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Abstract

Concerning the nature of sluicing-like constructions in Chinese, this thesis examines two competing analyses proposed in the literature: the pseudo-sluicing analysis and the PF-deletion (sluicing) analysis. It shows that both analyses fail to reconcile with the presence of the copula *shi* as well as the sloppy reading found in Chinese sluicing-like constructions. It also observes that the sloppy reading and the copula *shi* are in complementary distribution—constructions with the copular *shi* are unable to be associated with sloppy readings. With respect to such facts, this thesis suggests to divide Chinese sluicing-like constructions into two distinct syntactic structures, namely pseudo-sluicing (for those with the copula *shi*) and sluicing (for those without the copula *shi*). Further, this thesis manages to fix the difficulty in creating the environment for PF-deletion in sluicing by suggesting that the *wh*-phrase moves to the left periphery through topicalization. Discussions on problems proposed in the literature are also included.

Sloppy Identity in Chinese Sluicing-like Constructions

by

Ying Gong

B.A., Tianjin University, 2017

Thesis

Submitted in partial fulfillment of the requirements for the degree of
Master of Arts in *Linguistic Studies*.

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Chapter 1 Introduction

How to account for Chinese sluicing-like constructions is still under debate. By investigating the sloppy identity found in Chinese sluicing-like constructions, this thesis aims to provide a solution for this controversial topic. The introduction chapter sets the background relating to the topics of this thesis. It aims to answer two general questions: First, what is sluicing? Second, what is sloppy identity? Following a brief description of the sluicing constructions at the beginning, I introduce the PF-deletion Analysis (Merchant 2001, 2008) in detail to reveal the insight of this approach to sluicing. Then, I describe the notion of sloppy identity as well as how it can be accounted for. The outline of this thesis is provided at the end of this chapter.

1.1 What is Sluicing?

Sluicing as a distinct phenomenon was first discovered and described by Ross (1969) as a type of ellipsis found in interrogative clauses. In a sluicing construction, only the *wh*-expression is pronounced, while everything else is missing, as exemplified in (1a) and (1b).

- (1)
- a. John likes **someone**, but I don't know **who**. (=I don't know who John likes)
 - b. John left the house, but I don't know **when**. (=I don't know when John left the house)
 - c. *John likes **that person**, but I don't know **who**.

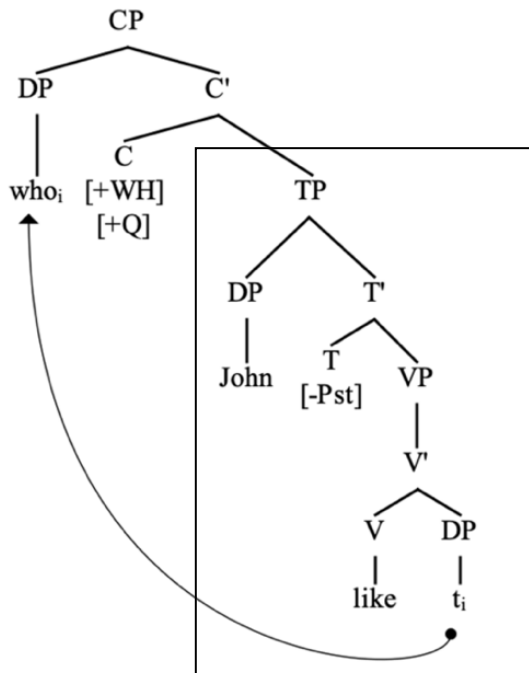
The embedded questions in (1a) and (1b) as shown in the parentheses can be fully understood with only the *wh*-phrases being overtly pronounced. The *wh*-phrase may or may not correspond to an overt correlate in the preceding clause (Ross 1969). (1a) instantiates the case where the *wh*-phrase corresponds to an overt correlate: *who* corresponds to *someone*; while (1b) instantiates the case where the *wh*-phrase corresponds to a covert correlate: *when* does not correspond to any overt constituent but rather a covert correlate which can be understood as the time of the event that is represented by the VP of the preceding clause, i.e., John's leaving of the house. Notably, if there is an overt correlate, such a correlate must be indefinite, otherwise, it will be unacceptable, as exemplified in (1c) where *who* corresponds to the definite NP *that person*.

Sluicing is distinguished from VP-Ellipsis in the sense that the missing constituent in sluicing is the whole Tense Phrase (TP) rather than only the Verb Phrase (VP). The missing string may include any subject Determiner Phrases (DPs) or auxiliaries as well as the VP; but the missing part should not be a Complementizer Phrase (CP) as the *wh*-phrase—which is expected to be located at the Specifier position of CP (SpecCP)—is required to remain (Carnie 2013). For example, one will not accept sentences below when the missing constituent is just the VP (cf. 2a) or the whole CP (cf. 2b), but will accept the case when the missing constituent is the TP (cf. 2c):

- (2) a. *I know John will hit someone. But who will John (~~hit~~)?
 b. *I know John will hit someone. But (~~who will John hit~~)?
 c. I know John will hit someone. But who (~~will John hit~~)?

1.2 The PF-Deletion Analysis of Sluicing

Sluicing has been studied at length in relevant literature. The most common approach is the PF-Deletion Analysis proposed in Merchant (2001). It assumes that the *wh*-phrase moves to SpecCP via *wh*-movement, and the TP left behind undergoes deletion thereafter, as illustrated below:



- (3) a. **John likes** someone, but I don't know [_{CP} *who*_i [+WH] [_{TP} ~~John likes~~ *t*_i]].
 b. **John left the house**, but I don't know [_{CP} *when*_i [+WH] [_{TP} ~~John left the house~~ *t*_i]].

For languages in which overt *wh*-movement is found, like English, this seems true. The raising of the *wh*-phrase leaves all the other elements behind, naturally creating an environment for ellipsis (cf. 3). The *wh*-phrase, such as *who* in (3a), is generated inside the elided TP and is raised to a clause-peripheral position—SpecCP, motivated by the [+WH]-feature triggering *wh*-movement. The remaining TP that is left behind, given that it is identical (where “identical” means either

syntactically or semantically identical)¹ to part of the preceding clause (i.e., the boldfaced strings in (3)), is later deleted at the Phonetic Form (PF) component. This analysis is based on the hypothesis that although the missing string (i.e., the ellipsis site) is not overtly pronounced, it is still syntactically active.

1.2.1 The E-feature

Once such a derivation is established, the question of what licenses the PF-deletion must be asked. Merchant (2008) assumes that the PF-deletion is triggered by the presence of a feature of a head—the triggering feature [E]. The properties of [E] are defined as below:

- a. Syntactically, [E] must encode all the checking requirements. For example, in the English sluicing, [E] is [+WH] and [+Q].
- b. Phonologically, [E] instructs PF not to parse its complement. In sluicing, that will be: Do not parse the TP—as being the complement of C_[E].
- c. Semantically, [E] must capture the traditional identification of the ellipsis site, ideally encoding all and only those requirements that regulate under what conditions an XP can be deleted.

