (b) Identifying the correlations between the interpretations of the <i>shi</i>-marked focus and the Exclusiveness Condition (c) Stressing the different interpretations of the two <i>des</i> 	<ul style="list-style-type: none"> (a) Separating the marking mechanisms of contrast and focus and remaining inconsistent with the division of labour between <i>shi</i> and prosody (b) Treating <i>shi</i> as a copula or a matrix verb without taking into account that the negation of <i>shi</i> is focus-sensitive irrespective of which focus marking strategy is adopted (c) Failing to capture the distinctive prosodic manifestations of an exhaustive contrast and a plain contrast

Table 6 Summary of the strengths and weaknesses of the three discussed analyses.

3.4 Exhaustivity tests

Given the three analyses discussed above all paid special attention to the exhaustive semantic nature of the *shi*-marked focus, in this subsection, I further confirm this claim by presenting the comprehensive results of three exhaustivity tests: the entailment test (Szabolcsi 1981), the negation test (Kiss 1998) and the coordination test (Paul & Whitman 2008, Van der Wal 2016). To begin with, I briefly explain how these tests work. The entailment test contains a pair of sentences in the same construction. In the first sentence, the focus is composed of two coordinated phrases. Only one of them is retained in the focus position of the second sentence. If the first sentence logically brings about the second one, in other words, if the two sentences can be concatenated by ‘therefore/hence’, then the focus in the first sentence does not encode exhaustive identification. In contrast, if the second sentence fails to be a logical result of the former one, an exhaustive focus is thereby coerced by the sentence structure. The mechanism behind the negation test proposed by Kiss (1998) is that, if a focused constituent does not form an exhaustive subset of the potential alternatives and can be corrected by supplying some additional information, the position that hosts the focus should be an exhaustive focus position. Lastly, the coordination test functions based on the algorithm that if the focus marked by a specific sentence structure is exhaustive, it cannot be coordinated by another focus marked by the same sentence structure. As is briefly touched upon in the previous subsection, our tests will be set up on the basis of certain contexts that allow the addressee to have a clear mental representation of not only the focused element but also a set of contextually available alternatives that the focus anchors. Let us now apply the tests to the representatives of each pattern one by one.

In the initial bare *shi* construction, when *shi* is immediately followed by an intonationally prominent subject, the subject gets a narrow CF reading. Our test results show that this CF is exhaustive.

- (41) Context: The company hosted a welcome party yesterday for the new recruits to meet their co-workers. The tradition for this event is to invite newcomers to show their artistic talents. *Zhaoyi* played a solo on the piano; *Wangwu* performed a modern dance; *Zhangsan* and *Lisi* sang a pop song together.

Q: *Zuotian shi shei chang-ge le?*
Yesterday SHI who sing-sang PFV

‘Who was it that did singing yesterday?’

a. Entailment test

A: *Shi [ZHANGSAN HE LISI]_{CF} zuotian chang-ge le. #Yinci*
SHI Zhangsan and Lisi yesterday sing-song PFV therefore
shi [ZHANGSAN]_{CF} zuotian chang-ge le.
SHI Zhangsan yesterday sing-song PFV

Int.: ‘It was Zhangsan and Lisi who did singing yesterday. Therefore, it was Zhangsan who did singing yesterday.’

b. Negation test

A: *Shi* [ZHANGSAN]_{CF} *zuotian chang-ge le.*
 SHI Zhangsan yesterday sing-song PFV

‘It was Zhangsan who did singing yesterday.’

Correction:

Bu, Lisi zuotian ye chang-ge le.
 No Lisi yesterday also sing-song PFV

‘No, Lisi also did singing yesterday.’

c. Coordination test

A: #*Shi* [ZHANGSAN]_{CF} *ye shi* [LISI]_{CF} *zuotian chang-ge le.*
 SHI Zhangsan also SHI Lisi yesterday sing-song PFV

Int.: ‘It was Zhangsan and it was also Lisi who did singing yesterday.’

The context in (41) provides a set of individuals who showed their talents during the event: *Zhaoyi*, *Wangwu*, *Zhangsan* and *Lisi*. The question is to inquire which of them sang at the party. From the entailment test, we can observe that the second sentence fails to be a logical consequence of the first one, evidencing that the focus following *shi* has an exhaustive interpretation because *Zhangsan* and *Lisi* form an exhaustive subset of people who did singing at the party. This pattern also passes the negation test. That is, if a non-exhaustive focus is involved in the answer it can be negated in the correction, accompanied by the addition of some other information. Furthermore, the sentence in the coordination test is infelicitous because the two coordinated *shi*-marked elements, which are supposed to be exhaustive on their own make people feel that the speaker has stumbled into self-contradiction.

Let us now examine if these tests could be applied to the IP focus marked by a clause-initial *shi*, when no particular constituent receives a focal stress.

- (42) Context: *Zhaoyi* and *Wangwu* were chatting in the shared kitchen about yesterday’s drama among their friends: *Zhangsan* was ranked first in an exam among his peers in the class; *Songyi* lost her phone in the canteen; and *Lisi* found a dream job.

Q: *Zuotian shi fasheng le shenme hao shiqing?*
 yesterday SHI happen PFV what good matter

‘What good things happened yesterday?’

a. Entailment test

A: *Shi Zhangsan kao le diyi he Lisi zhao-dao le gongzuo,*
 SHI Zhangsan exam PFV first and Lisi find-arrive PFV job

#*Yinci, shi Zhangsan kao le diyi.*
 therefore SHI Zhangsan exam PFV first

Int.: ‘It was that Zhangsan ranked first in the class in an exam and Lisi found a job. Therefore, it was that Zhangsan ranked first in the class.’

b. Negation test

A: *Shi Zhangsan kao le diyi.*
 SHI Zhangsan exam PFV first

‘It was that Zhangsan ranked first in the class in an exam.’

Correction:

Bu, Lisi ye zhao-dao le gongzuo.
 No Lisi also find-arrive PFV job

‘No, Lisi also found a job.’

c. Coordination test

A: #*Shi Zhangsan kao le diyi, ye shi Lisi zhao-dao le*
 SHI Zhangsan exam PFV first also SHI Lisi find-arrive PFV
gongzuo.
 job

Int.: ‘It was that Zhangsan ranked first in the class in an exam and it was also that Lisi found a job.’

As elaborated by the results, the IP focus marked by *shi* is identified to be exhaustive.

When *shi* is immediately followed by an ex-situ constituent such as an adjunct, an object, or a VP, the initial bare *shi* pattern also encodes an exhaustive focus in the absence of prosodic prominence. Consider an example below containing a displaced object.

- (43) Context: Prof. Wang held a meeting last week to collect people’s feedback on his new lecture: The Foundations of Linguistics. Four student representatives attended the meeting: Zhaoyi, Wangwu, Zhangsan and Lisi. Prof. Wang asked Zhaoyi about his opinion on the reading list, and he asked Lisi a question relevant to the final assessment method.

Q: *Wangjiaoshou zai hui shang shi ti-wen le shei?*
 Prof. Wang in meeting on SHI raise-question PFV who

‘Who was it that Prof. Wang questioned in the meeting?’

a. Entailment test

A: *Shi [Zhaoyi he Lisi]_{CF/i} ta ti-wen le t_i. #Yinci, shi*
 SHI Zhaoyi and Lisi 3SG raise-question PFV therefore SHI
Zhaoyi ta ti-wen le.
 Zhaoyi 3SG raise-question PFV

Int.: ‘It was Zhaoyi and Lisi that he questioned. Therefore, it was Zhaoyi that he questioned.’

b. Negation test

A: *Shi [Zhaoyi]_{CF/i} ta ti-wen le t_i.*
 SHI Zhaoyi 3SG raise-question PFV

‘It was Zhaoyi that he questioned.’

