

# Sluicing and Predicate Ellipsis in Chinese

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## Summary

This article focuses on sluicing-like constructions and those that have been subsumed under predicate ellipsis—the Aux(iliary)-construction (VP-ellipsis) and the *shi*-construction. Important facts and main analyses are evaluated in regard to their strengths and weaknesses, leaving some issues for further research. Regarding the sluicing-like construction, this article shows that neither the approach of base-generating a clause [*pro* (+ copula) + *wh*] nor the movement + deletion approach fully accommodates all the relevant facts. Nor is it adequate to adopt both derivations simultaneously, as it would wrongly allow sentences that are unacceptable in a number of cases. The second part of this article briefly compares the Aux-construction and the *shi*-construction. The two differ in the size of the part that is missing—in the former, a Verb Phrase (VP) licensed by an auxiliary, and in the latter, a Tense Phrase (TP) licensed by the verb *shi*. Neither one allows extraction from within the missing VP/TP, pointing to the advantage of a Logical Form (LF)–copying approach over a Phonological Form–deletion approach.

**Keywords:** sluicing, predicate ellipsis, VP-ellipsis, *shi*-construction, surface versus deep anaphora, LF-copying, PF-deletion, base-generation versus deletion of sluice, extraction from within null phrases

**Subjects:** Syntax

## 1. Introduction

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This article focuses on ellipsis cases commonly referred to as sluicing/sluicing-like constructions and predicate/VP-ellipsis. Due to the enormity of the relevant literature, the scope will be limited to important facts characterizing these constructions and representative approaches. As will be seen throughout the article, challenges remain to identify a single clear analysis that can accommodate all the facts for the constructions. Nonetheless, issues facing each of the options will be identified, which can serve as a springboard for further research.

This article will begin with the Chinese cases corresponding to sluicing and pseudo-sluicing in English in section 2. Representative analyses will be evaluated regarding the extent of their coverage of the relevant facts. Section 3 compares the cases of predicate ellipsis: the Aux(iliary)-construction and the *shi* ‘be’-construction. The role of the key word *shi* ‘be’ will also be briefly discussed.

## 2. Sluicing

“Sluicing,” illustrated by the English sentence (1a), typically refers to a construction containing a *wh*-phrase at the clause-peripheral position, derived by *wh*-movement as in *wh*-question formation, followed by deletion of the entire clause except the *wh*-phrase (termed “*wh*-remnant”) – movement + deletion (see Merchant, 2001 and many others). Chinese seems to have similar cases, illustrated by (1b–c).<sup>1</sup>

(1)

- a. John saw someone, but I don't know [who [~~John saw~~]].
- b. Zhangsan kandao-le mouren, danshi wo bu zhidao \*(shi) shei.  
Zhangsan saw-LE someone, but I not know be who  
'Zhangsan saw someone, but I don't know who.'
- c. Zhangsan kandao-le mouren, danshi wo bu zhidao  
Zhangsan saw-LE someone, but I not know  
(shi) shenme-ren.  
be what-person  
'Zhangsan saw someone, but I don't know who/what person.'

There have been debates on whether Chinese has the same sluicing construction as English. Chinese does not front *wh*-phrases to form *wh*-questions (*wh*-in situ language; see Adams & Tomioka, 2012; Li & Wei, 2014; Wang & Wu, 2006; Wei, 2004, 2009a, 2011, among many others). This section reviews the arguments for and against deriving the sluicing-like construction in Chinese in the same way as sluicing in English (movement + deletion). Many empirical generalizations point to the need to analyze the sluicing-like construction in Chinese differently from sluicing in English. In contrast to a movement + deletion approach to sluicing sentences in English, the Chinese cases can be better analyzed as base-generated [<sub>TP</sub> *pro* (+ copula) + *wh*], containing an empty pronoun in the subject position, a copular verb “be” that can be optional or obligatory depending on the type of *wh*-phrases that follows, and the *wh*-phrase. This base-generation approach does not fully capture all the facts either, however. The problem cannot be solved by adopting the movement + deletion derivation at the same time, as it would wrongly allow the unacceptable cases to be discussed.

### 2.1 Movement + Deletion Analyses

Even though Chinese does not move its *wh*-phrases to form *wh*-questions, it does have other movement operations that raise phrases to clause-peripheral positions, such as relativization, topicalization, and focalization. This has led some linguists to propose that Chinese has an

equivalent to sluicing in English in the sense that both are derived by movement of a phrase to the clause-peripheral position, followed by deletion of the clause except the moved phrase (remnant). This line of work can be represented by the focalization analysis as in Wang (2002) and Wang and Wu (2006), and by the reduced cleft analysis that accommodates the apparent sluicing construction mainly in another *wh*-in situ language, Japanese, such as Kizu (1997), Merchant (1998, 2001, 2004), Nishiyama (1995), Nishiyama et al. (1996), Fukaya and Hoji (1999), Hiraiwa and Ishihara (2002), and Fukaya (2003), among many others. These proposals will be briefly reviewed in sections 2.1.1 and 2.1.2.

### 2.1.1 Focus Movement Analysis

Wang (2002) and Wang and Wu (2006) proposed that a *wh*-phrase moves to a clause-peripheral focus position, followed by deletion of the rest of the sentence (a Tense Phrase [TP]), yielding a true sluicing structure, illustrated by (2a–b). The focus movement here corresponds to the *wh*-movement in English sluicing.

(2)

- a. Zhangsan kandao mouren, danshi wo bu zhidao  
 Zhangsan see someone but I not know
- \*(shi) shei [ta kandao e].  
 be who he saw
- ‘He saw someone; but I don’t know who.’
- b. Zhangsan jue ding yao xiuxue, danshi wo bu zhidao  
 Zhangsan decide want leave.school but I not know
- (shi) weishenme [Zhangsan jue ding yao xiuxue].  
 be why Zhangsan decide want leave.school
- ‘Zhangsan decided to leave school, but I don’t know why.’

Note that the copula *shi* ‘be’ must be present when the *wh*-remnant is *shenme* ‘what’ or *shei* ‘who’ as in (2a) but is optional with the other *wh*-phrases, such as *weishenme* ‘why’ as in (2b). Wang (2002) claimed that *shi* ‘be’ is inserted at the Phonological Form (PF) but does not explain why it is obligatory only with certain *wh*-words. To capture the obligatoriness of *shi*, Wang and Wu (2006) resorted to Case assignment. *Shi* is required to assign Case to *wh*-arguments such as *shei* ‘who’ and *shenme* ‘what.’ For *wh*-adjuncts or *wh*-arguments contained within prepositional phrases, the insertion of the copula is not required because they either do not need to be assigned Case (i.e., *wh*-adjunct) or can obtain Case from the preposition.

Unfortunately, this account fails to account for the optionality of *shi* preceding certain *wh*-arguments as in (1c). The *wh*-phrase *sheme-ren* ‘what person’ is an argument; *shi* supposedly is required to assign Case to the *wh*-argument. It is not clear why such a Case marker can be absent. It also raises the question of why *shi* appears when the *wh*-phrase is an adverb as in (2b). In addition, this approach requires preposing a *wh*-phrase to the clause-peripheral focus position. This move faces the challenge of impossible fronting operations in some cases. For instance, *xingqi-ji* ‘which day of the week’ in (3a) or *duoshao-qian* ‘how much’ in (3b) fronted from within the clause is not acceptable (see Li & Wei, 2014; Wei, 2004, 2011).<sup>2</sup>

(3)

- a. biye luxing kuai dao le, danshi wo bu zhidao (*shi*) xingqi-ji  
graduation trip soon reach LE but I not know be what-day

(\*biye luxing kuai dao le).  
graduation trip soon reach LE

‘(lit.) The graduation trip is almost here, but I don’t know which day of the week the graduation is almost here.’