(Merchant 2008)

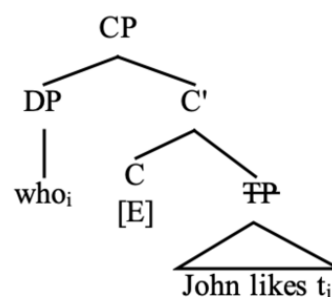
With the E-feature, the deletion procedure for (3a) can be illustrated as below:

¹ The identity relation between the ellipsis site and its antecedent has been discussed in the literature. The only thing which is certain is that it cannot be simply phonological or morphological identity. Aside of that, nothing is clear. Some scholars have a preference for syntactical identity, namely that the ellipsis site should be identical in structure to its antecedent. Some other scholars have expressed a preference for semantical identity, namely that only identity in meaning is required. Recently, there emerges a new argument for both a syntactical and semantical identity. (See discussions in Tanaka (2011) and Van Craenenbroeck and Merchant (2013).)

$[E] = [+Q, +WH]$ (the syntax of E)

$\|E\| = \|\text{John likes who}\|$ (the semantics of E)

$\Phi_{TP} \rightarrow \emptyset / E \text{ ___}^2$ (the phonology of E)



Merchant's analysis is even strengthened with the *wh*/sluicing-correlation generalization (Van Craenenbroeck and Lipták 2006) which claims that the syntactic features of the [E]-feature are language-specific and are identical to the strong features that a *wh*-phrase needs to check in a regular constituent question in the language. This allows languages in which the *wh*-phrase does not move up to check the [+WH]-feature still being able to license clausal ellipsis with the [E]-feature encoded with their strong features. Examples are found with Hungarian-type languages where the *wh*-phrase does not check the [+WH]-feature but the [+Foc]-feature: sluicing is found at the focus position in those languages (Van Craenenbroeck and Merchant 2013).

1.2.2 Island Effects Insensitivity

Aside from the licensing, another question is why *wh*-movement in sluicing seems to be insensitive to most syntactic island effects and locality constraints. Tested island effects include the Complex Noun Phrase Constraints, the Left-Branch Island, the Adjunct Island etc. (see Chung et al. 1995).

To account for the island insensitivity phenomenon, Merchant (2008) proposes the “*-as-a-feature-of-traces” view and the MaxElide constraint. The “*-as-a-feature-of-traces” view proposes that “*” symbolizes a PF-uninterpretable feature, which is used to mark the problematic

² The phonological formula here means: The PF-interpretation of the TP is silenced if TP occurs after [E].

traces left by the *wh*-phrase when it moves out of the islands. For example, in a construction like (4a), the *wh*-phrase *which language* first moves out of the CP that contains another *wh*-phrase *who*, violating the *wh*-island constraint, thus the trace t_i located outside the CP is marked with “*”. As the *wh*-expression keeps moving, every copy (trace) of it is marked with “*”, until its last landing in the highest SpecCP.³ Because the last step of the movement can be licensed by the [+WH]-feature at C, the “*” feature of the highest copy will be eliminated. With all these PF-uninterpretable traces marked by “*”, the final construction will cause a PF-crash, disallowing such a construction to be PF-interpreted.

- (4) a. *[_{CP} **which language**_i does ***t_i** [_{TP} he meet ***t_i** [_{DP} the man ***t_i** [_{CP} who speaks **t_i**]]]]]
- b. He meets someone who speaks an Asian language, but I don't remember **which language**.
- c. ... , I don't remember [_{CP} **which language**_i [_{TP} ~~***t_i** he meets ***t_i** the man ***t_i** who speaks **t_i**]]]~~

When turning to a construction like (4b), which contains a PF-uninterpretable structure (i.e., (4a)) in its syntactic representation, (4b) can still be PF-interpreted—it is rescued because the PF-deletion of the TP will eliminate all PF-uninterpretable traces as shown in (4c), making the rest of the sentence PF-interpretable.

However, this “*-as-a-feature-of-traces” approach only explains why sluicing is insensitive to island effects but will wrongly predict VP-Ellipsis to have similar island effects insensitivity as well (cf.5a). Moreover, it has been observed that in cases where sluicing is available, VP-Ellipsis

³ Merchant (2008) assumes that the *wh*-movement proceeds by adjunction to intervening maximal projections, thus the *wh*-phrase will stop at every possible spot.

in the same clause is usually disallowed (cf. 5b); while with *wh*-subjects, VP-Ellipsis is allowed as well as sluicing (cf. 5c) (Merchant 2001, 2008).

- (5) a. *He meets someone who speaks an Asian language, but I don't remember **which language**; he does [_{VP} meet the man who speaks **t_i**]
- b. He meets someone from Asia, but I don't remember who (*he does).
- c. Someone met John yesterday, but I don't know who (did).

In order to fix such problems, Merchant (2008) further proposes an inviolable constraint called the MaxElide Constraint⁴. The definition given by Merchant (2008) is as below:

Let XP be an elided constituent containing an A'-trace. Let YP be a possible target for deletion. YP must not properly contain XP.

Examples in (5) follow the MaxElide Constraint. In (5a) and (5b), each of the elided constituents contains a *wh*-trace, thus eliding only the VP will violate the MaxElide Constraint. By contrast, in (5c), the elided VP does not contain any *wh*-trace but only the trace of subject-movement, therefore VP-Ellipsis is not a violation of the MaxElide Constraint.

Another application of the MaxElide Constraint is provided in Hartman (2011) with *wh*-adverbials regarding embedded clauses. By taking that *wh*-adverbials are merged to the TP as adjuncts, Hartman (2011) observes the contrast between sluicing and VP-Ellipsis in (6).

⁴ Takahashi and Fox (2005) provide another version, building on the theory of ellipsis parallelism (Rooth 1992):
 i) To license the ellipsis of the elided constituent, there must exist a constituent, call it the parallelism domain, that reflexively dominates the elided constituent (where XP reflexively dominates YP if XP dominates YP or XP = YP).
 ii) The parallelism domain must satisfy the parallelism condition that it is semantically identical to another constituent AC, modulo focus-marked constituents.
 iii) Ellipsis must target the largest deletable constituent reflexively dominated by the parallelism domain.

(6) I forget when John said Mary left. (adapted from Hartman 2011)

Matrix reading: I forget when John said that.

Embedded reading: I forget when Mary left.

Sluicing: John said Mary left, but I forget when. (Matrix/Embedded)

VP-Ellipsis: John said Mary left, but I forget when he did. (Matrix/*Embedded)

As illustrated in (6), the sluicing case can have both the matrix and the embedded reading, while the VP-Ellipsis case only has the matrix reading. The reason is straightforward if we consider the original position of *when*: if *when* is generated below the elided VP (cf. 7a), the movement of *when* will leave an A'-trace, resulting the VP-Ellipsis to be ruled out by the MaxElide Constraint; on the other hand, if *when* is generated above the elided VP (cf. 7b), the elided site will not contain the *wh*-trace, therefore both sluicing and VP-Ellipsis are permitted.

(7) a. I forget when_i [_{TP} John [_{VP} said t_i Mary left]]. (embedded reading, MaxElide applies)

b. I forget when_i [t_i [_{TP} John [_{VP} said Mary left]]]. (matrix reading, MaxElide doesn't apply)

1.2.3 Summary

To summarize, sluicing is a case of clausal ellipsis, which involves the extraction of the *wh*-phrase out of the ellipsis site (i.e., the TP). The extraction is insensitive to island effects and will move the related *wh*-phrase to the left periphery of the clause. The remaining constituent (i.e., the TP), which is selected and restricted by the MaxElide Constraint, undergoes the deletion licensed by the [E]-feature, leaving only the *wh*-phrase to be PF-interpreted.