Correction:

Bu, ta ye xiang Lisi ti-wen le.
 No 3SG also towards Lisi raise-question PFV

‘No, he also questioned Lisi.’

c. Coordination test

A: #*Shi [Zhaoyi]_{CF/i} ta ti-wen t_i le ye shi*
 Zhaoyi 3SG raise-question PFV also SHI Lisi 3SG
[Lisi]_{CF/j} ta ti-wen le t_j.
 raise-question PFV

Int.: ‘It was Zhaoyi and it was also Lisi that he questioned.’

Among the set of discourse-given alternatives: *Zhaoyi*, *Wangwu*, *Zhangsan*, and *Lisi*, *Zhaoyi* and *Lisi* constitute the only subset of individuals who were questioned by Prof. *Wang*. The results of the three tests applied in (43), just as what we observed in (42), evidence that the ex-situ object marked by *shi* (in the absence of PF-marking) in the initial bare *shi* construction also bears an exhaustive focus construal.

Now let us turn to the pseudo-clause-medial bare *shi* pattern. As we know, *shi* can appear to the immediate left of any constituents above VP in this pattern, licensing the constituent an exhaustive focus interpretation. Consider an example containing a focused temporal adjunct immediately following *shi*.

- (44) Context: In *Lin Dan*’s sporting career, he competed in three Olympic games: in 2004, 2008, and 2012. Remarkably, he clinched consecutive championships in the men’s singles badminton events at the 2008 (Beijing) and 2012 (London) Summer Olympics.

Q: *Lin Dan shi shenme-shihou huode le aoyun guanjun?*
 Lin Dan SHI what-time achieve PFV Olympics championship

‘When was it that Lin Dan win the Olympic championship?’

a. Entailment test

A: *Lin Dan shi [2008 nian he 2012]_{CF} nian huode le aoyun*
 Lin Dan SHI 2008 year and 2012 year achieve PFV Olympics
guanjun. #Yinci Lin Dan shi 2008 nian huode le
 championship therefore Lin Dan SHI 2008 year achieve PFV
aoyun guanjun.
 Olympics championship

Int.: ‘It was in 2008 and 2012 that Lin Dan won the Olympic championships. Therefore, it was in 2008 that Lin Dan won the Olympic championship.’

b. Negation test

A: *Lin Dan shi [2008 nian]_{CF} huode le aoyun guanjun.*
 Lin Dan SHI 2008 year achieve PFV Olympics championship

‘It was in 2008 that Lin Dan won the Olympic championship.’

Correction:

Bu, Lin Dan shi [2008 nian he 2012 nian]_{CF} huode le aoyun
 no Lin Dan SHI 2008 year and 2012 year achieve PFV Olympics
guanjun.
 championship

‘No. It was in 2008 and 2012 that Lin Dan won the Olympic championships.’

c. Coordination test

A: *#Lin Dan shi [2008 nian]_{CF} ye shi [2012 nian]_{CF} huode le*
 Lin Dan SHI 2008 year also SHI 2012 year achieve PFV
aoyun guanjun.
 Olympics championship

Int.: ‘It was in 2008 and it was also in 2012 that Lin Dan won the Olympic championships.’

Among the three alternative years, *Lin Dan* won the Olympic championships only in 2008 and 2012. These two years form an exhaustive subset of the years when *Lin Dan* won the Olympic championships. Therefore, the pseudo-clause-medial *shi* pattern with a *shi*-marked in-situ temporal adjunct passes the three tests, indicating that the narrow focus has an exhaustive identification. Based on the same context as in (44), we also want to test if the non-adjacent element can be marked as an EF through AwF.

- (45) Q: *Lin Dan 2008 nian he 2012 nian shi zai nali huode le*
Lin Dan 2008 year and 2012 year SHI in where achieve PFV
aoyun guanjun?
Olympic championship

‘Where was it that Lin Dan achieved his Olympic championships in 2008 and 2012?’

a. Entailment test

A: *Lin Dan shi 2008 nian he 2012 nian [zai BEIJING he*
Lin Dan SHI 2008 year and 2012 year in Beijing and
LUNDUN]_{CF} huode le aoyun guanjun. #Yinci, ta
London achieve PFV Olympic championship therefore 3SG
shi 2008 nian he 2012 nian [zai BEIJING]_{CF} huode le
SHI 2008 year and 2012 year in Beijing achieve PFV
aoyun guanjun.
Olympic championship

Int.: ‘It was in Beijing and London that Lin Dan won the Olympic Championships in 2008 and 2012 respectively. Therefore, it was in Beijing that Lin Dan won the Olympic Championships in 2008 and 2012.’

b. Negation test

A: *Lin Dan shi 2008 nian he 2012 nian [zai BEIJING]_{CF} ye shi*
Lin Dan SHI 2008 year and 2012 year in Beijing also SHI
2008 nian he 2012 nian [zai LUNDUN]_{CF} huode le aoyun
2008 year and 2012 year in London achieve PFV Olympic
guanjun.
championship

‘It was in Beijing that Lin Dan won the Olympic Championship in 2008 and 2012.’

Correction:

Bu, Lin Dan shi 2008 nian he 2012 nian [zai BEIJING he
No Lin Dan SHI 2008 year and 2012 year in Beijing and
LUNDUN]_{CF} huode le aoyun guanjun.
London achieve PFV Olympic championship

‘No, it was in Beijing and London that Lin Dan won the Olympic Championships respectively.’

c. Coordination test

A: #Lin Dan shi 2008 nian he 2012 nian [zai BEIJING]_{CF} ye shi
 Lin Dan SHI 2008 year and 2012 year in Beijing also SHI
 2008 nian he 2012 nian [zai LUNDUN]_{CF} huode le aoyun
 2008 year and 2012 year in London achieve PFV Olympic
guanjun.
 championship

Int.: 'It was in Beijing and it was also in London that Lin Dan won the Olympic championship in 2008 and 2012.'

As (45) suggests, PF-marked non-adjacent foci in the bare pseudo-clause-medial *shi* pattern also have an exhaustive construal. Lastly, let us see how these tests work in *shi...de* constructions. Due to space limits, I take two *shi...de* patterns as representatives: (i) the *shi...de* construction with a clause-initial *shi* and a pre-object *de*, where the stressed subject is narrowly marked as a focus by *shi*; (ii) the *shi...de* construction with a pseudo-clause-medial *shi* and a sentence-final *de*, where the non-adjacent stressed DP located within the adjunct is focus-marked by *shi*. First, let us consider (46), an instance of the former type.

- (46) Context: In the first lecture of a painting course, the teacher asked the students to sketch one of their favorite animals on their own boards. *Zhaoyi* drew a corgi, *Wangwu* drew a penguin, and *Zhangsan* drew a bull terrier.

Q: *Shi shei hua de gou?*
 SHI who draw DE dog

'Who was it that drew a dog?'

a. Entailment test

A: *Shi [ZHAOYI he ZHANGSAN]_{CF} hua de gou. #Yinci shi*
 SHI Zhaoyi and Zhangsan draw DE dog therefore SHI
Zhaoyi hua de gou.
 Zhaoyi drew DE dog

Int.: 'It was Zhaoyi and Zhangsan who drew a dog. Therefore, it was Zhaoyi who drew a dog.'

b. Negation test

A: *Shi [ZHAOYI]_{CF} hua de gou.*
 SHI Zhaoyi draw DE dog

'It was Zhaoyi who drew a dog'

Correction:

Bu, Zhangsan ye hua de gou.
 No Zhangsan also draw DE dog

'No, Zhangsan also drew a dog.'

c. Coordination test

A: #*Shi* [ZHAOYI]_{CF} *ye shi* [ZHANGSAN]_{CF} *hua de gou.*
SHI Zhaoyi also SHI Zhangsan draw DE dog

Int.: 'It was Zhaoyi and it was also Zhangsan who drew a dog.'