- b. cai yue lai yue gui le, danshi wo bu  
vegetable more come more expensive LE but I not

qingchu (*shi*) duoshao qian (\*cai yue lai yue gui le).  
clear be how.much money vegetable more come more expensive LE

‘(lit.) Vegetable is getting more and more expensive, but I am not clear by how much money vegetable is getting more and more expensive.’

Another concern involves P(reposition)-stranding. Chinese does not allow P-stranding (e.g., Huang, 1982)—the object of a P cannot be moved out of the PP, stranding the P. However, this language allows sluicing-like sentences such as (4), violating the P-stranding generalization in relation to sluicing observed by Merchant (2001): a language allows the object of a P to be the sluice (the *wh*-remnant in sluicing structures) iff it also allows P-stranding under *wh*-movement.<sup>3</sup> This casts doubt on analyzing Chinese sluicing-like cases by movement.

(4)

Zhangsan	gang	[gen	yi-ge	ren]	likai,	dan
Zhangsan	just	with	one-CL	person	leave	but
wo	bu	zhidao	shi	shei/	(shi) gen	shei.
I	not	know	be	who	be with	who

‘(lit.) Zhangsan just left with someone, but I don’t know (with) who.’

A further argument against treating the Chinese sluicing-like construction as the exact counterpart of English sluicing can be based on the generalization MaxElide proposed by Merchant (2008), which states that, for ellipsis of an XP containing an A’-trace, the XP must not be properly contained in a YP that is a possible target for deletion. For instance, (5a) has an embedded TP in the second conjunct [*she invited t*], containing a *wh*-trace and properly contained in the matrix VP [*know who she invited t*]. It is a possible target for deletion in (5b). Accordingly, MaxElide disallows deleting the TP in (5a).

(5)

- a. ??Ben knows who she invited, but Charlie doesn’t know who ~~she invited t~~.
- b. Ben knows who she invited, but Charlie doesn’t ~~know who she invited t~~.

Applying this to corresponding cases in Chinese, (6a) should not be acceptable, unlike its English counterpart, because the TP [*ta yao-le t*], which contains an A’-trace, is properly contained in the possible target for deletion [*shei [ta yao-le t]*] in (6b). The acceptability of (6a) indicates that the Chinese sluicing-like construction differs from its English counterpart.

(6)

- a. Zhangsan zhidao shei ta yao-le, Lisi ye zhidao  
Zhangsan know who he invite-LE Lisi also know

shi shei<sub>i</sub> [~~ta yao-le t<sub>i</sub>~~]  
be who he invite-LE

‘Zhangsan knows who he invited, and Lisi also knows who.’

- b. Zhangsan zhidao shei ta yao-le, Lisi ye zhidao [(shi) shei<sub>i</sub> [~~ta yao-le t<sub>i</sub>~~]]  
Zhangsan know who he invite-LE Lisi also know be who he invite-LE  
‘Zhangsan knows who he invited, and Lisi does, too.’

In brief, analyzing the Chinese sluicing-like construction as focalization is challenged by the unexpected movement and deletion (im)possibilities.

### 2.1.2 Cleft Analysis

Another notable approach to sluicing-like constructions in *wh*-in-situ languages is the reduced cleft analysis, such as in Kizu (1997), Merchant (1998, 2001, 2004), Nishiyama (1995), Nishiyama et al. (1996), Fukaya and Hoji (1999), Hiraiwa and Ishihara (2002), and Fukaya (2003). A cleft sentence in English has the form [*It is XP that . . .*]; a part of a sentence *XP* (pivot of a cleft sentence) is separated from the rest of the sentence. Merchant (1998, 2001, 2004) suggested that pseudo-sluicing in English, marked by the presence of a subject *it* and the copular verb *be* following the fronted *wh*-phrase (in contrast to simply a *wh*-phrase for sluicing), is most likely a reduced form of a cleft whose pivot is a fronted *wh*-phrase, as in (7).

(7)

John saw someone, but I don’t know [who it is [~~John saw~~]].

Nishiyama (1995) and Nishiyama et al. (1996) proposed such a reduced cleft structure for the apparent sluicing construction in Japanese—[*pro* (+ copula) + *wh*-remnant] (copula being optional in this language). The subject *pro* is interpreted as referring to a proposition in the preceding discourse. The *wh*-remnant is raised from within the deleted clause (see (7)).

Problems arise when the Chinese sluicing-like construction is analyzed as a reduced cleft. First, (reduced) clefts require the occurrence of the copula *shi* in Chinese, which contrasts with the optionality of the copula with all the *wh*-phrases other than “who” and “what,” such as *Shi*

*shenme ren ta yao le* ‘Who was it that he invited.’ Secondly, recall that there are cases like (3) and (4) disallowing the fronting of *wh*-phrases; yet, the sluicing-like sentences are acceptable. In the same way, the unacceptability of sentences such as (3b) argues against deriving the Chinese-slucing-like construction via focalization—it cannot be derived by clefting, either. Movement of the *wh*-remnant is not possible in this case.<sup>4</sup> In short, the Chinese sluicing-like construction is not a (reduced) cleft structure.

## 2.2 Arguments for a Base-Generated Simple Clause Sluice Analysis

This section presents arguments for an approach according to which the Chinese sluicing-like construction is neither like the sluicing in English nor a reduced-cleft structure as in Japanese. It is a base-generated simple clause (conveniently referred to as “simple clause sluicing”), consisting of an empty pronoun (*pro*) as subject, a copular verb “be,” and a *wh*-phrase, all base-generated in their positions. Such a proposal has been made by Adams (2004), Adams and Tomioka (2012), Wei (2004, 2009a, 2011), and Li and Wei (2014), among others. Their arguments are briefly summarized here.

Wei (2004, 2011) and Adams and Tomioka (2012) observed that a non-bare *wh*-phrase in Chinese (*shei* ‘who’ and *shenme* ‘what’) can function as a predicate and thus may occur without the copular verb *shi* ‘be.’<sup>5</sup> When *shi* optionally appears in such cases, it serves as a focus marker, as in (8a). In contrast, a bare *wh* ‘who’ ‘what’ cannot function as a predicate, and the copular verb *shi* is required (8b).

(8)

- a. Zhangsan jueding yao xiuxue, dan wo bu zhidao  
Zhangsan decide want leave.school but I not know

(shi) [wei[shenme]]  
be for.what

‘Zhangsan decided to leave the school, but I don’t know why.’

- b. Ta kandao yi-ge ren/ yi-ge dongxi, dan wo bu zhidao  
he saw one-CL person one-CL thing but I not know

\*(shi) shei/ \*(shi) shenme.  
be who be what

‘He saw someone/something; but I don’t know who/what.’



As the sluice clause requires the *wh*-phrase to be a predicate or the presence of *shi* to make a predicate, a more appropriate name for the Chinese sluicing-like construction can be “(base-generated) simple clause sluice,” taking the form [*pro* (+*shi*) + *wh*]. The subject *pro* refers to an entity or proposition in the preceding discourse (cf. Hankamer & Sag, 1976; Wei, 2004, 2011, among others).<sup>6</sup>

Chinese simple clause sluicing looks like the so-called pseudo-sluicing in English (cf. Wei, 2011). The latter contrasts with English sluicing in having a pronoun as subject and taking a full clause form overtly:

(9)

- a. John will buy something; but I don't know what.                   - sluicing
- b. John will buy something; but I don't know what it is.           - pseudo-sluicing

English pseudo-sluicing and Chinese simple clause sluicing share some properties. One similarity is the acceptability of constructions that do not have a modifier “correlate” in the antecedent clause when it is required by the sluice, in contrast to sluicing in English:

(10)

John bought a car, but I don't know how big \*(it is).

(11)

Zhangsan mai-le yi-liang che, dan wo bu zhidao (shi) duo-da.  
 Zhangsan buy-LE one-CL car but I not know be how-big  
 ‘Zhangsan bought a car, but I don't know how big \*(it is).’