1.3 Strict and Sloppy Identity

Strict and sloppy identities are defined as the interpretationally ambiguous identities of the pronoun in an elided verb phrase. When the pronoun in the elided VP is co-indexed with the one in the antecedent VP, it is said to have a strict identity. If the pronoun in the elided VP does not denote to the same referent denoted by the pronoun in the antecedent VP, it then has a sloppy identity, as exemplified in (8).

(8) John played with **his** dog, and Bill did too. =(Bill played with **his** dog too)

Strict: John played with his(=John's) dog, and Bill played with his(=John's) dog too.

Sloppy: John played with his(=John's) dog, and Bill played with his(=Bill's) dog too.

Based on the Deletion-at-PF analysis (Chomsky 1975; Ross 1969; Sag 1976, etc.), (8) is an instance of VP-Ellipsis where the elided part is the VP [play with *his* dog], that is, (8) should have an abstract syntactic structure as interpreted in (9).

(9) **John** played with **his** dog, and **Bill** played with **his** dog too.

As required by Binding Theory⁵ Condition B, the pronoun *his* in the elided VP has to be free in its binding domain. Such a requirement will be satisfied whether *his* is co-indexed with the local antecedent *Bill* (which leads to a sloppy identity) or is co-indexed with the non-local antecedent *John* (which leads to a strict identity). Thus both readings are available.

⁵ Binding Theory (Chomsky 1982):

Condition A: An anaphor must be bound in its binding domain.

Condition B: A pronoun must be free in its binding domain.

Condition C: An R-expression must be free.

Following this analysis, the anaphor in the elided VP, on the other hand, should never take the subject of the first clause as its antecedent but rather be bound⁶ by its local antecedent with respect to Condition A. Therefore, only sloppy identity will be expected as illustrated in (10).

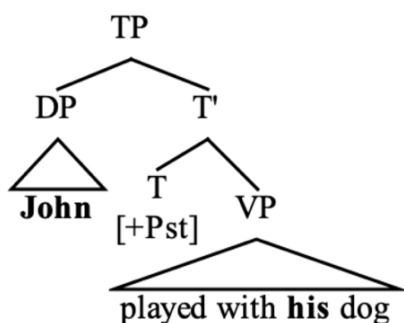
(10) John cut himself yesterday, and Bill did too.⁷

Sloppy: John cut **himself**(=John) yesterday, and Bill cut **himself**(=Bill) too.

According to the Condition A, each anaphor must be bound by its local antecedent, that is the first anaphor *himself* must be bound by *John*, and the second *himself* must be bound by *Bill*, resulting in only the sloppy reading.

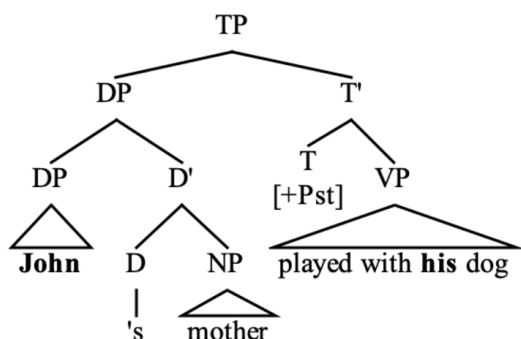
Aside from Binding Theory, another constraint for an elided clause to be able to generate the sloppy identity is that in the antecedent clause, the pronoun should be c-commanded by its antecedent, otherwise the sloppy identity is not accessible (Ross 1967), as illustrated in (11).

(11) a. **John**_i played with **his**_i dog, and Bill did too. (strict/sloppy)



⁶ A status of being bound requires the bindee to be 1) co-indexed with the binder and 2) c-commanded by the binder.

⁷ As noted by Carnie (2013), some native speakers think a sentence like (10) also has a strict identity and if it is the case, then the existence of strict identity will question the PF-deletion analysis for ellipsis in the sense that the co-indexation of the elided anaphor with the matrix subject will violate the Binding Theory.



b. **John**_i's mother played with **his**_i dog, and Bill's mother did too. (strict/*sloppy)

A related property is that the pronoun cannot have a discourse “external” reference as exemplified in (12).

(12) John_i likes his_k dog, and Bill_j does too. (strict/*sloppy)

In (12), the pronoun *his_k* is not co-indexed with *John_i*, but someone else marked with “k”. Even though a c-commanding relation is satisfied between *John* and *his*, a binding relation between these two is not established. The result is that only strict reading is available for the sluiced part of the utterance. Such a result points out that a binding relation of the antecedent and the pronoun in the preceding clause is essential for sloppy identity.

1.4 Mapping the Thesis

This thesis is divided into six chapters, each with several sections. The second chapter provides a typological overview of Chinese sluicing-like constructions as well as two divergent analyses of such constructions. In chapter 3, I look into the sloppy identity in Chinese sluicing-like constructions and discuss the problems which those existing approaches are faced with. Chapter

4 and 5 lay out my analysis, with the former focused on the revision of those existing analyses and the latter discussing a number of related issues. Chapter 6 is the conclusion.

Chapter 2 Sluicing in Chinese

In this chapter, I demonstrate the special properties Chinese sluicing-like constructions reveal, namely the occurrence of the copula *shi* and the unacceptability of the *wh*-phrase *zenme* ‘how’. In reviewing the two competing analyses proposed in the literature—the pseudo-sluicing analysis and the PF-deletion (sluicing) analysis—I summarize their strengths and challenges. In particular, I demonstrate the problems each of the analyses are faced with and state my concerns and questions.

2.1 Chinese Sluicing-like Constructions

The PF-Deletion Analysis (Merchant 2001, 2008) fits very well into the nature of interrogatives in English and should also be expected to work with other similar *wh*-moving languages, but it raises problems in the case of *wh*-in-situ languages. The crucial property of such a PF-deletion analysis is that an overt *wh*-movement is required to create the environment for the deletion process. In *wh*-in-situ languages, like Chinese, however, such *wh*-movement is not expected, at least overtly—the *wh*-phrase does not move to check any feature in the regular constituent question—but sluicing-like constructions are still found.

Chinese sluicing-like constructions share a lot of similarities with their English counterparts. For example, an antecedent is needed for the ellipsis site, an overt or implicit correlate in the

antecedent clause for the *wh*-remnant is necessary, and only the *wh*-phrase is left behind, as exemplified in (13).

(13) a. John: *yi ge xuesheng zai tiaowu.*

one student is dancing

‘One student is dancing.’

a’. Bill: *oh, wo xiang zhidao shi shei.*

oh, I want know COP **who**

‘Oh, I want to know who.’

b. (There is a student dancing on the Quad)

b’. Bill: #*oh, wo xiang zhidao shi shei.*⁸

oh, I want to know **who**.

‘Oh, I want to know who.’

In (13a), both the antecedent clause *zai-tiaowu* ‘is-dancing’ and the overt *wh*-correlate *yige-xuesheng* ‘one-student’ are given in discourse but are lacking in (13b). Such differences result in the acceptability of (13a’) but the unacceptability of (13b’). Also, in (13a’) the *wh*-phrase ‘who’ remains at the clausal-periphery while nothing else follows it. These properties in Chinese sluicing-like constructions are very reminiscent of those of English sluicing. Nevertheless, Chinese sluicing-like constructions differ from English sluicing as the copula *shi* ‘be’ occurs notably and unexpectedly.