Evidently, this pattern passes the three exhaustivity tests: the focused subject immediately following *shi* expresses an exhaustive identification of the individuals who drew a dog, to the exclusion of the other alternative – *Wangwu*. Likewise, similar results can be found in the *shi...de* pattern with a pseudo-clause-medial *shi* and a sentence-final *de* where the non-adjacent stressed DP is PF-marked, (47).

- (47) Context: Following a relaxing summer break, *Zhangsan* journeyed from his hometown, Jiaying, back to his university in Beijing. He opted for a train ride for the first leg of the trip, traveling from Jiaying to Shanghai. For the latter part, he boarded a plane from Shanghai to Beijing.

Q: *Zhangsan shi zenme qu Beijing de?*
Zhangsan SHI how go Beijing DE

'How did Zhangsan go to Beijing?'

a. Entailment test

A: *Zhangsan shi zuo [HUOCHE he FEIJI]_{CF} qu de. #Yinci*
Zhangsan be sit train and airplane go DE therefore
Zhangsan shi zuo huoche qu de
Zhangsan be sit train go DE

Int.: 'It was by train and plane that Zhangsan went there. Therefore, it was by train that Zhangsan went there.'

b. Negation test

A: *Zhangsan shi zuo [HUOCHE]_{CF} qu de.*
Zhangsan SHI sit train go DE

'It was by train that Zhangsan went there.'

Correction:

Bu, Zhangsan ye zuo le feiji.
No Zhangsan also sit PFV plane

'No, he also took a plane.'

c. Coordination test

A: #*Zhangsan shi zuo [HUOCHE]_{CF} qu de, ye shi zuo [FEIJI]_{CF}*
Zhangsan SHI sit train go DE also SHI sit plane
qu de.
go DE

Int.: 'It was by train that he went there, and it was also by plane that he went there.'

By now, I have proved with evidence that the *shi*-marked foci in question all bear an exhaustive identification, regardless of whether they are marked through *shi*-focus Adjacency or AwF. Noticeably, since, in some of the patterns that we discussed, PF-marking is obligatory for a particular constituent to take a narrow focus reading, one may conjecture that it might be the prosodic prominence rather than *shi* that enforces an exhaustive construal of these foci. However, this speculation does not hold. This can be explained by comparing the exhaustivity test results of a minimal pair: an initial bare *shi* pattern with a prosodically-marked subject (see (i) sentences in (48)) and a sentence containing only a stressed subject in the absence of *shi* (see (ii) sentences).

- (48) Context: The company hosted a welcome party for the new recruits. The tradition for this event is to invite newcomers to show their artistic talents. *Zhaoyi* played a solo on the piano; *Wangwu* performed a modern dance; *Zhangsan* and *Lisi* sang a pop song together.

Q: *Zuotian shei chang-ge le?*
yesterday who sing-song PFV

‘Who did singing yesterday?’

a. Entailment test

- i. Both *shi* and prosodic prominence on the subject are present

A: *Shi [ZHANGSAN he LISI]_{CF} zuotian chang-ge le. #Yinci*
SHI Zhangsan and Lisi yesterday sing-song PFV therefore
shi Zhangsan zuotian chang-ge le.
SHI Zhangsan yesterday sing-song PFV

Int.: ‘It was Zhangsan and Lisi who did singing yesterday. Therefore, it was Zhangsan who did singing yesterday.’

- ii. Only prosodic prominence on the subject is present

A: *[ZHANGSAN he LISI]_{CF} zuotian chang-ge le. Yinci*
Zhangsan and Lisi yesterday sing-song PFV therefore
ZHANGSAN zuotian chang-ge le.
Zhangsan yesterday sing-song PFV

‘Zhangsan and Lisi did singing yesterday. Therefore, Zhangsan did singing yesterday.’

b. Negation test

- i. Both *shi* and prosodic prominence on the subject are present

A: *Shi [ZHANGSAN]_{CF} zuotian chang ge le.*
SHI Zhangsan yesterday sing song PFV

‘It was Zhangsan who did singing yesterday.’

Correction:

Bu, Lisi zuotian ye chang-ge le.
no Lisi yesterday also sing-song PFV

‘No, Lisi did singing too.’

- ii. Only prosodic prominence on the subject is present

A: [ZHANGSAN]_{CF} *zuotian chang-ge le.*
Zhangsan yesterday sing-song PFV

‘Zhangsan did singing yesterday.’

Correction:

#*Bu, Lisi zuotian ye chang-ge le.*
no Lisi yesterday also sing-song PFV

Int.: ‘No, Lisi did singing too yesterday.’

- c. Coordination test

- i. Both *shi* and prosodic prominence on the subject are present

A: #*Shi [ZHANGSAN]_{CF} ye shi [LISI]_{CF} zuotian chang-ge le.*
SHI Zhangsan also SHI Lisi yesterday sing-song PFV

Int.: ‘It was Zhangsan and it was also Lisi who did singing yesterday.’

- ii. Only prosodic prominence on the subject is present

A: [ZHANGSAN]_{CF} *zuotian chang-ge le,* [LISI]_{CF} *zuotian ye*
Zhangsan yesterday sing-sang PFV Lisi yesterday also
chang-ge le.
sing-sang PFV

‘Zhangsan did singing yesterday and Lisi did too.’

Given the opposite results that pattern (i) and pattern (ii) deliver in (48), it is particularly telling that the prosodic prominent subject only represents a non-exhaustive contrastive focus in the absence of the clause-initial *shi*, as opposed to the exhaustively focused subject coerced in pattern (i). It is then self-evident that prosodic prominence in Mandarin only marks a plain contrastive focus, and *shi* is exclusively responsible for marking the exhaustive identification of the focus. Then the question arises as to why, in the *shi*-containing focus structures, there are cases where *shi* can independently mark an EF and there are also cases where both *shi* and the prosodic prominence have to co-exist for EF marking. In addition, why, in the former cases, does the EF independently marked by *shi* have to appear to the immediate right of *shi*, whereas in the latter cases, the exhaustive foci are mostly non-adjacent to *shi*? The upcoming section is dedicated to syntactically accounting for this asymmetry regarding the Adjacency requirement while taking into account the exhaustive semantic interpretation of the focus made available by *shi*.

4 TOWARDS A MINIMALIST APPROACH

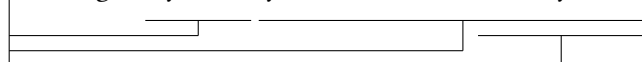
Recall that in the derivation of the unmarked interpretations of all six studied focus constructions featuring *shi*, they adhere to the Adjacency requirement: the initial *shi* constructions provide a sentential exhaustive focus reading to the entire IP proposition (as seen in example 42), while the neighboring constituents to the right of *shi* receive a narrow exhaustive focus reading in the pseudo-clause-medial *shi* patterns (as exemplified in example 44). Despite the adjacent relations between the unmarked foci and *shi*, non-default EF-marking strategies including linear reordering and PF marking display an asymmetry in terms of the *shi*-focus Adjacency condition. Specifically, let us take the *shi...de* construction with a clause-initial *shi* as an example. This pattern makes available two types of marked foci: those undergoing linear reordering from a remote position to the right-adjacent position of *shi* (see 49a), and those bearing the prosodic prominence while remaining remote (see 49b).