Another similarity is the possibility of an aggressively non-D(iscourse)-linked expression like *what on earth* in the English pseudo-sluicing construction and *daodi* ‘what on earth’ in the Chinese simple clause sluice. They contrast with the unacceptability of the corresponding English sluicing cases.



(12)

John saw someone, but I don't know who on earth \*(it was).

(13)

Zhangsan kajan mouren, dan wo bu zhidao *daodi* shi shei.  
 Zhangsan see someone but I not know on.earth be who  
 'Zhangsan saw someone, but I don't know who on earth \*(it was).'

These similarities between the Chinese sluicing-like construction and English pseudo-sluicing support the claim that the Chinese sluicing-like construction is not the counterpart of the sluicing construction in English.

Further support can be provided by the lack of "sprouting" in Chinese (Chung et al., 1995). Sprouting refers to cases like the one in (14), whose verb in the antecedent clause does not have an overt object as correlate to the *wh*-remnant.

(14)

I know he ate, but I don't know what<sub>i</sub> (he ate *x<sub>i</sub>*).

According to Chung et al. (1995, section 4), when the overt object of verbs such as *eat* and *read* is not required, the object licensed by the argument structure of the verb in an antecedent clause but not overtly expressed can be sprouted at the Logical Form (LF), because a TP from the antecedent clause ("he ate" in (14)) can be "recycled." An object variable licensed by the argument structure of the lexical verb can be added to the structure at LF, to be coindexed or bound by the *wh*-phrase at the clause-peripheral position. Thus, sprouting shares with sluicing the property of having a *wh*-phrase in the clause peripheral position related to a variable within the TP.

However, sprouting is not possible in Chinese, even when the copula *shi* is present (Adams & Tomioka, 2012; Wei, 2011):

(15)

- a. wo zhidao ta chi le; \*dan wo bu zhidao shi shenme.  
I know he eat LE but I not know be what  
'I know he ate, but I don't know what.'
- b. wo zhidao ta du le; \*dan wo bu zhidao shi shenme.  
I know he read LE but I not know be what  
'I know he read, but I don't know what.'

English pseudo-sluicing disallows sprouting as well (Merchant, 2001).

(16)

He said they had already eaten; but I don't know what \*(it is). (Merchant 2001: 121, (32b))

Li and Wei (2017) argued that the acceptability of adjuncts like the one in (17) is not a true case of sprouting in Chinese.

(17)

Zhangsan jueding yao xiuxue, dan wo bu zhidao  
Zhangsan decide want leave.school but I not know

(shi) weishenme  
be why

'Zhangsan decided to leave the school, but I don't know why.'

Cases like this can be accommodated by the base-generated simple clause sluice analysis—the second part in (17) has [*pro* (*shi*) *weishenme*] as complement of the verb “know,” with the subject *pro* interpreted with the proposition/event expressed in the preceding discourse. Namely, the *pro* can have the proposition/event or entity in the preceding discourse as antecedent, via the notion of discourse topic. A proposition/event or entity can be mentioned in the discourse and become a topic for what is to follow. Ambiguity can arise in some cases. For instance, the *pro* in example (18) can be identified by an available discourse topic, which is either the event/proposition expressed by the matrix clause or the embedded clause, deriving the matrix or embedded reading.

(18)

[Lisi bu xiangxin [Zhangsan xiuxue le]], dan wo bu  
Lisi not believe Zhangsan leave.school LE but I not

zhidao [*pro* (shi) weishenme]. (Wei 2004)  
know be why

- a. 'Lisi does not believe that Zhangsan has left school, but I don't know why Zhangsan has left school.' (Embedded reading)
- b. 'Lisi does not believe that Zhangsan has left school, but I don't know why Lisi does not believe that Zhangsan has left school.' (Matrix reading)

This analysis also accommodates the unacceptability of an adjunct *wh* to be related to a clause within an island:

(19)

ta [yinwei bu yuanyi lai] bei henduo ren piping,  
he because not willing come BEI many people criticize

dan wo bu zhidao [*pro* (shi) weishenme].  
but I not know be why

- a. 'Because he is not willing to come, he is criticized by many people, but I don't know why he is criticized by many people because he is not willing to come.'
- b. \*'Because he is not willing to come, he is criticized by many people, but I don't know why he is not willing to come.'

The adjunct *why* can be the reason for the event expressed by the entire preceding sentence "he is criticized by many people because he is not willing to come" (19a), but not the reason for the event expressed by the clause in the adjunct island "he is not willing to come" (19b). The identification of the subject *pro* in the sluice-like structure containing the *wh*-adjunct displays island effects, which topicalization is sensitive to (for a *wh*-argument with an indefinite correlate inside an island, see Merchant (2001) on how island effects are avoided).

In brief, a topic that emerged from the preceding discourse provides interpretation for the subject *pro* in the following sluice. Examples (18–19) show that the matrix clause and the clause embedded under the matrix verb can become a discourse topic, but not the clause within an

island. When there is not an argument syntactically present in the preceding clause, such as in the case of sprouting constructions, a discourse topic cannot be established out of an absent argument, and no antecedent is available to the subject *pro* in the following clause. To complete the paradigm, we expect that sprouting is not possible from within an island (such as an adjunct island), either. This is true.

(20)

Lisi [yinwei wo mei chi\_\_\_] hen shengqi, \*keshi wo bu zhidao  
 Lisi because I not eat very angry but I not know  
 shi shenme.  
 be what

‘(Lit.) Lisi was angry because I did not eat (something), but I don’t know what.’

Before ending this section, we would like to point out that the apparent counterexample in (21) does not challenge the claim of Li and Wei (2017) about the nonexistence of sprouting in Chinese.

(21)

wo zhidao ta yijing chi-le \_\_\_, zhishi bu zhidao shi  
 I know he already eat-LE just not know be  
 na yi zhong yao.  
 which one kind medicine

‘I know he already ate, but I just do not know which kind of medicine.’

This sentence does not have an overt object in the first part, making it look like a good case of sprouting, in contrast to (15a–b). Nonetheless, this is not a true instance of sprouting. The apparent “sprouted” “which”-phrase in (21) “which kind of medicine” is a question about the identity of the type of medicine he already took. In such a case, there is a null topic in the discourse referring to his medicine. The “which” phrase is D-linked. The object in the antecedent clause is not syntactically empty; it is a variable bound by a null topic. This sentence should be contrasted with its minimally contrasting sentence replacing “which kind of medicine” by the non-D-linked “what,” which is unacceptable.

## 2.3 Challenges to the Simple Clause Sluice Analysis

Sections 2.1 and 2.2 presented evidence supporting the analysis of the Chinese sluicing-like construction as a base-generated simple clause sluice of the form [*pro* (+ copula) + *wh*]. Nonetheless, there have been questions raised against such an analysis. We briefly discuss the issues here and show how they can or cannot be real challenges.

The first issue concerns the use of the copula *shi*. The simple clause sluice analysis [*pro* (+ copula) + *wh*] highlights the important role of the copula—the copula is required only when the *wh*-phrase cannot be a predicate. However, it has been called into question whether the presence versus absence of *shi* indeed is determined by the predicate status of the *wh*-phrase. Wei (2004), Adams (2004), and Li and Wei (2017) raised the question of why the copula is obligatory even with predicative *wh*-phrases when the subject *pro* is replaced with the demonstrative *na* ‘that.’

(22)

- a.    Zhangsan kandao    yi-ge    ren,    danshi    wo    bu    zhidao  
       Zhangsan saw        one-CL   person   but       I       not   know  
  
       *na*    \*(*shi*)        *shei*/ \*(*shi*)        *shenme*-ren. (Wei 2004; Adams 2004)  
       that be            who/ be            what-person

‘Zhangsan saw someone, but I don’t know who that is.’