⁸ “#” marks sentences that are not pragmatically felicitous.

2.1.1 The Occurrence of the Copula *shi*

The most salient difference between English sluicing and Chinese sluicing-like constructions lies in the occurrence of the copula *shi* ‘be’. The distribution of the copula *shi* in Chinese sluicing-like constructions is complex. Examples parallel to (1) are given in (14).

(14) a. *John xihuan mouren, dan wo bu zhidao *(shi)⁹ shei.*

John like someone, but I not know *(COP) who

‘John likes someone, but I don’t know who.’

b. *John likai le fangzi, dan wo bu zhidao (shi) shenmeshihou.*

John leave Pst house, but I not know (COP) when

‘John left the house, but I don’t know when.’

There exist sentences in which the occurrence of the copula *shi* is obligatory (cf. 14a), while there exist other cases where the copula *shi* is optional (cf. 14b). There are two accounts proposed in the literature for the distribution of the copula *shi*, which can be described as the “argument-adjunct asymmetry” approach and the “simplex-complex asymmetry” approach.

The first approach suggests that the distribution of the copula *shi* is related to the argument-adjunct status of the remnant *wh*-phrase: the copula *shi* is required for argument *wh*-phrases¹⁰,

⁹ The notation here means when the sentence does not include the copula *shi*, it is considered ungrammatical, and is marked with the asterisk *, while if the sentence includes the copula *shi*, as is provided inside the brackets, it is considered grammatical, thus is not marked by *. In (14b), either with or without the copula *shi*, the sentence is good.

¹⁰ An argument *wh*-phrase refers to a *wh*-phrase which is predicated by the verb as an argument. For example, in the sentence “who does John like?”, *who* is considered as an argument *wh*-phrase, as it is an argument (theme) of the verb *like*.

but optional for adjunct *wh*-phrases¹¹ (Wang 2002; Wang and Wu 2006). Under this view, a sluicing-like construction like (14a) would require an obligatory copula *shi* because the *wh*-phrase *shei* ‘who’ is an argument of the verb *xihuan* ‘like’. By contrast, sentences like (14b) would have an optional choice of the copula *shi* because the *wh*-phrase *shenmeshihou* ‘when’ is an adjunct of the VP.

However, many other scholars (Adams and Tomioka 2012; Murphy 2014; Song 2016; Li and Wei 2017) argue that rather than the argument-adjunct asymmetry, the distribution of the copula *shi* is actually related to the simplex-complex status of the *wh*-remnant. It is proposed that the copula *shi* is obligatory with simplex *wh*-phrases—the only two simplex *wh*-phrases in Chinese are *shei* “who” and *shenme* “what”; while the copula *shi* is optional with complex *wh*-phrases—the other *wh*-phrases in Chinese. Evidence comes from instances in which the argument but complex *wh*-phrases are found in sluicing-like constructions without the copula *shi*, as exemplified in (15).

(15) a. *John xihuan mouge ren, dan wo bu zhidao *(shi) shei.*

John like some person but I not know COP who

‘John likes someone, but I don’t know who.’

b. *John xihuan mouge nvsheng, dan wo bu zhidao (shi) nage nvsheng.*

John like some girl but I not know COP which girl.

‘John like some girl, but I don’t know which girl.’

¹¹ An adjunct *wh*-phrase refers to a *wh*-phrase that is the adjunct of the verb phrase. For example, in the sentence “why does John like her?”, *why* is considered as an adjunct *wh*-phrase, because it’s not an argument (neither the agent nor the theme) of the verb *like*.

As both of the *wh*-phrases in (15a) and (15b) are the argument of the verb *xihuan* ‘like’, the two sentences show different behaviors towards the copula *shi*: (15a) with the simple *shei* ‘who’ asks for an obligatory *shi*, while (15b) with the complex *nagenvsheng* ‘which girl’ does not. It seems this simplex-complex approach is able to make a more accurate prediction. However, we are still faced with another equally confusing question with such an approach: What counts as a simplex *wh*-phrase?

Both approaches suggest that there is a certain class of *wh*-phrase that can optionally choose the copula *shi*—the adjunct *wh*-phrase in the first view or the complex *wh*-phrase in the second view. As far as I am concerned, the motivation for this division is that scholars generally believe that the occurrence of the copula *shi* varies depending on the properties of the *wh*-phrase, and that for those sentences which choose the copula *shi* optionally, no semantic differences should obtain between the two realizations. That is, the version with *shi* and the version without *shi* are derived in the same way and have exactly the same meaning. For example, (16a) and (16b) are believed to have the same meaning.

(16) *John zhidao ziji weishenme bei ma,*

John know self why is blamed

‘John knows why self(=he) is blamed,’

a. *Bill ye zhidao weishenme.*

Bill also know why

‘Bill also knows why.’

b. *Bill ye zhidao **shi** weishenme.*

Bill also know **COP** why

‘Bill also knows why.’

However, I am skeptical about such indications. I argue that the sentence without the copula *shi* (cf. 16a) actually differs from the one with *shi* (cf. 16b), both semantically and syntactically. My evidence comes from their different accessibilities with respect to strict and sloppy interpretations, namely, a sentence like (16a) is accessible to a sloppy interpretation while (16b) is not. Based on this fact, I assume that these two sentences are derived in two different ways, namely via pseudo-slucing for sentences with the copula *shi*, and via PF-deletion (i.e., sluicing) for sentences without the copula *shi*. Also, I propose that the distribution of the copula *shi* is not related to the *wh*-phrase, but rather to the way in which such sentences are derived. Further discussion will be provided in Chapter 3.

2.1.2 The Manner *Wh*-phrase *zenme* ‘how’

Another equally special characteristic of Chinese sluicing-like constructions is that the *wh*-phrase *zenme* ‘how’ is not found in these constructions (Adams 2004), as shown in (17).

(17) **Mary dakai le men, dan wo bu zhidao (shi) zenme.*¹²

Mary open Pst door but I not know (COP) how

‘Mary opened the door, but I don’t know how.’

The *wh*-phrase *zenme* ‘how’ itself has peculiar behaviors compared to other *wh*-phrases in Chinese. In general, there are two functions of *zenme* ‘how’: one is to ask for an evaluation/opinion, usually shows up in the form of *zenmeyang* ‘how’ (cf. 18), and another is to question the manner/method, usually in the form of *zenme* ‘how’ (cf. 19). These two forms are not interchangeable in most cases.

¹² Either with or without the copula *shi*, this sentence is considered unacceptable.

(18) Asking for an evaluation (*zenmeyang*)

a. *zhejian waitao (*shi) zenmeyang?*

b. **zhejian waitao (*shi) zenme?*

this coat COP how

‘How is this coat?’

(19) Asking for the manner (*zenme*)

a. *ni zenme chi pangxie?*

b. **ni zenmeyang chi pangxie?*

you how eat crab

‘How do you eat crab?’