(49) a. Adjacency-obeying

Adjunct/VP/Object-focus

*Shi*____ *Zhangsan zuotian* [_{VP} *zhao-dao de* [_{DP} *wo-de yaoshi*].

SHI ↑ *Zhangsan yesterday find-arrive DE my key*



‘It was yesterday that Zhangsan found my keys.’ / ‘It was finding out my keys that Zhangsan did yesterday.’ / ‘It was my keys that Zhangsan found yesterday.’

b. Adjacency-violating

Shi Zhangsan [_{ZUOTIAN}]_{EF} *zhao-dao de wo-de yaoshi*.

SHI *Zhangsan yesterday find-arrive DE my key*

‘It was yesterday that Zhangsan found my keys.’

This asymmetry equally applies to the non-default foci marked in pseudo-clause-medial *shi...de* constructions. Adjacency is respected when the linear reordering strategy is in play and disrespected when prosody takes over, as shown in (50a, 50b).

(50) a. Adjacency-obeying

Zhangsan shi [_{zai Zhongguocheng}]_{EF/i} *shangzhou t_i chi de*

Zhangsan SHI in Chinatown last-week eat DE

kaoya.

roasted-duck

‘It was in Chinatown that Zhangsan ate the roasted duck last week.’

b. Adjacency-violating

Zhangsan shi shangzhou [zai ZHONGGUOCHENG]_{EF} chi de
 Zhangsan SHI last-week in Chinatown eat DE
kaoya
 roasted-duck

‘It was in Chinatown that Zhangsan ate the roasted duck last week.’

To sum up, in all the studied cases, Adjacency must be obeyed in two situations: one is to derive an unmarked EF (see 51a-i, 51b-i and 51b-ii); the other is when linearly fronting a non-adjacent constituent of *shi* (see 51a-iv, 51a-v and 51a-vi). When Adjacency and PF-marking simultaneously apply, it renders (51a-ii), (51a-iii), (51a-vii), and (51b-iii).

(51) Adjacency-obeying

a. Initial *shi* constructions

Shi Zhangsan zuotian zhao-dao le/de wo-de yaoshi.
 SHI Zhangsan yesterday find-arrive PFV/DE my key

i. Sentential focus

Shi [Zhangsan zuotian zhao-dao le/de wo-de yaoshi]_{EF}.

‘It is that Zhangsan found my keys yesterday.’

ii. Subject focus

Shi [ZHANGSAN]_{EF} zuotian zhao-dao le/de wo-de yaoshi.

‘It is Zhangsan that found my keys yesterday.’

iii. Subject-embedded focus

Shi [DP [CP [ZHANGSAN]_{EF} mai de] gou] zui keai.
 SHI Zhangsan buy DE dog most cute

‘It is the dog that ZHANGSAN bought that’s the cutest.’ (Xu 2010: 143; cited by Erlewine 2022)

iv. Ex-situ adjunct focus

Shi [zuotian]_{EF/i} Zhangsan t_i zhao-dao le/de wo-de yaoshi.

‘It was yesterday that Zhangsan found my keys.’

v. Ex-situ VP focus

Shi [zhao-dao le/de wo-de yaoshi]_{EF/i} Zhangsan zuotian t_i.

‘It was finding out my keys that Zhangsan did yesterday.’

vi. Ex-situ object focus

Shi [wo-de yaoshi]_{EF/i} Zhangsan zuotian zhao-dao le/de t_i.

‘It was my keys that Zhangsan found yesterday.’

- vii. Verb focus
Shi [_{VP} [ZHAO-DAO]_{EF} *le/de wo-de yaoshi*]_i *Zhangsan zuotian t_i*.
 ‘It was FINDING OUT my keys that Zhangsan did yesterday.’
- b. Pseudo-clause-medial *shi* constructions
Zhangsan shi zuotian zhao-dao le/de wo-de yaoshi.
 Zhangsan SHI yesterday find-arrive PFV my key
- i. Adjunct focus
Zhangsan shi [zuotian]_{EF} zhao-dao le/de wo-de yaoshi.
 ‘It was yesterday that Zhangsan found my keys.’
- ii. VP focus
Zhangsan zuotian shi [zhao-dao le/de wo-de yaoshi]_{EF}.
 ‘It was finding out my keys that Zhangsan did yesterday.’
- iii. Verb focus
Zhangsan zuotian shi [_{VP} [ZHAO-DAO]_{EF} *le/de wo-de yaoshi*].
 ‘It was FINDING OUT my keys that Zhangsan did yesterday.’

On the other hand, Adjacency can be violated when a remote element bears the intonational prominence (see 52).

(52) Adjacency-violating

- a. Initial *shi* constructions
- i. Adjunct focus
Shi Zhangsan [ZUOTIAN]_{EF} zhao-dao le/de wo-de yaoshi.
 ‘It was yesterday that Zhangsan found my keys.’
- ii. Subject-embedded focus (except for the embedded subject)
Shi [_{DP} [_{CP} *Zhangsan mai de*] [_{GOU}]_{EF}] *zui keai*.
 ‘It is the DOG that Zhangsan bought that is the cutest.’
- b. Pseudo-clause-medial *shi* constructions
- i. Non-adjacent adjunct focus
Zhangsan shi zuotian [zai JIANSHEINFANG]_{EF} zhao-dao le/de wo-de yaoshi.
 ‘It was in the gym that Zhangsan found my keys yesterday.’
- ii. VP focus
Zhangsan shi zuotian [_{VP} ZHAO-DAO LE WO-DE YAOSHI]_{EF}.
 ‘It was finding out my keys that Zhangsan did yesterday.’

iii. Verb focus

Zhangsan shi zuotian [_{VP} [_{ZHAO-DAO}]_{EF} *le/de wo-de yaoshi*].

‘It was FINDING OUT my keys that Zhangsan did yesterday.’

iv. Object focus

Zhangsan shi zuotian [_{VP} *zhao-dao le/de wo-de* [_{YAOSHI}]_{EF}].

‘It was my keys that Zhangsan found yesterday.’

With this information, what we now require is an analysis capable of explaining the Adjacency asymmetry demonstrated above. I propose that this asymmetry pertains to the alternation between ‘Agree with movement’ and ‘Agree without movement’. As is originally defined (Chomsky 2000, 2001), Agree happens when the interpretable feature on the goal matches the uninterpretable feature on the probe, while movement is only motivated given an Agree relation is held and the c-commanding probe bears an EPP feature. Hence, I argue for an optional EPP feature in the Foc head that manipulates the movement-non-movement alternation which accounts for the Adjacency asymmetry. Based on the data we observed so far, it is arguably true that this EPP feature is present in the phonetically null Foc head by default, thereby rendering the unmarked interpretations of the six focus constructions. Additionally, this step of movement happens for the criterial checking of the [FOCUS] feature (Rizzi 2006) on Foc. When *shi* appears in a post-topic position, EPP can be absent, so that any prosodically prominent element, even for a non-XP element such as the verb (see 53a), that is far apart from *shi* can bear the [FOCUS] feature through Agree while remaining in situ. This is licensed because Agree is applicable to heads, which does not necessarily require movement. Thus, the prosodic marking can be seen as a reflex of this Agree relation between *shi* and the relevant element.