- b.    Zhangsan mai-le    yixie-dongxi,    danshi    wo    bu    zhidao  
       Zhangsan buy-LE   some-thing   but       I       not   know  
  
       *na*    \*(*shi*)        *shenme*/ \*(*shi*)        *shenme*-dongxi.  
       that be            what/    be            what-thing

‘Zhangsan bought something, but I don’t know what/what thing that is.’

The obligatory use of *shi* when the subject is a demonstrative raises questions on whether the use of *shi* can be tied to the predicate status of the *wh*-phrase.

In addition, the verb in the matrix clause seems to be a factor as well. When the matrix verb *zhidao* ‘know’ embedding the sluice is replaced by some others such as *renwei* ‘think,’ *caidao* ‘guess (correctly),’ *xiangxin* ‘believe,’ *wen* ‘ask,’ the copula seems to be required, no matter what type of *wh*-phrases follows.

(23)

- a. ta zai jiao yi-ge ren tiaowu; ni renwei \*(shi)  
he at teach one-CL person dance you think be

shei/ shenme-ren/ shenme-difang.  
who/ what-person/ what-place

‘(lit.) He was teaching a person to dance; who/what/where do you think it was?’

- b. ta zai jiao yi-ge ren tiaowu, wo mei wen \*(shi)  
he at teach one-CL person dance I not ask be

shei/ shenme-ren/ shenme-difang.  
who/ what-person/ what-place

‘He was teaching a person to dance; I did not ask who/what person/where it was.’

Accordingly, it is questionable that the distribution of the copula *shi* ‘be’ can be tied to the predicate status of *wh*-phrases, which raises concerns about whether support for the simple clause sluice analysis is weakened. Some tentative answers to these questions are provided.

First, consider the obligatoriness of *shi* ‘be’ when the subject is the demonstrative *na* ‘that.’ It is possible that the presence of *shi* is related to the properties of *na* ‘that’ in this construction, irrelevant to the predicate status of *wh*-words. Note that there are differences in interpretation and acceptability between the cases with a subject *pro* versus a demonstrative subject *na*, which points to the need of analyzing these two constructions differently (see Adams & Tomioka, 2012; Wei, 2009a). For instance, the case with a subject *pro* (24a) allows both strict and sloppy readings, whereas the one with *na* ‘that’ (24b) has only the strict reading. The contrast suggests that *na* ‘that’ cannot simply be an overt counterpart of the covert subject *pro*.

(24)

- a. [Zhangsan<sub>i</sub> bu zhidao [ta<sub>i</sub> weishenme bei ma]], dan  
Zhangsan not know self/he why BEI scold but

Lisi<sub>j</sub> zhidao [*pro* (shi) weishenme].  
Lisi know shi why.

‘Zhangsan<sub>i</sub> didn’t know why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why Zhangsan<sub>i</sub> was scolded.’ (Strict reading)

‘Zhangsan<sub>i</sub> didn’t know why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why he<sub>i</sub> was scolded.’ (Sloppy reading)

- b. [Zhangsan<sub>i</sub> bu zhidao [ta<sub>i</sub> weishenme bei ma]<sub>k</sub>], dan  
Zhangsan not know self/he why BEI scold but

Lisi<sub>j</sub> zhidao [na<sub>k</sub> \*(shi) weishenme].  
Lisi know that be why

‘Zhangsan<sub>i</sub> didn’t know why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why Zhangsan<sub>i</sub> was scolded.’ (Strict reading)

‘\*Zhangsan<sub>i</sub> didn’t know why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why he<sub>j</sub> (himself<sub>j</sub>) was scolded.’ (\*Sloppy reading)

*Na* has multiple functions, including serving as a subject by itself. However, when it does, the co-occurring verb generally is *shi*. Other options are not acceptable: \**na dao/po le* ‘that fell/broke.’ These peculiar facts about *na* suggest that the obligatoriness of *shi* ‘be’ after *na* ‘that’ as in (25) need not be related to the predication status of the following *wh*-words.

(25)

- a. ..., na \*(shi) shei/shenme.  
that be who/what  
b. ..., na \*(shi) weishenme/shenme-difang  
that be why/what-place

There is further evidence cross-linguistically helping to support the separation of the covert *pro* and the overt demonstrative. Nishiyama et al. (1996) and Kim (1997) noted that for some speakers, (26), containing an expletive *it* and a copula, is ungrammatical. Nishiyama et al. further



pointed out that when a demonstrative *that* replaces *it* (27), the result is possible for all speakers. Such a contrast shows that the demonstrative *that* cannot be the counterpart of an expletive *it* in English.

(26)

John left, but I don't know why/when/how (\*it is).

(27)

John left, but I don't know why (that is).

In regard to the issue of why a matrix verb can affect the use of *shi* as in (23), we would like to point out that when the simple sluice clause is not embedded under a matrix verb, that is, taking away the factor of matrix verb types, the same contrast is found between bare *wh*-words (*shei*, *shenme*) and the other *wh*-phrases, illustrated in (28–30).

(28)

A: tingshuo Zhangsan xihuan hao dongxi.  
 hear Zhangsan like good thing  
 'I heard that Zhangsan is fond of good stuffs.'

B: \*(shi) shenme (ne)?  
 be what Q  
 'What is it?'

(29)

A: tingshuo Zhangsan da-le ren.  
hear Zhangsan hit-LE someone  
'I heard that Zhangsan hit someone.'

B: \*(shi) shei (ne)?  
be who Q  
'Who is it?'

C: (shi) shenme-ren (ne)?  
be what-person Q  
'What person is it?'

(30)

A: haoxiang you ren xihuan Zhangsan.  
seem existperson like Zhangsan  
'It seems that someone likes Zhangsan.'

B: zhende? \*(shi) shei?  
really be who  
'Really? Who is it?'

C: zhende? (shi) shenme-ren?  
really be what-person  
'Really? What person is it?'

The behavior of *shi* is complex. In addition, judgments on the requirements of *shi* are not consistent among speakers.<sup>7</sup> We leave the factor of matrix verbs for further research.

Two other points that seemingly support the movement + deletion sluicing analysis and challenge the base-generated simple sluice clause analysis have been raised and dismissed in Adams and Tomioka (2012)—(a) the availability of sloppy readings for adjunct *wh*-phrases in the sluice clause, such as (31) (their (38b) on p. 235, citing Wei, 2004 and Wang & Wu, 2006), and (b) the acceptability of apparent multiple sluicing, illustrated by (33) (their (44b) on p. 237). These two points have been discussed at length and refuted by Adams and Tomioka. Briefly, for (a), sloppy readings actually are not available to all *wh*-phrases. In contrast to adjunct *wh*-phrases (31), argument *wh*-phrases do not allow sloppy readings as in (32) (their (37a) on p. 234). These are expressed by the (im)possibility of the index *j* for the pronoun in the second part. (The strict

reading is possible in both cases: the index of the pronoun in the second part can be the same *i* as the one for the pronoun in the first part.) For (b), they argued that cases like (33) are not true cases of sluicing; rather, they are coordinate clauses with empty subjects. Readers are referred to Adams and Tomioka's work for the details on how these two points are not problematic for the base-generated simple sluice clause analysis.

Adjunct *wh* allowing sloppy reading:

(31)

Dawu<sub>i</sub> zhidao ta<sub>i</sub> weishenme bei ma, Aqiu<sub>j</sub> ye zhidao  
Dawu know he why BEI scold Aqiu also know

(shi) weishenme.  
be why

'Dawu<sub>i</sub> knows why he<sub>i</sub> was scolded, and Aqiu<sub>j</sub> also knows why (he<sub>i/j</sub> was scolded).'

Argument *wh* disallowing sloppy reading:

(32)

Yuehan<sub>i</sub> xiang zhidao ta<sub>i</sub> yinggai mai na yiben xiaoshuo,  
John want know he should buy which one-CL novel

Bier<sub>j</sub> xiang zhidao (shi) na yiben zidian.  
Bill want know be which one-CL dictionary

'John<sub>i</sub> wondered which novel he<sub>i</sub> should buy; Bill<sub>j</sub> wondered which dictionary (he<sub>i/\*j</sub> should buy).'