It is worth noting that in asking for an evaluation as in (18a), the copula *shi* is not allowed, something which is different from the English counterpart where the copula *be* is required. This fact hints that there are some non-verbal predicates, such as *zenmeyang* ‘how’, functioning like verbs in Chinese. In addition, (19a) shows that the manner *wh*-expression *zenme* ‘how’, unlike other adjunct *wh*-phrases (e.g., *weishenme* ‘why’, *shenmeshihou* ‘when’) which are relatively free in word ordering—they can occur either sentence initially or sentence internally—*zenme* ‘how’ must be located before the verb.¹³

¹³ Adams and Tomioka (2012) observe the sentence-initial *zenme*; in our example, this usage would look as follows: “*zenme*, you eat crab?” However, the sentence-initial *zenme* is not a question *wh*-phrase but an expression of surprise. The reading of such a sentence will be: “What?? You eat crab?” Thus, I hold the view that *zenme*, as a manner *wh*-expression, must occur before the verb.

Based on different analyses of Chinese sluicing-like construction, different reasons have been proposed to account for the peculiar behavior of *zenme* ‘how’, namely, that it is disallowed in either a pseudo-sluicing construction or a focus construction. Further discussion is provided in chapter 5.

2.1.3 Summary

In general, Chinese sluicing-like constructions differ from English sluicing mainly in two aspects: the occurrence of the copula *shi* and the impossibility of the *wh*-phrase *zenme* ‘how’ in these constructions. Together with the fact that no [+WH]-feature triggering (overt) *wh*-movement is expected in Chinese, those differences disallow the direct extension of the PF-deletion analysis of English sluicing to Chinese sluicing-like constructions.

On the one hand, scholars try to adjust Chinese sluicing-like constructions to the movement-and-PF-deletion analysis. They argue that although *wh*-phrases do not move up to check the [+WH]-feature through overt *wh*-movement in Chinese, they can still be moved via a more general focus movement in order to feed the PF-deletion process (Wang and Wu 2006). On the other hand, an opposing view, supported by many other scholars (Adam and Tomioka 2012; Li and Wei 2017), refuses to view Chinese sluicing-like constructions in parallel with English sluicing; instead, this opposing view prefers to claim a base-generated pseudo-sluicing structure.

2.2 Two Competing Approaches

Like Chinese sluicing-like constructions, another *wh*-in-situ language, Japanese, also has sluicing constructions with the occurrence of the copula. Japanese sluicing is analyzed as derived from “concealed cleft” constructions (Saito 2004) with respect to the similarities shared by cleft

constructions and sluicing constructions in Japanese. However, Adams (2004) argues that Chinese sluicing-like constructions fail to parallel cleft constructions as they have major dissimilarities: i) the *wh*-phrase *zenme* ‘how’ is found in cleft constructions but not in sluicing-like constructions; ii) the cleft construction is sensitive to syntactic island constraints while the sluicing-like construction is not. Therefore, a similar reduced cleft analysis is unsuitable for Chinese sluicing-like constructions; instead, two other competing analyses are proposed for such constructions, namely the pseudo-sluicing analysis and the focus-movement-and-PF-deletion analysis.

2.2.1 The Pseudo-sluicing Analysis

The pseudo-sluicing analysis holds that the sluicing-like construction in Chinese is not genuine sluicing but is actually an instance of pseudo-sluicing (Adam and Tomioka 2012; Li and Wei 2017). It argues that besides the overt *wh*-phrase, there should be a null *pro* involved, as illustrated in (20).

(20) a. *John xihuan mouren, dan wo bu zhidao [pro shi shei].*

John likes someone but I not know *pro* COP who
 ‘John likes someone, but I don’t know who.’

b. *John likai l e fangzi, dan wo bu zhidao [pro (shi) shenmeshihou].*

John leave Pst house, but I not know *pro* (COP) when
 ‘John left the house, but I don’t know when.’

This analysis, first proposed by Adams (2004) and Wei (2004) separately, argues for a base-generated clause that contains a phonologically silent pronominal subject *pro* as well as the *wh*-phrase in a structure schematized as [*pro* (*shi*) *wh*-phrase].

By assuming that the copula *shi* has a predicate function, this analysis proposes that the copula *shi* can form a predicational clause such as [X is Y]. To account for the distribution of the copula *shi*, this analysis further argues that Chinese *wh*-phrases are divided into predicative ones and non-predicative ones. If the *wh*-phrase is a predicate itself, the copula *shi* is optional, by contrast, if the *wh*-phrase is not a predicate, the copula *shi* is required to form the predicational clause (Wei 2004, 2011). Under this view, the ability of predication corresponds to the type of the *wh*-phrase—the simplex *wh*-phrases do not have such an ability, but the complex *wh*-phrases do. It is also proposed that the copula *shi* found with non-predicate *wh*-phrases is an identification marker which is [+verb, -adverb, -noun], while the copula *shi* found with predicate *wh*-phrases is an emphatic marker which is [-verb, +adverb, -noun] (Wei 2011).

However, such claims about the copula *shi* are confusing. First, there seems to be a mismatch between a verb-like predicate and a non-verb-like predicate with respect to semantic types. Specifically, I argue, only verb-like predicative phrases can form a predicational clause without the copula, while non-verb-like predicative phrases still require the copula to form a copular clause. Second, the copula *shi* is indeed able to serve as a focus marker, which may contain certain emphatic functions; however, such an emphatic marker should be able to occur with either verb-like or non-verb-like predicative elements equally. Then as being distinguished from the copula *shi* in copular clause, why would such an emphatic copula *shi* be unable to occur before the verb-like predicative *wh*-phrase, and what should one do if one wants to emphasize such a *wh*-phrase?

This analysis suggests that in forming a copular clause¹⁴ [X is Y], the copula *shi* is optional if Y is a predicate. There seems to be a presupposition that predicates do not need the copula in copular clauses, which I argue, is inaccurate. Take English as an example: the copula *be* is required when the predicate is not a verb. In another way, the copula *be* is required for non-verbal predicates (e.g., Adjectives).

There are many studies discussing the functions of a copula in copular clauses, among which the two-*be* position proposed by Russell (1919) is the most influential one (Mikkelsen 2008). The two-*be* position classification of the copula *be* in Russell (1919) makes a distinction between a contentful *be* and a meaningless *be*. The contentful *be* contains a meaning of identity, thus is able to link the two NPs in equative clauses, while the meaningless *be* only serves for syntactic reasons as in predicational clauses:

$\|be_{ident}\| = \lambda x \lambda y [y = x]$ (For example: [This boy] is [John], where “is” means “equal”).

$\|be_{pred}\| = \lambda P \lambda x [P(x)]$ (For example: [John] [is tall], where “is” doesn’t contribute any meaning.)

In most cases, a non-predicative phrase, such as NP, will ask for an identificational copula *be* in order to form a predicational phrase; while a non-verbal predicative phrase (e.g., AdjP in English) will ask for a predicational copula *be*. Similarly, in Chinese, even if *wh*-phrases like *weishenme* ‘why’ are assumed to be predicative here, they are still expected to occur with a copula *shi*, as long as they do not function as a verb. And this is examined in normal copulative constructions where the subject is an overt pronoun as in (21).

(21) *zhe *(shi) weishenme.*

¹⁴ Copula clauses refer to clauses introduced by a copula when the predicate is not a verb (in English).

this *(shi) why

‘Why is it?’