- (53) a. [*Zhangsan*]_{TOP} *shi zuotian* [_{DIU}]_{EF} *le wo-de yaoshi, bu shi*
Zhangsan SHI yesterday lose PFV my key NEG SHI
 [_{ZHAO-DAO}]_{EF} *le wo-de yaoshi.*
 find-arrive PFV my key

‘It was losing my keys that Zhangsan did yesterday rather than finding out my keys.’

- b. # [*Zhangsan zuotian*]_{TOP} *shi* [_{DIU}]_{EF} *le wo-de yaoshi, bu shi*
Zhangsan yesterday SHI lose PFV my key NEG SHI
zhao-dao le wo-de yaoshi.
 find-arrive PFV my key

Int.: ‘It was losing my keys that Zhangsan did yesterday rather than finding out my keys.’

Crucially, a non-XP element is not allowed to be marked as a focus by simply being adjacent to *shi* without any PF-marking (see 53b). This is because, in the absence of

the PF strategy, the sentence is reset to its default algorithm of EF-marking – *shi* marks its right-adjacent constituent VP as an EF.

Given this much, we are now faced with the questions as to where *shi* is merged and how the exhaustive identification induced by *shi* is represented in syntax. Coming up, I argue that the exhaustive interpretation associated with the *shi*-marked focus is a conventional implicature, in line with Potts (2007). This proposal is corroborated by two facts. First, the exhaustive import cannot be canceled by the speaker per se, as coordinating some additional alternatives to the exhaustive subset (see the coordination tests presented in subsection 3.4) is completely ruled out. This suggests that exhaustive identification is not just relevant but integral and undeniable for interpreting the *shi*-marked focus. Consequently, it has become an inherent part of the meaning of *shi* through conventionalization.

On the other hand, as we know, *shi* is actually a copula in Mandarin Chinese, equivalent to the English *be*. Crosslinguistically, it has been attested that a focus marker is derivable from a matrix copula, which, in turn, inevitably leads to a reduction from a biclausal cleft construction to a monoclausal construction (Khan 2019). This diachronic grammaticalization supposedly holds for *shi* forms the second argument lending credence to my proposal: the exhaustive inference of *shi* is conventionalized in the language and not at-issue. To the best of my knowledge, languages present two trajectories for the transformation from a biclausal cleft construction to a monoclausal focus construction. This is taken as an upshot of the matrix copula undergoing varying degrees of grammaticalization, with some languages undergoing complete deletion of the copula (such as Israeli Hebrew and Middle Welsh), while others witness its morphological transformation into a focus particle (as observed in Haitian Créole French). According to Khan (2019), a copula that normally connects a clefted constituent and a presuppositional subordinate clause is omissible in Semitic languages such as Israeli Hebrew and Syriac.¹¹ (54) offers an Israeli Hebrew example of what Goldenberg refers to as an ‘imperfectly transformed cleft sentence’, as there is no copula between the expletive *it* and the clefted constituent *I*.

- (54) *ze ʔani halaxti* [Israeli Hebrew]
 It I go.PST.1SG
 ‘It is me that has gone’ (Goldenberg 1973; adapted by Khan 2019)

Another typical monoclausal cleft construction that is developed from a biclausal one is from Haitian Créole French, as is shown in (55).

- (55) *Se sou chen mèg yo wè pis* [Haitian Créole French]
 FOC LOC dog thin 3PL see flea
 ‘ON A THIN DOG the fleas can be seen’
 (Muysken & Veenstra 1995; adapted by Khan 2019)

¹¹ A similar phenomenon is documented in Middle Welsh (Meelen 2020).

The example in (55) is originated from the French cleft sentence – *C’est sur un chien maigre qu’ils voient les puces* ‘It was on a thin dog that the fleas can be seen.’. In the Haitian Créole French equivalent, *c’est* ‘it is’ emerges as a reduced focus particle *se*, and the relativizer *que* ‘that’ has been omitted. This cross-linguistic phenomenon strongly suggests that the *shi*-containing focus construction has undergone a similar grammaticalization path: transforming the copula into a focus particle (without changing the form) and reducing the biclausal structure to a monoclausal one. If this analysis held, we would anticipate that the grammaticalized *shi* is distinguishable from the copula *shi*. This expectation is indeed confirmed. The key evidence comes from two aspects. First, the grammaticalized *shi* in these focus constructions induces an exhaustive interpretation of the focus (see 56a), while a copula *shi* that normally appears in equative sentences can introduce theoretically unlimited conjuncts, which in turn cancels out the exhaustivity of each conjunct (see 56b).

- (56) a. Focus particle *shi*
Shi [ZHANGSAN]_{EF} *zhao-dao le wo-de yaoshi.*
 SHI Zhangsan find-arrive PFV my key
 ‘It was Zhangsan who found my keys.’
 ⇒ Nobody else found my keys.
- b. Copula *shi*
Ta shi laoshi, ta shi qizi, ta ye shi mama.
 2SG COP teacher 2SG COP wife 2SG also COP mother
 ‘She is a teacher, a wife and a mother.’

Additionally, as is briefly touched upon in section 3, unlike the previous authors (Chiu 1993, Simpson & Wu 2002, Paul & Whitman 2008, Cheng 2008, Pan & Liu 2023), I am not a proponent who claims that *shi* is a matrix predicate. This is mainly for the reason that when a negator is placed to the left of the grammaticalized *shi*, its scope of negation only affects the focus, regardless of how the focus is assigned. However, when no element introduced by a verbal predicate or the copula *shi* bears PF marking, the scope of negation encompasses the entire predicate. This can be shown by a contrast between (57a, 57a) and (58).

- (57) a. Adjacency-obeying
Zhangsan bu shi [zuotian]_{EF} zai jianshenfang zhao-dao le
 Zhangsan NEG SHI yesterday in gym find-arrive PFV
wo-de yaoshi.
 my key
 ‘It was not yesterday that Zhangsan found my keys in the gym.’ / *‘It was yesterday that Zhangsan did not find my keys in the gym.’

b. Adjacency-violating

Zhangsan bu shi zuotian zai jianshenfang zhao-dao le
 Zhangsan NEG SHI yesterday in gym find-arrive PFV
 [WO-DE YAOSHI]_{EF}.
 my key

‘It was not my keys that Zhangsan found in the gym yesterday.’ / *‘It was my keys that Zhangsan did not find in the gym yesterday.’

(58) Zhangsan bu [_{vP} xihuan zai jianshenfang duanlian].
 Zhangsan NEG like in gym exercise

‘Zhangsan does not like to do exercises in the gym.’

The second mission of this section is to syntactically account for the interpretive effect coerced by *shi*. Since the semantics of an exhaustive focus marked by *shi* comprises two components: an identification of a subset of alternatives evoked by the focus structure (this component is shared by all focus types) and a denial of all the other alternatives that potentially make the presupposition true (this component is EF exclusive), I propose an articulated focus projection in the left periphery, following Bianchi et al. (2015, 2016). Given that the exhaustive implicature of the focus is only activated in the availability of a set of alternative propositions triggered by a focus structure, I argue that there is a *Focus-associated-implicature Projection* (FaiP in short) base generated right above the FocP. I further propose that *shi* is merged in the head of FaiP, bearing an implicature triggering feature [EXHAUSTIVE]. In this vein, the former semantic component of a *shi*-marked focus is completed by the time the [FOCUS] feature of Foc is checked off, with its specifier being optionally filled. The second semantic component is achieved through the selectional requirement imposed by the Fai head *shi* on the element bearing a focus feature. Since, as I have conjectured previously, the Foc head is specified [FOCUS, (EPP)], the following schematization should offer a syntactic account for the asymmetry in terms of the Adjacency requirement.