Apparent multiple sluicing—coordination of clauses:

(33)

laoshi      chufa-le      mouren, wo      xiang      zhidao \*(shi)      shei  
teacher      punish-LE      someone I      want      know      be      who

(shi) weishenme.  
be      why

‘Teacher punished someone, and I wonder who why.’

Wei (2009a) discussed two other issues that seem to challenge the base-generated simple clause sluice analysis—a structural condition and a lexical identity requirement. For the first one, Wei cited the observation by Ross (1967) and Takahashi (1994) that for an elided expression to obtain the sloppy reading in English and Japanese, a pronoun must be c-commanded by its antecedent. This constraint also applies to sluicing-like constructions in Chinese, illustrated here.

(34)

a.      Zhangsan<sub>i</sub>      bu      zhidao [      ta<sub>i</sub>      *weishenme* bei      ma],  
Zhangsan      not      know      he      why      BEI      scold

dan      Lisi<sub>j</sub>      zhidao      (shi)      *weishenme*.  
but      Lisi      know      be      why

‘Zhangsan<sub>i</sub> didn’t know why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why he<sub>i/j</sub> was scolded.’ (strict/sloppy)

b.      [Zhangsan<sub>i</sub>-de      muqin]      zhidao [[      ta<sub>i</sub>      *weishenme* bei      ma]],  
Zhangsan-DE      mother      know      he      why      BEI      scold

dan [Lisi<sub>j</sub>-de      muqin] bu      zhidao      (shi) *weishenme*.  
but      Lisi-DE      mother not      know      be      why

‘Zhangsan<sub>i</sub>’s mother knows why he<sub>i</sub> was scolded, but Lisi<sub>j</sub>’s mother does not know why he<sub>i/\*j</sub> was scolded.’ (strict/\*sloppy)

This pair of examples shows that the pronoun *ta* ‘he’ must be c-commanded by its antecedent *Zhangsan* in order to obtain the sloppy interpretation. The c-command requirement is not met in (34b) because the possessor noun phrase is contained in the subject, unable to bind a pronoun in

the embedded clause; the sloppy reading (index *j*) is unavailable. In a movement + deletion analysis, the *c*-command requirement applies straightforwardly because the entire structure and the lexical materials are available [. . . know [(be) why [<sub>*i/j*</sub> he<sub>*i/j*</sub> was scolded]]]. Wei was concerned about how the *c*-command requirement is captured in the base-generated simple sluice clause analysis adopting the structure [*pro* (+ copula) + *wh*]. That is, when the second part of (34a) is [Lisi knows [*pro* (be) why]] and [Lisi's mother not know [*pro* (be) why]] for (34b), how can the interpretive difference between them be captured? A possible solution lies in understanding what the antecedent of the *pro* is. The *ta* in the antecedent clause in (34a) is bound by *Zhangsan* and depends on *Zhangsan* for interpretation. It is a dependent term, which must have the same referential index as its *c*-commanding antecedent (see, e.g., Fiengo & May, 1994 on the distinction between dependent and independent terms). The *pro* takes the proposition [he was scolded] in the preceding sentence as its antecedent. In (34a), the antecedent proposition for the subject *pro* contains a dependent pronoun. The dependent can be bound by the matrix subject of the sluice clause at LF. In contrast, the pronoun in (34b) is not a dependent pronoun in the antecedent clause because there is no *c*-commanding antecedent. Therefore, no dependent pronouns are available when the subject *pro* is interpreted according to its antecedent. The *c*-command requirement on the availability of sloppy readings depends on the presence of a dependent term in the antecedent for the subject *pro* in the sluice clause.

The second point noted by Wei (2009a) is that if the correlate in the antecedent clause and the remnant *wh*-phrase in the sluice clause are identical *wh*-phrases, sloppy readings are possible, regardless of the argument-adjunct distinction as seen in (31–32).

(35)

Zhangsan<sub>*i*</sub>      zhidao [ *shei* zai      piping      ta<sub>*i*</sub> ], dan Lisi<sub>*j*</sub> bu zhidao  
Zhangsan      know      who PROG      criticize      him      but      Lisi not know  
  
shi *shei*.  
be who

‘Zhangsan<sub>*i*</sub> knows who is criticizing him<sub>*i*</sub>, but Lisi<sub>*j*</sub> doesn't know who (is criticizing him<sub>*i/j*</sub>).’ (strict/sloppy)

The sloppy reading in the adjunct *wh*-case (31) disappears if the antecedent clause does not contain a *wh*-phrase identical to the *wh*-remnant morphologically, illustrated by (36) with a non-identical covert antecedent and (37), a non-identical overt antecedent.

(36)

Zhangsan<sub>i</sub> bu zhidao [ ta<sub>i</sub> bei ma], Lisi<sub>j</sub> zhidao (shi) *weishenme*.  
 Zhangsan not know he BEI scold Lisi know be why  
 ‘Zhangsan<sub>i</sub> didn’t know that he<sub>i</sub> was scolded, Lisi<sub>j</sub> knows why Zhangsan<sub>i</sub> was scolded.’ (Embedded strict reading)  
 ‘Zhangsan<sub>i</sub> didn’t know that he<sub>i</sub> was scolded, but Lisi<sub>j</sub> knows why Zhangsan<sub>i</sub> does not know that he<sub>i</sub> was scolded.’ (Matrix strict reading)

(37)

Zhangsan<sub>i</sub> zhidao [ta<sub>i</sub> *weishenme* bei ma], dan Lisi<sub>j</sub> bu  
 Zhangsan know he why BEI scold but Lisi not  
  
 zhidao (shi) (*wei-le-)-shenme-liyou*.  
 know be for-LE-what-reason  
  
 ‘Zhangsan<sub>i</sub> knows why he<sub>i</sub> was scolded, but Lisi<sub>j</sub> doesn’t know for what reason he<sub>i/\*j</sub> was scolded.’ (strict reading only)

A morphological identity condition can be easily accommodated by a PF-deletion approach because lexical materials are present syntactically (and deleted at PF), but it is not as straightforward for the base-generated *pro* analysis.<sup>8</sup>

## 2.4 Summary on the Sluicing-Like Construction

Sections 2.1–2.3 discussed possible analyses for the sluicing-like construction in Chinese. An important point made is that movement + deletion analyses built on focus or cleft movement are not satisfactory (section 2.1). In contrast, the base-generated analysis with a *pro* in the subject position of the sluice clause is needed because there are acceptable sluicing-like cases that do not allow fronting of the remnant *wh*-phrase. The base-generation analysis also captures the fact that Chinese does not have a counterpart to the English sprouting construction, that a strongly non-D linked “*wh* on earth” is possible in the sluice, and that the interpretation of the subject *pro* in the sluice clause is sensitive to locality conditions (section 2.2). Most potential challenges are not real problems except probably the morphological identity condition described at the end of section 2.3. Logically, there is another analytical option. As Chinese sluicing-like construction allows more possibilities than sluicing in English such as the properties demonstrated by (8), (10–13), one might entertain the possibility that Chinese allows both derivation by movement + deletion (sluicing) and base-generation of a sluicing-like simple clause [*pro* (+ copula) + *wh*]. However, the availability of both derivations simultaneously would make acceptable all the

unacceptable cases discussed so far, and the noted unacceptable readings should be possible. Nonetheless, the base-generation analysis does not quite capture all the relevant properties either, such as the optional or required use of *shi* and the morphological identity condition to obtain sloppy readings. We hope that this discussion will generate more interest in and provide directions for further investigation into the sluicing-like construction in Chinese and other languages.