The obligatory occurrence of the copula *shi* in (21) indicates that *weishenme* ‘why’ is not a verb-like predicate. Recall the discussion of the evaluation *wh*-phrase *zenmeyang* ‘how’ with which the occurrence of the copula *shi* is disallowed. The contrast between *weishenme* ‘why’ and *zenmeyang* ‘how’ shows that there indeed is a distinction between non-verb-like predicative *wh*-phrases and the verb-like predicative *wh*-phrases in Chinese, and *weishenme* ‘why’ does not function as a verb. Therefore, I doubt if it is safe to propose that the predicative *wh*-phrase does not need an obligatory copula *shi*.

By contrast, in cases where there are verb-like predicative phrases, neither the identificational nor the predicational copula is allowed. In Chinese, AdjPs and some PPs function as verbs with which the copula *shi* is not permitted to occur for predicational purposes, as illustrated in (22a).¹⁵ However, there are also examples where the copula *shi* is found with these verb-like predicative phrases as in (22b). Such a copula *shi* differs from what we have discussed above; it is believed to be the focus marker that only occurs in focus constructions which are derived from the cleft construction *shi...de* (Paul and Whitman 2008).

(22) a. *John (*shi) zai Beijing.* [NP PP]

John (*COP) in Beijing

‘John is in Beijing.’

¹⁵ Presumably, this also explains why the evaluation *zenmeyang* ‘how’ does not allow the copula *shi*, as the answer for such a question will be a AdjP, which functions as verb-like predicate, a similar predicate status can be related to the *wh*-phrase.

b. *John shi zai BEIJING, bu shi zai SHANGHAI.* [NP COP PP]

John COP in BEIJING not COP in SHANGHAI

‘John is in BEIJING, not in SHANGHAI.’¹⁶

(22a) is ungrammatical with the copula *shi* if it is only a descriptive claim which introduces a fact about the subject *John*. On the other hand, when focalization is involved, as shown in (22b)—which is a contrastive focus construction—such a sentence with the copula *shi* is acceptable. That is to say, the copula *shi* is not allowed before a verb-like predicative phrase unless such a phrase is focused.

These facts seem to be contradictory to the assumptions made in the pseudo-slucing analysis. The analysis claims that the occurrence of the copula *shi* in predicative *wh*-phrases is optional, while (21) shows that in a normal copulative sentence containing the *wh*-phrase, the occurrence of the copula *shi* is obligatory; moreover, the analysis also claims that the copula *shi* is an emphatic marker with predicative *wh*-phrases, while (22) shows the occurrence of the copula *shi* is either banned if there is another predicate already or is used as the focus marker which is a variation of the *shi...de* cleft construction.

2.2.2 The Focus-Movement-and-PF-deletion Analysis

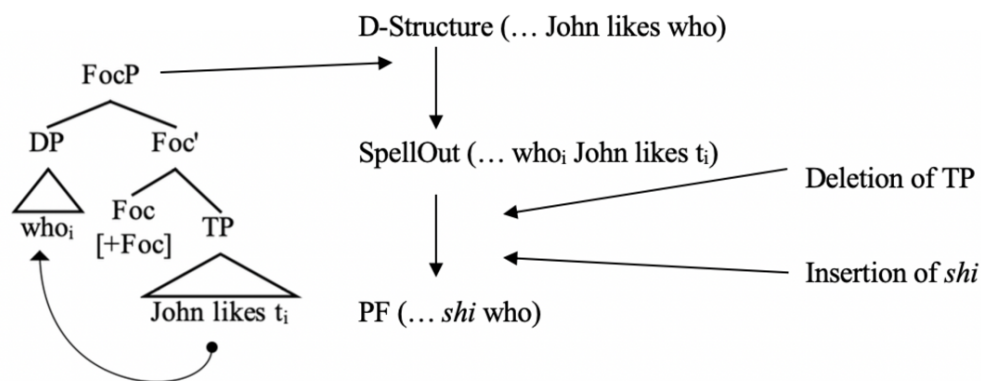
The focus movement analysis proposes that compared to English sluicing, which is fed by *wh*-movement, Chinese sluicing can be fed by focus movement. It is proposed that there is an overt focus movement which results in the fronting of the *wh*-phrase in Chinese sluicing constructions (Wang and Wu 2006). Such a movement, triggered by the purpose of focusing, moves the *wh*-

¹⁶ There should be a phonological accent assigned to those words in uppercase in order to make such a construction acceptable.

phrase to SpecFocP (Rizzi 1997), resulting in a similar environment as the one found in English sluicing, therefore can feed ellipsis straightforwardly, as illustrated in (23).

- (23) a. ..., *dan wo bu zhidao shi* [_{FocP} *shei*_i [+Foc] [*John xihuan t_i*]]
 ..., but I not know COP [_{FocP} *who*_i [+Foc] [*John likes t_i*]]
- b. ..., *dan wo bu zhidao (shi)* [_{FocP} *shenmeshihou*_i [+Foc] [*John t_i likaile fangzi*]].
 ..., but I not know COP [_{FocP} *when*_i [+Foc] [*John t_i left the house*]]

As assumed in this analysis, the copula *shi* is the focus marker which is PF-inserted in front of the *wh*-remnant. The FocP is headed by a null head which is [+Foc], and the focused element (i.e., the *wh*-phrase) is located at SpecFocP in order to satisfy the Spec-Head relation. Thus, the copula *shi*, which is assumed to only introduce the focus projection, is claimed to be optionally inserted at PF after deletion, as illustrated below:



[_{CP} *shi* [_{FocP} *who*_i [+Foc] [_{TP} ~~*John like t_i*~~]]].

However, this PF-insertion approach suffers from many problems. First, it violates the “no return to the lexicon” idea¹⁷ (Chung 2006) as noted in Wei (2009). Second, it is not clear where the copula *shi* is inserted to. Even beyond these arguable issues, this approach would suffer from a further problem: what motivates such an insertion?

Since the occurrence of *shi* is taken to be a result of PF-insertion, a possible motivation for the insertion should be referred to in phonology instead of syntax. The analysis assumes that only the occurrence of *shi* with argument *wh*-phrases *shei* ‘who’ and *shenme* ‘what’ is obligatory—because after deletion, these *wh*-phrases will be too short to stand alone in a clause.

However, such an assumption is not very convincing. It is true that in Chinese, the *wh*-phrases *shei* ‘who’ and *shenme* ‘what’ have fewer syllables than most of the other ones do—only one or two syllables, and possibly adding another morpheme does contribute for a better articulation, and the language chooses *shi* to be such a morpheme. But there is no evidence that something of this kind really happens. Rather, there is evidence that a short *wh*-phrase, although it is not an argument here, is able to occur in a sluicing-like construction without the copula *shi*, as exemplified in (24).

(24) *John shuo mingtian yao kaihui dan wo bu zhidao jidian.*

John say tomorrow will meet but I not know **when**

‘John says tomorrow (we) will have a meeting, but I don’t know when.’

¹⁷ A lexico-syntactic requirement proposed for sluicing that the set of the lexical items (except for the moved *wh*-phrase) from which the sluice is constructed must be a subset of the lexical items from which the antecedent CP is constructed (see discussion in Chung 2006).