(59) a. Adjacency-obeying

[_{ForceP} Force ... [_{FaiP} *shi*⁰_{[EXH]] [_{FocP} XP Foc⁰_{[FOC, EPP]] ... [TP ... <XP> ...]]]}}

↑

Critical Checking

b. Adjacency-violating

[_{ForceP} Force ... [_{FaiP} *shi*⁰_{[EXH]] [_{FocP} Foc⁰_{[FOC]] ... [TP ... <... [_{XP} X⁰_[Y_P ...]]> ...]]]}}

|-----|
Agree

Regarding the negator *bu*, I propose that it be directly attached to the Fai head *shi*. This then automatically explains why the negation is only focus-sensitive because

the complex – *bu-shi* – only selects a focus as its complement, be it overtly fronted to Spec-FocP or remaining in situ and checking the [FOCUS] feature through Agree.

Up until now, there is an outstanding fact which we have repeatedly exploited but so far not accounted for: why does the clause-initial *shi* rely on prosody to associate with both its neighboring constituent – the subject, and its non-neighboring constituents such as the adjunct, as shown in (60a-60b)? This indicates that in an effort to EF-mark the subject, both Adjacency and PF-marking should be involved. The same goes with examples in (51a-iii), (51a-vii) and (51b-iii). Would this run counter to the two mutually exclusive Agree relations we set in (59)? In other words, if we assume that the *shi*-adjacent subject checks the [FOCUS] feature by means of (59a), the non-movement Agreement option – as shown in (59b) – should become inactive, as the [FOCUS] feature has already been checked. Then, why does the subject still bear the prosodic prominence?

- (60) a. *Shi* [ZHANGSAN]_{EF} *zuotian zai jianshenfang zhao-dao de wo-de*
 SHI Zhangsan yesterday in gym find-arrive DE my
yaoshi
 key
 ‘It was Zhangsan who found my keys in the gym yesterday.’
- b. *Shi Zhangsan* [ZUOTIAN]_{EF} *zhao-dao de wo-de yaoshi.*
 SHI Zhangsan yesterday find-arrive DE my key
 ‘It was yesterday that Zhangsan found my keys not the day before yesterday.’

Here I propose a restriction on the application of (59b). This is shown as below.

- (61) *The restriction on the application of ‘Agreement without movement’*
 The ‘Agreement without movement’ rule only applies to elements that are linearly non-adjacent to *shi*.

For elements that are linearly adjacent to *shi*, the prosodic prominence is treated as a disambiguation strategy to distinguish them from the readily available focus readings on their extended maximal projections, namely the IP (for 62a-62b) or the VP (for 62c-62d).

- (62) a. Subject focus
Shi [ZHANGSAN]_{EF} *zuotian zhao-dao le wo-de yaoshi.*
 ‘It is Zhangsan that found my keys yesterday.’
- b. Embedded-subject focus
Shi [_{DP} [_{CP} [ZHANGSAN]_{EF} *mai de*] *gou*] *zui keai.*
 SHI Zhangsan buy DE dog most cute
 ‘It is the dog that Zhangsan bought that’s the cutest.’ (Xu 2010: 143; cited by Erlewine 2022)

- c. Verb focus
Shi [_{VP} [ZHAO-DAO]_{EF} *le wo-de yaoshi*]_i *Zhangsan zuotian t_i*.
 ‘It was FINDING OUT my keys that Zhangsan did yesterday.’
- d. Verb focus
Zhangsan zuotian shi [_{VP} [ZHAO-DAO]_{EF} *le wo-de yaoshi*].
 ‘It was FINDING OUT my keys that Zhangsan did yesterday.’

Interestingly enough, in terms of obtaining a narrow EF, the AwF strategy is not applicable to anything within VP in the initial *shi* patterns, as is shown in (63a). This indicates that the phonetically null *v* head intervenes in the Agreement between anything in its c-commanding domain and *shi*, as Phase Impenetrability Condition (PIC, Chomsky 2000, 2001) prescribes. In order for the object to be EF-marked, it can undergo focus movement phasewise to the immediate right of *shi*, as shown in (63b).

- (63) a. #*Shi Zhangsan* [_{vP} *zuotian* [_{VP} *zhao-dao le [wo-de YAOSHI]*]_{EF}].
 SHI Zhangsan yesterday find-arrive PFV my key
 Int.: ‘It was my keys that Zhangsan found yesterday.’
- b. *Shi [wo-de yaoshi]*_{EF} *Zhangsan* [_{vP} ~~*wo-de yaoshi*~~ *zuotian* [_{VP} *zhao-dao le [wo-de yaoshi]*].
 SHI my key Zhangsan my key yesterday
 find-arrive PFV my key
 ‘It was my keys that Zhangsan found yesterday.’

As we know, in the pseudo-clause-medial *shi* patterns, *shi* can freely appear to the left of any constituent and EF-mark it. However, likewise, the caveat lies in that *shi* must remain outside of the VP, (64a). Since in this situation, the ‘Agree with movement’ strategy is at play as no prosodic marking is present, (64a) can be taken as topicalizing the subject and the vP-adjunct in the first place. The VP-focus marked by *shi* then undergoes string-vacuous movement to Spec-FocP, (64b). This movement is perfectly legitimate according to PIC.

- (64) a. VP focus
Zhangsan zuotian shi [_{VP} [_{VP} *zhao-dao le wo-de yaoshi*]_{EF}].
 Zhangsan yesterday SHI find-arrive PFV my key
 ‘It was finding out my keys that Zhangsan did yesterday.’
- b. [*Zhangsan*]_{TopP1/i} [*zuotian*]_{TopP2/j} [_{FaiP} *shi*⁰ [_{FocP} [_{VP} *zhao-dao le wo-de yaoshi*]_{EF/k} Foc⁰ [TP *t_i* [_{VP} *t_j* [_{VP} *t_k*]]]].

However, when EF-marking an object located within VP, *shi* cannot simply appear to the immediate left of the object, as in (65a). This is because it would necessitate topicalizing the verb independently of the VP, leaving its argument,

which is intended for focus fronting, stranded in the original position, as depicted in (65b). In contrast to Hebrew (Landau 2006)¹², Mandarin does not permit the topicalization of a bare verb, leading to the sentence's ultimate ungrammaticality.

- (65) a. **Zhangsan zuotian* [_{VP} [_{VP} *zhao-dao le shi* [_{wo-de yaoshi}]_{EF}]].
 Zhangsan yesterday find-arrive PFV SHI my key
 Int.: 'It was my keys that Zhangsan found yesterday.'
- b. *[[*Zhangsan*]_{TopP1/i} [*zuotian*]_{TopP2/j} [*zhao-dao le*]_{TopP3/k} [_{FaiP} *shi*⁰ [_{FocP} [_{wo-de yaoshi}]_{EF/l} [_{TP} *t_i* [_{VP} *t_j* [_{VP} *t_k* *t_l*]]]]]]].

So far, we have been looking at declaratives containing the focus particle *shi*. Now it is time to explore whether our analysis can be extended to wh-questions where *shi* can also appear. Mandarin wh-fronting questions have been argued to impose a D-linking construal (in the sense of Pesetsky 1987) as opposed to a standard wh-in-situ question that can be raised out of the blue. With special regard to the information structure of Mandarin wh-questions, Ren (2023) showed that the interpretation of the fronted wh-phrase is anchored to a discourse-given set of alternatives that the predicate potentially holds. She further put forth a fine-grained classification of the focus interpretations of this type of wh-questions. A bare wh-fronting question like (66a) requires a plain contrastive focus in the answer, while when *shi* precedes a fronted wh-phrase, as (66b) shows, the whole question requires an exhaustive focus to value the wh-phrase. This can be reflected by the infelicity of a partial answer like A1 in (66b).