### 3. Predicate/VP-Ellipsis Structures

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Another major topic of ellipsis widely discussed in the literature is the predicate/VP ellipsis structure (see, for instance, Goldberg, 2005; Huang, 1991; Li, 2002; Otani & Whitman, 1991; Pan, 2019; Wu, 2016; Ye, 2020). Li and Wei (2014) described three relevant constructions: (a) postverbal objects missing as disguised VP-ellipsis; (b) the Aux-construction—an auxiliary licensing its complement VP to be missing; and (c) the *shi*-construction—*shi* ‘be’ preceded by a subject with the rest of the sentence missing. As the first construction has been discussed in the nominal ellipsis article, this section will focus on the major properties distinguishing the second and third construction.

#### 3.1 Differences Between the Aux-Construction and the Shi-Construction

The Aux-construction and the *shi*-construction differ in a number of major properties relevant to the study of VP-ellipsis.

##### 3.1.1 Pragmatic Antecedent

The Aux-construction as in (38a) does not need a linguistic antecedent. Its antecedent can be obtained from the context—a pragmatic antecedent, like deep anaphora (cf. the distinction between deep and surface anaphora in Chao, 1987; Hankamer & Sag, 1976). In contrast, the *shi*-construction cannot take a pragmatic antecedent (38b). A linguistic antecedent is always required (surface anaphora; cf. Li, 2002, 2007; Wei, 2010), as in (38c).



(38)

- a. [When Zhangsan takes a walk with his friends, he sees Lisi playing basketball. He turns to his friends and says:]

Zhangsan: wo ye hui [e].  
I also can  
'So can I (play basketball).'

- b. In the same context as above:

\*Zhangsan: wo ye shi [e].  
I also be  
'So is the case with me (can play basketball).'

- c. ta hui da lanqiu; wo ye shi.  
he can play basketball; I also be  
'He can play basketball; so is the case with me.'

### 3.1.2 Backward Anaphora

Following Langacker (1966), Lobeck (1995) discussed the relevance of the backward anaphora constraint to VP-ellipsis in English—an anaphor cannot both precede and command its antecedent. The missing part in the Aux-construction in Chinese can precede (but not command) its antecedent—showing the effect of the backward anaphora constraint. In contrast, the *shi* clause must follow the antecedent clause (cf. Li, 2007; Wei, 2010).

(39)

yinwei Lisi bu yao/\*shi [e], suoyi wo yiding yao lai.  
because Lisi not will/be so I certainly will come  
'Because Lisi won't/\*it is not the case with Lisi, I definitely will come.'

### 3.1.3 Locality Condition

The *shi* and the Aux-construction also contrast in the relevance of locality conditions. For instance, when the *shi* clause appears in an adjunct island such as in (40) or a complex NP island (41), it cannot be interpreted as having an antecedent outside the island. In contrast, the Aux-construction can have antecedents across island boundaries (cf. Li, 2007; Wei, 2010).

(40)

Zhangsan hui tongyi zhe-ge jihua, [yinwei Lisi ye hui/\*shi]. -adjunct island  
 Zhangsan will agree this-CL plan because Lisi also will/be  
 ‘Zhangsan will agree with this plan, because Lisi also will/so will be the case with Lisi.’

(41)

Wo zhaodao-le [[Zhangsan hui tou dongxi de] zhengju],  
 I find-LE Zhangsan will steal thing DE evidence

dan wo zhao-bu-dao [[Lisi ye hui/\*shi de] zhengju]. – complex NP island  
 but I find-not-out Lisi also will/be DE evidence

‘I have found [[evidence [(that shows) Zhangsan will steal something]], but I cannot find [evidence [(that shows) Lisi also will/\*so will be the case with Lisi]].’

Without island boundaries, the *shi* clause can take the preceding matrix or embedded clause as antecedent (42a) and the *shi* clause itself can be embedded as in (42b). The possibility of long-distance relations without island boundaries suggests that the *shi*-construction is sensitive to island conditions.

(42)

- a. Zhangsan zhidao [Lisi chi-le na-ge pingguo], Laowang ye shi.  
 Zhangsan know Lisi eat-LE that-CL apple Laowang also be  
 ‘Zhangsan knows that Lisi has eaten the apple, so is the case with Laowang (Laowang knows that Lisi has eaten the apple).’  
 ‘Zhangsan knows that Lisi has eaten the apple, and so is the case with Laowang (Laowang has eaten the apple).’
- b. Zhangsan hen nuli, wo zhidao [Lisi ye shi].  
 Zhangsan very diligent I know Lisi also be  
 ‘Zhangsan is very diligent, and I know that Lisi also is (very diligent).’

### 3.2 Properties Shared by Aux- and Shi-Constructions

Despite their differences, Aux- and *shi*-constructions share several properties. First, both require their subjects to be definite.

(43)

a. *yi/zhe-zhi mao tiao-shanglai le; \*yi-zhi gou ye hui/shi.*  
 one/this-CL cat jump-up LE one-CL dog also will/be  
 ‘A/This cat jumped up; a dog also will/so will be the case with a dog.’

cf. b. *na-zhi mao tiao-shanglai le; na-zhi gou ye hui/shi.*  
 that-CL cat jump-up LE that-CL dog also will/be  
 ‘That cat jumped up; that dog also will/so will be the case with that dog.’

Second, both constructions allow true sloppy interpretations, showing the expected patterns on mixed readings discussed in Fiengo and May (1994) and G. Li (2002) (also see Hoji, 1998 for Japanese).

(44)

*Zhang hui shuo ta xihuan tade laoshi; Li ye hui/shi.*  
 Zhang will say he like his teacher Li also will

- a. ‘Zhang<sub>1</sub> will say he<sub>1</sub> likes his<sub>1</sub> teacher; Li<sub>2</sub> will (say he<sub>1</sub> also likes his<sub>1</sub> teacher), too.’
- b. ‘Zhang<sub>1</sub> will say he<sub>1</sub> likes his<sub>1</sub> teacher; Li<sub>2</sub> will (say he<sub>2</sub> also likes his<sub>2</sub> teacher), too.’
- c. ‘Zhang<sub>1</sub> will say he<sub>1</sub> likes his<sub>1</sub> teacher; Li<sub>2</sub> will (say he<sub>2</sub> also likes his<sub>1</sub> teacher), too.’ (Mix 1)
- d. \*‘Zhang<sub>1</sub> will say he<sub>1</sub> likes his<sub>1</sub> teacher; Li<sub>2</sub> will (say he<sub>1</sub> also likes his<sub>2</sub> teacher), too.’ (Mix 2)

In addition, in contrast to the stranded-V VP-ellipsis construction discussed in the nominal ellipsis article, both Aux- and *shi*-constructions include preverbal and postverbal adjuncts in the missing verb phrase (complement of the Aux or *shi*).

(45)

Zhangsan hui hen kuaile-de likai, Lisi ye hui/shi.  
 Zhangsan will very happy-DE leave Lisi also will/be  
 ‘Zhangsan will leave happily, Lisi will too/so will be the case with Lisi (=Lisi will also leave happily).’

Moreover, all the constructions disallowing missing objects discussed in section 1.2 of the nominal ellipsis article have acceptable Aux- and *shi*-counterparts.

(46)

ni bu yinggai da tui tang gu; ta ye bu yinggai/ta ye shi.  
 you not should hit exit hall drum he also not should/he also be  
 ‘You should not hit the hall-exit drum (give up); he should not hit the hall-exit drum, either.’

(47)

wo qu-le ta-jia yi-ge guinu; ta ye hui/shi.  
 I marry-LE he-family one-CL daughter he also will/be  
 ‘I married his family a daughter (I married a daughter from his family); so will/is he (marry a daughter from his family).’

(48)

wo chi-le ta yi-ge pingguo; tamen ye hui/shi.  
 I eat-LE him one-CL apple; they also will/be  
 ‘I ate him an apple (I ate an apple from him); so will/are they (ate an apple from him).’