Thus, the presence of the copula *shi* cannot be predicted accurately with such a phonological motivation suggested by the PF-insertion approach. Another less obvious challenge for this approach is that it assumes that the *wh*-phrase is moved by focalization. However, it is not clear if there is such a focus movement in Chinese (Li and Wei 2017), as focalization in Chinese does not necessarily involve movement, thus it is not clear the [+Foc]-feature is strong enough to trigger *wh*-movement.

2.2.3 Other Discussions

Based on certain pieces of evidence, Song (2016) proposes an argument to support the focus-movement-and-PF-Deletion analysis: parallel behaviors between the sluicing-like constructions and the *wh*-fronting constructions¹⁸ in Chinese. It shows that the sluicing-like constructions and the *wh*-fronting constructions share three parallel behaviors, namely the same distribution of the copula *shi* (which can be better described with simplex-complex asymmetry), the exhaustive identification (which refers to the focalization) and the impossibility with the *wh*-phrase *zenme* ‘how’. These parallel distributions speak in favor of the deletion analysis and suggest that it is the *wh*-fronting construction that is involved in the sluicing-like construction and creates the environment for the deletion process.

Such a suggestion, however, seems to shift all the questions raised with respect to sluicing constructions to *wh*-fronting constructions, including the occurrence of the copula *shi*: if there is a copula *shi* involved in the *wh*-fronting process, there should be a copula *shi* found in the corresponding sluicing construction; also, the motivation for *wh*-movement, namely whatever

¹⁸ It is argued that in Chinese, a *wh*-phrase is able to move to the SpecFocP position through *wh*-fronting, in order to license the Identification Focus (also called contrastive focus or narrow focus) (Cheung 2008,2014).

triggers the movement of *wh*-phrases in *wh*-fronting constructions would also be the trigger in sluicing-like constructions. However, such a claim only links the sluicing patterns with the *wh*-fronting patterns. It does not clarify the motivation for the occurrence of the copula *shi*, namely why a simplex *wh*-phrase must need the copula *shi*, and why a complex *wh*-phrase is able to undergo *wh*-fronting either with or without the copula *shi*. In fact, this is a problem which is still mysterious about the *wh*-fronting construction in Chinese, and whether the *wh*-fronting in Chinese would have to be also triggered by [+Foc] is not a concrete conclusion yet.¹⁹

Furthermore, such an assumed distribution is also challenged by the evidence that the two simplex *wh*-phrases are actually able to appear at a left peripheral position without the copula *shi*, as shown in (25).

- (25) a. *ni hui xuan shei?*
 you will choose who
 ‘Who will you choose?’
- b. *zhe san ge xuesheng, shei ni hui xuan ti?*²⁰
 these three student who you will choose
 ‘Among these three students, who will you choose?’

If the *wh*-phrase in (25b) is fronted through the *wh*-fronting process (i.e., if *shei* ‘who’ is not base-generated in its position at Spell-Out), it will do so against the assumption in the focus-movement analysis that the simplex *wh*-phrases need the obligatory copula *shi* to move to

¹⁹ In fact, *wh*-fronting is analyzed as a type of topic structure in the literature (Pan 2006; Paul 2014 and many others), while there are also scholars who argue for a focus account (Cheung 2014). Further discussion is provided in later chapters.

²⁰ (25a) is the normal question where *shei* ‘who’ stays in-situ, while (25b) is only acceptable when more information is provided in the context, for example, in (25b), a list of limited choices that links to the *wh*-phrase *who*. Additional discussions of this point are provided in later chapters.

clausal-periphery. If such *wh*-fronting is caused by [+Foc]-feature, (25b) shows that the simplex *wh*-phrase *shei* ‘who’ is acceptable at the clause-periphery by itself, thus one would wonder why the lack of the copula *shi* is acceptable in the *wh*-fronting construction but is unacceptable in the sluicing-like construction. If the *wh*-fronting process is not caused by [+Foc]-feature, then one would wonder what the trigger could be instead, and whether it could be the trigger in the sluicing-like construction as well. In fact, I propose that rather than being moved through focalization, the *wh*-phrase in (25b) is actually an instance of topicalization in Chinese, which is also the source of sluicing. In chapter 4, I will show the reason why an analysis based on a topic construction is a better choice than one based on a focus construction.

2.3 Problems with Current Approaches

Both analyses suffer from problems of accurately accounting for the distribution of the copula *shi* in Chinese sluicing-like constructions. In particular, the pseudo-sluicing analysis successfully predicts the presence of the copula *shi*, while meeting some difficulty with respect to explaining the lack of the copula *shi* in certain situations. On the other hand, the focus movement-and-PF deletion analysis is only problematic with respect to accounting for the presence of the copula *shi* but works fine when there is no copula *shi*. Comparing their strengths and weaknesses, and more importantly, the type of constructions that they work better with, it seems that these two analyses actually have the potential to cooperate together. Thus, I argue for a third possibility that combines both analyses.

I agree that in most cases, Chinese does not have genuine sluicing but rather pseudo-sluicing, which asks for an obligatory copula *shi*. However, this does not necessarily entail that Chinese cannot have true sluicing as well. In fact, I propose that the constructions without the copula *shi*

are not derived from pseudo-slucing but rather from a PF-deletion process which is fed by topicalized constructions. I will show that by claiming that PF-deletion is fed by topicalization rather than focalization, the pseudo-slucing analysis and the PF-deletion analysis will be able to account for different types of sluicing-like constructions without overlapping, namely the ones with the copula *shi* and the ones without the copula *shi*.

My evidence comes from the sloppy identity cases found in Chinese sluicing-like constructions. I will show that sloppy identity is only accessible with constructions without a copula *shi* (the so-called “true sluicing”). As sloppy identity is always argued to be related to the PF-deletion process, it is natural to argue for a PF-deletion analysis for those constructions.

To state my main concerns and questions here: There are two ways proposed to account for the occurrence of the copula *shi*. One is predication (pseudo-slucing analysis), and another is PF-insertion (PF-deletion analysis). Both approaches distinguish the occurrence of the copula *shi* as obligatory versus optional for different reasons, yet neither of them can accurately predict the occurrence of the copula *shi*. No matter whether the occurrence of the copula *shi* is related to the predication or complexity properties of the *wh*-phrases, it is unclear what enables those *wh*-phrases to have such a property—obviously, neither the argument-adjunct nor the simplex-complex distinction can accurately describe which *wh*-phrases have such a property, and which do not. Even if the *wh*-phrases with such a property do have an optional choice of the copula *shi*, it is still questionable whether it is safe to ignore the potential semantic and syntactic differences between constructions with and without a copula *shi*.

Here I propose, rather than trying to put all sluicing-like constructions under one single analysis and looking for additional explanations to account for the tricky copula *shi*—which is hard and

controversial—another way is to divide the constructions based on the occurrence of the copula *shi* and look for different approaches to account for different types of constructions. An added benefit of this approach is the fact that it draws a natural distinction between constructions with and without the copula *shi*, as these constructions clearly reveal semantic differences which are obvious under sloppy identity interpretations. I will show that there is, indeed, a need for such a distinction.