- (66) Context: *Zhangsan* planned to buy a pen, a notebook, and a highlighter. He asked his friends *Lisi* and *Wangwu* to go shopping with him, and they agreed. When the day came, *Wangwu* did not make it, so *Zhangsan* went shopping with *Lisi*. When they got there, they bought a pen and a notebook, but did not find any highlighter. When they came back, *Wangwu* met *Lisi* and the

¹² I refer interested readers to Landau (2006) for a thorough analysis of the two varieties of VP-frontings in Hebrew that he referred to as 'phrasal-infinitive fronting ('PI-fronting' in short)' and 'bare-infinitive fronting ('BI-fronting' in short)' respectively, as is shown below.

- (i) [_{TopP} [_{VP} *hi* [_{V'} *liknot et hapraxim*]]]_i *Top*⁰ [_{TP} *hi kanta* *T*⁰ [_{VP} *hi-kanta-et-hapraxim*]].
 to-buy ACC the-flowers she bought
 'As for buying the flowers, she bought.'
- (ii) [_{TopP} *liknot* *Top*⁰ [_{TP} *hi kanta* *T*⁰ [_{VP} *hi-kanta et ha-praxim*]].
 to-buy she bought ACC the-flowers
 'As for buying, she bought the flowers.'

Landau (2006) claims that, in both varieties, the fronted verbs are infinitives as they are not inflectable at all; their lower copies, however, are fully inflected. Additionally, the two varieties mainly differ from each other in the presence (PI-fronting) or absence (BI-fronting) of the internal argument in the topic position.

following dialogue took place.

a. Bare wh-fronting question

Wangwu: [*Shenme-dongxi*]_i Zhangsan mai le t_i ?
 what-thing Zhangsan buy PFV

‘What (among the presupposed alternatives) did Zhangsan buy?’

Lisi: A1: *Ta mai le gangbi/bijiben.*
 3SG buy PFV pen/notebook

‘He bought a pen/He bought a notebook.’

A2: *Ta mai le gangbi he bijiben.*
 3SG buy PFV pen and notebook

‘He bought a pen and a notebook.’

b. Wh-fronting question with *shi*

Wangwu: *Shi [shenme-dongxi]_i Zhangsan mai le t_i ?*
 SHI what-thing Zhangsan buy PFV

‘What was it that Zhangsan bought?’

Lisi: A1: #*Ta mai le gangbi/bijiben.*
 3SG buy PFV pen/notebook

‘He bought a pen/He bought a notebook.’

A2: *Ta mai le gangbi he bijiben.*
 3SG buy PFV pen and notebook

‘He bought a pen and a notebook.’

Given that both the *shi*-marked focus in declarative focus constructions and that in wh-fronting questions bear an exhaustive construal, I argue that the functional category – FaiP – proposed for the exhaustive conventional implicature coerced in the former set of sentences also operates over the FocP involved in wh-fronting questions. The syntactic representation of (66b) can then be possibly schematized in (67).

(67) [_{FP} Force ... [_{FaiP} *shi*⁰_{[EXH]] [_{FocP} *shenme-dongxi*_i Foc⁰_{[D-LINKING, FOCUS]] ... [_{TP} *Zhangsan mai le t_i*]]]?]}}

I propose, in addition to the [FOCUS] feature, there is a [D-LINKING] feature on Foc in the left periphery of Mandarin wh-questions, as any Mandarin wh-phrase that has undergone fronting must be [+D-LINKING]. Then, they become available for the criterial selection of a higher Fai head activated by the presence of *shi*, which carries an [EXHAUSTIVE] feature. The application of FaiP in both Mandarin declaratives and interrogatives endorses the desideratum proposed by Roberts & Roussou (2003) and Roberts (2007) that we should postulate as few possible formal features as possible and maximize their uses.

Finally, this study agrees with Paul & Whitman (2008) and Pan & Xu (2022) in claiming that the sentence-final *de* in *shi...de* constructions is an assertion marker, heading the AssertionP. The pre-object *de* is an aspectual marker heading the AspP. Recall that VP-fronting in a focus construction containing a pre-object *de* is more acceptable than in a sentential-*de*-containing construction (see 22b-22c repeated here in 68a-68b). This can be immediately accounted for, considering the hierarchical positions of the two *des* shown in (69).

- (68) a. *Shi...de* construction with a pseudo-clause-medial *shi* and a pre-object *de*

??Zhangsan *shi* [zhao-dao de wo-de yaoshi]_{EF} zuotian t_i, bu *shi*
 Zhangsan SHI find-arrive DE my key yesterday NEG SHI
mai de kaoya.
 buy DE roasted-duck

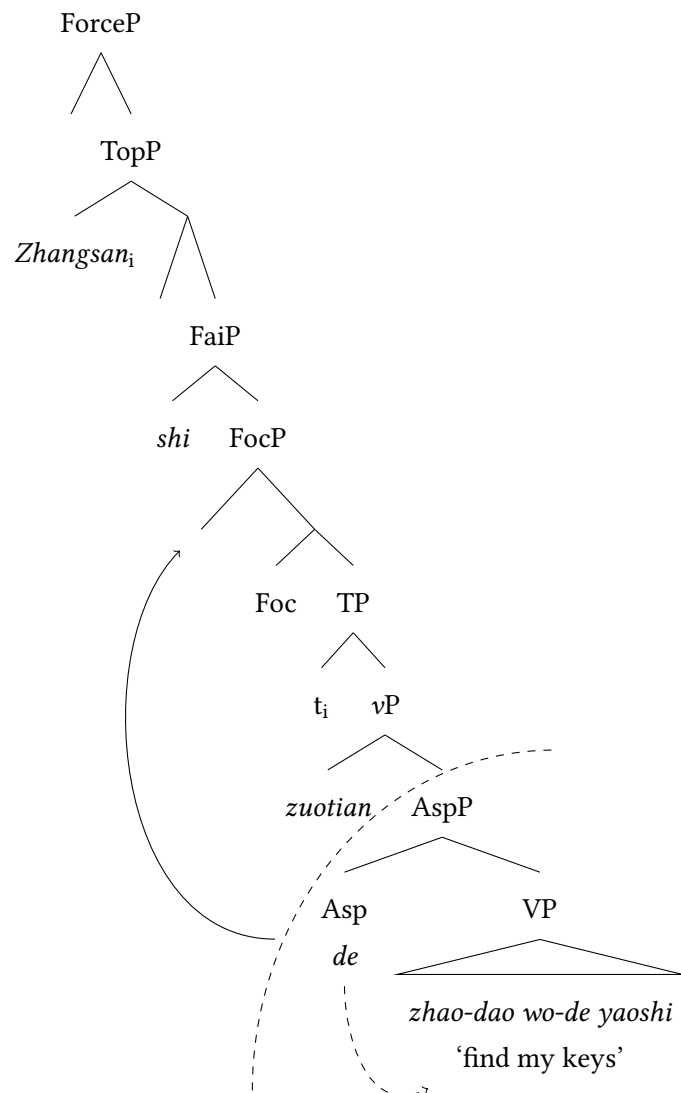
Int.: 'It was finding out my keys that Zhangsan did yesterday rather than buying a roasted duck.'