(49)

tamen lai-le yixie keren; women ye hui/shi.  
they come-LE some guest; we also will/be  
'They have some guests visiting; so will/are we (have some guests visiting).'

(50)

ta hui kandao yi-ge haizi hen keai; ni ye hui/shi.  
he will see one-CL child very lovely you also will/be  
'He will see a child, very lovely; so will/be you (see a child, very lovely).'

(51)

wo hui cai ta hen congming; tamen ye hui/shi.  
I will guess he very smart they also will/be  
'I will guess that he is smart; so will/are they (guess that he is smart).'

(52)

wo hui gao yi chi; ta ye hui/shi.  
I will tall one foot he also will/be  
'I will be taller by one foot; so will/is he.'

These cases indicate that the missing part of the Aux- and *shi*-construction must contain the entire VP. Structurally, it is expected that an auxiliary takes as its complement a projection that is at least a VP. That is, the missing part of the Aux-construction must be at least a VP. The structure of the *shi*-construction is more complicated, even though we can still make a definite claim that what is missing in the *shi*-construction also must be at least a VP. We will turn to the structure of the *shi*-construction and the properties of *shi* in the next section. This section will end with a brief discussion on the derivation of the Aux- and *shi*-constructions—are they derived by deletion (Phonological Form [PF]-deletion) or a null part base-generated and interpreted via copying of lexical materials from the antecedent at Logical Form (LF)? As discussed in the nominal ellipsis article, extraction possibilities should be a good test. If we relativize an object out of the missing phrase in the Aux- and the *shi*-construction, the result is unacceptable, as in (53a–b).

Topicalizing the object out of the missing phrase following *shi* is also impossible, as in (54b). However, topicalizing the object out of the missing phrase following an auxiliary seems acceptable, as in (54a).

(53)

- a. wo hui kan de na-ben shu gen ta hui \*(kan \_\_) de na-ben shu yiyang.  
I will read DE that-CL book and he will read DE that-CL book same  
'The book that I will read is the same as the one that he will \*(read \_\_).'
- b. wo kan de na-ben shu gen ta ye shi \*(kan \_\_) de na-ben shu yiyang.  
I read DE the-CL book and he also be read DE that-CL book same  
'(Lit.) The book that I will read is the same as the one that he is \*(will read).'

(54)

- a. wo hui kan na-ben shu; zhe-ben shu, wo ye hui (kan \_\_).  
I will read that-CL book; this-CL book, I also will (read \_\_)  
'(Lit.) I will read that book, and this book, I will (read \_\_), too.'
- b. wo hui kan na-ben shu; zhe-ben shu, wo ye \*shi (hui kan \_\_).  
I will read that-CL book this-CL book, I also be will read  
'(Lit.) I will read that book, and this book, I \*am, too (will read \_\_).'

The impossibility of extracting from within the missing phrase in (53a–b) and (54b) indicates an LF-copying approach to the Aux-construction and the *shi*-construction should be more adequate. However, the acceptability of topicalization from within the missing VP in the Aux-construction (54a) seems to favor a PF-deletion approach—an exception to the others. If we are to keep the LF-copying mechanism consistently applying to these constructions, we will have to consider the possibility that topicalization in some cases is not the result of movement. Rather, the interpretation is obtained pragmatically (see the discussion in the nominal ellipsis article related to note 7), and such help from pragmatics is possible with the Aux-construction but not the *shi*-construction (see section 3.1.1). That topicalization and relativization are different is seen not only in the cases like (53) and (54) but also in the cases like (55) and (56).

(55)

- a. huiyuan, xuesheng hen duo.  
member student very many  
'(Among) members, students are numerous.'
- b. \*xuesheng hen duo de huiyan.  
student very many DE member  
'members (among whom) students are many'

(56)

- a. hua, meigui zui gui.  
flower rose most expensive  
'(Among) flowers, roses are most expensive.'
- b. \*meigui zui gui de hua  
rose most expensive DE flower  
'flowers (among which) roses are most expensive'

The unacceptability of (55b) and (56b) seems to correlate with that of [XP *de* NP] as in the following cases (cf. Saito et al., 2008):

(57)

- |           |    |         |             |            |
|-----------|----|---------|-------------|------------|
| *xuesheng | de | huiyuan | *huiyuan de | xuesheng   |
| student   | DE | member  | member      | DE student |

(58)

- |         |    |        |        |    |        |
|---------|----|--------|--------|----|--------|
| *meigui | de | hua    | *hua   | de | meigui |
| rose    | DE | flower | flower | DE | rose   |

Nonetheless, the distinction between relativization and topicalization requires much more research.



### 3.3 The Shi of the Shi-Construction

This section briefly discusses the structure of the *shi* construction, whose key word is *shi*. The construction is translated as “so is (not) the case with DP” (DP being the subject of the *shi* clause). *Shi* has complex properties and has been the subject of numerous works (see, for instance, Cheng, 2008; Hole, 2011; Paul & Whitman, 2008; Soh, 2007; Wei, 2009b). It can be a copular verb “be” or mark the constituent following it as the focus, in addition to functioning as the positive polarity answer to *yes/no* questions. Within this limited space, this article will avoid as much as possible repeating those properties covered in the literature and focus on points most relevant to the *shi*-construction.

The *shi*-construction is to state that what has been said in the preceding discourse also applies or does not apply to the subject of the *shi* clause—an antecedent with overt lexical materials is always required. Structurally, the subject of the *shi* clause is topicalized, capturing the fact that an indefinite noun phrase is not acceptable in such a position (see (43a–b) on the definiteness requirement on the subject of the Aux- and the *shi*- construction; cf. the nominal ellipsis article on the requirement that a topic in Chinese must be definite but a subject need not be).<sup>9</sup>

The fact that the noun phrase preceding *shi* must be a subject (and then topicalized) can be captured by analyzing *shi* as a verb, which needs a subject to form a clause. In addition, the verb status of *shi* captures the fact that it can be preceded by adverbs, modals, auxiliaries, negation, and so forth, like other verbs.<sup>10</sup>

(59)

Zhangsan hen xihuan dianying; Lisi dagai/yinggai/tongchang bu/ye hui shi.  
Zhangsan very like movie Lisi probably/should/usually not/also will be  
‘Zhangsan likes movies; so probably/should/usually will (not) be case with Lisi.’

As a verb, *shi* takes a clausal complement (labeled as Tense Phrase [TP]), whose subject must be identical to the subject of *shi*.<sup>11</sup> This article adopts a clausal TP structure that contains layers of functional projections such as TP, Modal Phrase, Negation Phrase, and so forth, with the subject of a clause at the Specifier position of the highest TP (raised from a lower position, such as the Specifier of vP). That is, what serves as complement of *shi* is a TP, which is missing in the *shi*-construction, and its content can be recovered via copying of the materials in the preceding antecedent TP at LF.

Although it is plausible to analyze *shi* as a verb, it does not capture the fact that the *shi*-construction has different properties from the Aux-construction, as demonstrated in sections 3.1.1–3.1.3. Wei (2010) suggested that their differences can be semantic: the *shi* in the *shi*-construction being semantically impoverished versus the Aux being semantically rich. Adapting this insight, we may analyze the two constructions as follows. The Aux-construction is just like the VP-ellipsis construction commonly found in other languages (although, potentially,

languages might differ in extraction possibilities from the missing VP, which requires further study). There is nothing special in Chinese regarding its Aux-construction. The properties of the Aux-construction listed in sections 3.1.1–3.1.3 are essentially the same for the VP-ellipsis construction cross-linguistically. In contrast, the *shi*-construction is a special anaphoric structure. *Shi* (or the *shi*-phrase) is an anaphor, whose antecedent is the utterance expressed by the immediately preceding TP—what is said about the subject in the immediately preceding antecedent TP also holds with the subject of the *shi*-clause. The precedence requirement is demonstrated in section 3.1.2. The immediacy requirement is illustrated in (60).