- b. *Shi...de* construction with a pseudo-clause-medial *shi* and a sentence-final *de*

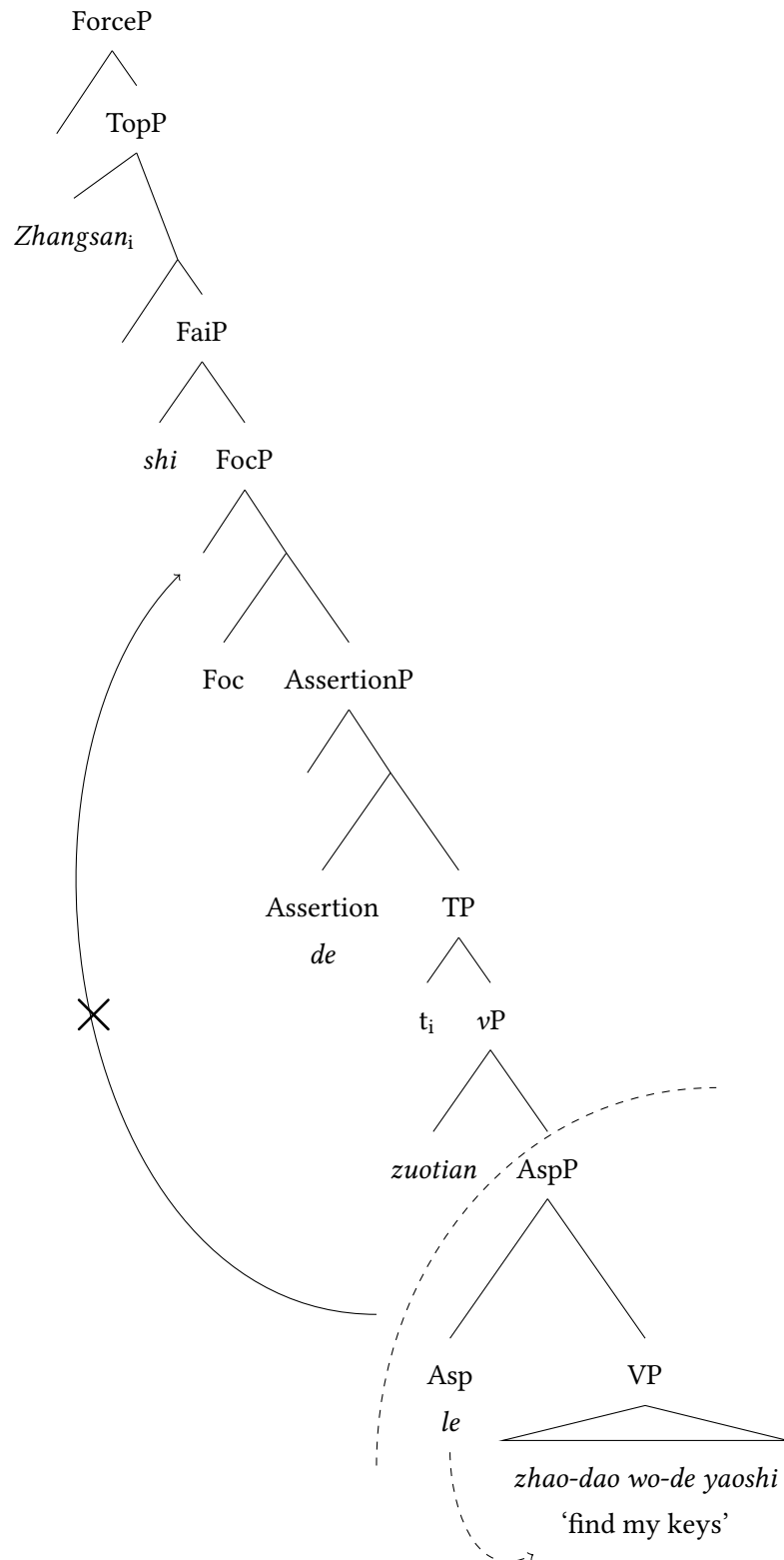
*Zhangsan *shi* [zhao-dao le wo-de yaoshi]_{EF} zuotian t_i de, bu
 Zhangsan SHI find-arrive PFV my key yesterday DE NEG
shi mai le kaoya de.
 SHI buy PFV roasted-duck DE

Int.: 'It was finding out my keys that Zhangsan did yesterday rather than buying a roasted duck.'

(69) a. Syntactic derivation for (68a)



b. Syntactic derivation for (68b)



The aspectual marker *de* in (69a) undergoes lowering first onto VP (Huang, Li & Li 2009) – an Affix-Hopping-like phonological operation. This renders a string: *zhaodao de wo-de yaoshi* ‘find my keys’, which further gets displaced to Spec-FocP, checking off the [FOCUS] and EPP features on Foc. However, as shown in (69b), since the Assertion head *de* only operates over a TP as a whole. It blocks the movement of any constituent out of TP (AspP in this case) to Spec-FocP. Therefore, (68b) is deemed completely unacceptable.

5 CONCLUSIONS

In this paper, I first described the positions that *shi* can surface in 6 Mandarin *shi*-containing focus constructions – a clause-initial position and a post-topic position. I have also established that these two major surface positions *shi* resides in are invariably compatible with two focus marking strategies: (i) *shi*-focus Adjacency: *shi* appears to the immediate left of the focus that it marks; (ii) AwF: *shi* associates with a prosodically prominent non-adjacent element. The application of the two strategies, however, does not come without any caveat. VP-internal elements in initial *shi* constructions are not compatible with AwF, hence they have to undergo fronting to the right-adjacent position of *shi* and get focus-marked through the former strategy. In contrast, pseudo-clause-medial *shi* constructions do not allow *shi* to occur within VP, thereby rejecting the Adjacency strategy and favoring AwF for marking a VP-internal element as a focus. In section 2, through looking into the results of the three exhaustivity tests – the entailment test, the negation test, and the coordination test, we have determined that *shi* is an exhaustive focus marker irrespective of the size of the focus or the way the focus is assigned. After evaluating the strengths and limitations of the three influential existing analyses of *shi*, this study proposes that *shi*, as a grammaticalized focus particle originating from the copula *shi*, heads the FaiP (in the sense of Bianchi et al. 2015). This is because the exhaustive identification of the focus enforced by *shi* is an uncancellable conventional implicature. The last section presents an analysis ascribing the alternation between the two focus-marking strategies to the optional EPP feature available in the feature matrix of the focus head selected by *shi*. The EPP feature is present by default, thereby rendering the unmarked interpretations of the six structures with either the whole IP or any particular phrase adjacent to *shi* ending up in Spec-FocP. This step of movement happens exclusively for checking the [FOCUS] feature. Exactly for the same reason, VP-internal constituents are displaced to the beginning of the clause adjacent to the clause-initial *shi*. Nevertheless, when the AwF option is in play, EPP is absent so that any prosodically prominent element, even for a non-XP element such as the verb, that is far apart from *shi* can bear the [FOCUS] feature through Agree (Chomsky 2000, 2001) while remaining in situ. Crucially, we have set a restriction on the application of the ‘Agreement without movement’ rule. That is, it is exclusively applicable to elements that are not linearly adjacent to *shi*. When EF-marking elements such as the subject or the verb that can sit in the immediate right of *shi*, they have to be marked as prosodically prominent to cancel the otherwise available focus reading on their extended maximal projections, namely an IP focus or a VP focus. With

respect to *des* in *shi...de* constructions, this study follows the previous literature in claiming that the sentence-final *de* is an assertion marker, and the pre-object *de* is an aspectual marker.

ABBREVIATIONS

BA	<i>Ba</i> construction	EXP	Experiential
CF	Contrastive Focus	SHI	<i>shi</i>
DE	<i>De</i>	SUB	Subordinator

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