(60)

Zhang chi-le mian. Li chi-le fan. Wang ye shi.  
 Zhang eat-LE noodle Li eat-LE rice Wang also be  
 ‘Zhang ate noodle. Li ate rice. So was the case with Wang.’

In this instance, Wang could only eat rice. To capture the fact that the antecedent must immediately precede the *shi*-anaphor, we may propose that the anaphoric *shi* (or the *shi* phrase) undergoes raising to the peripheral position of the sentence, immediately adjacent to the antecedent TP. The relevance of locality conditions (section 3.1.3) is due to the presence of movement. Such an antecedent requirement on the *shi* anaphor accommodates the cases in sections 3.1.1–3.1.2 and (60).

## 4. Conclusion

This article focuses on the sluicing-like construction, the Aux-construction, and the *shi*-construction. Important facts and analyses were presented and reviewed, leaving some issues for further research. The first part concerns the sluicing-like construction, showing that neither the approach of base-generating a clause [*pro* (+ copula) + *wh*] nor the movement + deletion approach fully accommodates all the relevant facts. Yet, adopting both derivations simultaneously does not work either, as it would wrongly allow sentences that have been marked as unacceptable in the relevant sections. The second part of this article briefly compared the two main constructions that have been subsumed under the term “predicate ellipsis”—the Aux-construction and the *shi*-construction. The two differ in the size of the part that is missing—in the former, a VP licensed by an auxiliary, and in the latter, a Tense Phrase (TP) licensed by the verb *shi*. Neither one allows extraction from within the missing VP/TP, pointing to the advantage of a Logical Form–copying approach over a Phonological Form–deletion approach, although the contrast observed between topicalization and relativization operations (53–54) requires further research. There are other issues raised. For instance, section 3.1.1 mentioned that the Aux-construction does not require a linguistic antecedent, but the *shi*-construction does. The distinction might be captured by allowing the former to be pragmatically licensed (deep anaphora), in addition to being syntactically licensed as with the *shi*-construction. However, it would require more research to answer the questions of whether the Aux-construction is both

pragmatically and syntactically licensed and what the implications are. It would also be interesting to investigate the properties of *shi* further. Can all the instances of *shi* be unified (cf. Cheng, 2008, among others)? It is hoped that this article has presented the major analyses for the relevant constructions and the strengths and weaknesses of each option, which could provide an important basis to jump-start further research.

## Further Reading

In the growing body of literature on sluicing or sluicing-like constructions, Merchant (2001) extensively explored the Phonological Form–deletion approach to sluicing, originally pioneered by Ross (1969). For those who are interested in cross-linguistic perspectives of sluicing, the 2012 book by Merchant and Simpson offers a good picture on the issues related to sluicing or sluicing-like structures. Wei (2014) provided a guide to reading the book. The languages discussed in this book include those involving overt *wh*-movement, such as English, Dutch, Serbo-Croatian, and Romanian, and those not involving *wh*-movement, such as Japanese, Malagasy, Bangla, Hindi, Chinese, and Turkish. The analyses proposed for the languages can be divided into two types. The first type of analysis relies on movement of the *wh*-remnant, or the focused element, or the predicate, prior to deletion. The second type of analysis emphasizes the lack of overt *wh*-movement in some languages and entertains an approach that treats sluicing as clefts or other similar constructions. More recent advanced research on sluicing, sluicing-like constructions, and predicate ellipsis includes *The Oxford Handbook of Ellipsis*, edited by Jeroen van Craenenbroeck and Tanja Temmerman (2019), serving as a reference work for anyone interested in a particular type of ellipsis. Two articles of its Part III focus on sluicing and predicate ellipsis, respectively, and provide a systematic and detailed overview of their distinctive characteristics. Vicente (2019) offered a detailed and in-depth investigation of sluicing(-like) constructions, covering issues such as ways to analyze a sluice under the notion of (non-)isomorphism, multiple sluicing, and limits of a pure deletion analysis. Aelbrecht and Harwood (2019) covered issues relating to predicate ellipsis: English VP-ellipsis, Pseudogapping, cross-linguistic view of Verb Phrase Ellipsis (VPE), and, in particular, modal complement ellipsis and British English *do* anaphora, pertinent to the Aux- and *shi*-construction in this article.

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## Notes

1. The following symbols are used to translate the Chinese grammatical morphemes: BA—indicating the so-called disposal or *ba* construction in Mandarin Chinese; BEI—the passive form; CL—classifier; DE—modification marker or marker of possession; EXP—the experiential aspect marker; LE—perfective aspect marker when it follows a verb or the sentence-final *le* as an inchoative marker (V-*le* in the final position can be the combination of the two); NUM—numeral preceding classifier; Q—question marker; SFP—sentence-final particle.
2. Weir (2014) proposed that there is an antecedent Question-under-Discussion (QUD) for ellipsis constructions, making apparent island violations disappear because the QUD need not contain islands (also see Griffiths, 2019). Note that what constitutes a QUD is dictated by discourse/pragmatics, which brings it closer to the analysis postulating a subject *pro*, being identified by an antecedent from the preceding discourse (see note 6).
3. In his later work, Merchant (2013), among others, noted that P-stranding and sluicing possibilities are not always correlated cross-linguistically.
4. Wei (2017) discussed another difference between cleft and sluicing-like constructions in Chinese: the former has an exhaustiveness interpretation but not the latter. See Paul and Whitman (2008) for differences in exhaustiveness requirements between sentences with *shi* ‘be’ and with *shi* . . . *de* ‘be . . . DE.’
5. Wei (2004) argued for two types of *wh*-phrases: predicative and non-predicative. The latter type consists of bare *wh*-words *shei* ‘who’ and *shenme* ‘what,’ and the former, the rest of the *wh*-phrases, which have complex structures in syntax and yield predication. They can be divided into three subtypes in terms of how they take the predication status: (a) the modificational type, in which predication is derived from a modifier-modifiee relation within the *wh*-phrase, for example, [*shenme* [*ren*]] ‘what person’ and [*shenme* [*dongxi*]] ‘what thing’; (b) the prepositional type, in which predication is mediated via a preposition, for example, *wei* ‘for’ in *wei-shenme* ‘for what’; and (c) the adjectival type, for example, *duo-gui* ‘how expensive,’ in which predication results directly from the adjective itself. See, for instance, Longobardi (1994) for bare nominals ineligible to serve as predicates (cf. Ai, 2006; Tang, 2001 on nominals as predicates).
6. In line with the claim that *pro* in Chinese should be bound by the closest c-commanding antecedent, the interpretation mechanism can proceed as follows: a discourse topic is established according to the preceding discourse, which need not be overt in form (see the notion of empty topic in Chinese in Huang, 1982; see also Heim, 1982; Kamp, 1981 on reference-tracking across sentences). The discourse topic occupies the topic position c-commanding the subject of the clause, serving as the closest c-commanding antecedent to the subject *pro*.
7. For instance, (30B) without *shi* is acceptable to some speakers.
8. However, the proposal by Chung et al. (1995) on the identity of items from numeration for Logical Form (LF)–copying and Chung (2005) on lexical identity and semantic parallelism may offer a solution.
9. The subject of the Aux- and *shi*-construction is a contrastive topic—the situation described in the preceding discourse or in the context also applies or does not apply to the subject.
10. H. Cheng (2021) noted that the copular *shi* in copular sentences cannot appear after certain modals, and the constraint is encoded structurally—*shi* is high in the clausal structure, higher than a predicate phrase. The analysis does not seem to provide clear answers to the question of when and why *shi* is obligatory. It also requires much further research to determine whether the *shi*’s in different constructions have the same properties (see Cheng, 2021, section 7.2.2 on potential differences between copular and non-copular ones).



11. Under an LF-copying approach, the dependency relation can be achieved by LF-copying a clause containing the dependent bound by the subject (see the discussion in the text on (34a–b)).

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