Chapter 3 Sloppy Identity in Chinese Sluicing

Through the discussion of the sloppy identity in Chinese sluicing-like constructions, this chapter considers the nature of those constructions: what are their syntactic derivations? By adding new data concerning sloppy identity, I demonstrate the limitations of the two existing analyses beyond what is mentioned in the previous chapters and how the sloppy reading may or may not be possible with the occurrence of the copula *shi*. At the end of this chapter, I advocate for a new account along the lines proposed, in part, by both analyses.

3.1 Interpretations with a Sloppy Reading

3.1.1 Distribution

Sloppy readings are observed in Chinese sluicing constructions. Scholars (Wei 2004; Wang and Wu 2006) discovered that sluicing constructions with adjunct *wh*-phrases like *weishenme* ‘why’ are able to yield sloppy readings, while sloppy readings are never found in sluicing constructions with argument *wh*-phrases. See examples in (26).

(26) a. *John zhidao ziji weishenme bei ma, Bill ye zhidao weishenme.*

John know self why is blamed Bill also know **why**

‘John knows why he is blamed, and Bill also knows why he is blamed.’ (strict/sloppy)

b. *John zhidao ziji da le shei, Bill ye zhidao shi shei.*

John know self hit Pst who Bill also know COP **who**

‘John knows who he hit, and Bill also knows who John hit.’ (strict/*sloppy)

Note that such a description does not refer to the occurrence of the copula *shi* at all. Based on the unreliability of the argument-adjunct distinction mentioned above, one may predict that such a description is inaccurate. This is evidenced by (27) in which the argument *wh*-phrase *shenme-ke* ‘what class’, as well as adjunct *wh*-phrases, is also found in sluicing-like constructions that have a sloppy reading.

(27) *yingyu laoshi zhidao ta jiang shenme-ke, dan shuxue laoshi bu zhidao shenme-ke.*

English teacher know he teach **what-lesson**, but math teacher not know **what-lesson**.

‘The English teacher knows what lesson he teaches, but the math teacher doesn’t know what lesson.’

Clearly, using the argument-adjunct distinction is insufficient to describe the distribution of sloppy identity interpretations. Besides, there is another piece of evidence shows that the copula *shi* plays an important role in the strict and sloppy identity interpretations. Namely, wherever the copula *shi* occurs, the sloppy identity is unavailable. Consider the following sentences in (28).²¹

(28) a. *John zhidao ta weishenme bei ma, Bill ye zhidao weishenme.*

John know he why is blamed Bill also know **why**

²¹ The readings reported here are based on the judgments of 6 native speakers with no knowledge of linguistics. All of them have the primary intuition of the strict reading for (a), 4 of them have the sloppy reading for (b), and all of them have the strict reading for (c). When being asked for the other reading respectively, they reply as “understandable”. Similar observations are also mentioned in Wei (2009) where he notes the possibility of such two sentences (e.g., 28b and 28c) to be derived from two different constructions. However, unfortunately, no further discussion follows up.

‘John knows why he is blamed, and Bill also knows why he is blamed.’ (strict preferred)

- b. *John zhidao ziji weishenme bei ma, Bill ye zhidao weishenme.*

John know self why is blamed Bill also know **why**

‘John knows why he is blamed, and Bill also knows why he is blamed.’ (sloppy preferred)

- c. *John zhidao ziji weishenme bei ma, Bill ye zhidao shi weishenme.*

John know self why is blamed Bill also know COP **why**

‘John knows why he is blamed, and Bill also knows why he is blamed.’ (strict only)

Comparing the examples in (28), while the use of the pronoun *ta* “he” results in a strict reading preference (cf. 28a), and the use of *ziji* “self” results in a sloppy reading preference (cf. 28b), both strict and sloppy readings are available in (28a) and (28b). However, although the only difference between (28b) and (28c) is the occurrence of the copula *shi*—which is assumed not to affect the meaning at all in previous studies, only the strict reading is acceptable in (28c).

These differences, I believe, hint that the ability to yield sloppy readings is less likely to be related to the *wh*-remnant but is more likely to be related to the occurrence of the copula *shi*. One cannot consider the distribution of the copula *shi* and the distribution of sloppy identity as independent from each other. Moreover, if it can be established that the occurrence of the copula *shi* in Chinese sluicing-like constructions is related to the ability of yielding sloppy readings of such constructions, this would then indicate that one must distinguish between constructions with and without the copula *shi*, like the two similar sentences (28b) and (28c). Simple considerations of the occurrence of the copula *shi* being either obligatory or optional are insufficient to explain

the different preferred readings between (28b) and (28c)—the impossibility of sloppy identity in (28c) is not predicted with those established analyses.

In the following sections, I will first discuss the key factors contributing to the sloppy identity reading in Chinese sluicing-like constructions and then discuss the difficulties faced by the two existing analyses in addition to those that I have pointed out earlier. Then I will argue for a combination of the pseudo-sluicing analysis and the PF-deletion (sluicing) analysis that would successfully predict the strict/sloppy readings in Chinese sluicing-like constructions.

3.1.2 Sloppy Identity with *Ziji* ‘self’

Admittedly, the judgments on strict/sloppy readings are not always clear-cut or universally agreed on by native speakers. But one cannot deny that both strict and sloppy readings are available for the examples which contain *ziji* ‘self’. I believe such flexibility stems from the nature of the anaphor *ziji* ‘self’. The Chinese anaphor *ziji* ‘self’ is actually regarded as not only a reflexive but also as a logophor, at least in some instances (Huang, Li and Li 2009). Given Binding Theory, an anaphor is expected to be bound in its binding domain but a pronoun to be free in its binding domain. Chinese *ziji* ‘self’ acts just like normal reflexives that need to be bound in their binding domains (cf. 29a) but also functions like a pronoun which is free in its binding domain (cf. 29b).

- (29) a. *Mary_i xihuan ziji_{i/*j}.*
 Mary like self
 ‘Mary likes herself.’
- b. *Mary_i shuo John_j xihuan ziji_{ij}.*
 Mary say John like self

‘Mary says John likes her/himself.’

Huang, Li and Li (2009) propose that when acting like a pronoun, *ziji* ‘self’ should not be viewed as a reflexive anymore but actually a logophor—a special kind of anaphoric expression which is oriented toward the matrix subject as the pivot of the embedded clause. A sentence like (30b), as indirect speech, is actually derived from direct speech as shown in (30a):

(30) a. *Mary shuo, “John xihuan wo”.* → b. *Mary shuo John xihuan ziji.*

Mary say John like me

Mary say John like self

‘Mary says, “John likes me”.’

‘Mary says John likes Mary.’

Under Kuno’s analysis of “direct discourse complementation” (1972), during the transformation from a direct discourse to an indirect one, the pronouns are transformed, too. Thus, *ziji* ‘self’ in (30b) is actually the result of transforming the first-person pronoun *wo* ‘me’ in (30a). As a consequence, *ziji* ‘self’ has the same function as *wo* ‘me’ in the direct discourse—to refer to the speaker, rather than being the reflexive anaphor that needs to be bound by the local antecedent *Mary*.

By positing these two functions for *ziji* ‘self’ in Chinese—one as being the reflexive and one as being the logophor that always points back to the pivot, the different readings preferred by speakers with (28b) can be explained. My assumption is that speakers who take *ziji* ‘self’ as a reflexive prefer a sloppy identity reading as they should expect the reflexive to be bound locally, while speakers who take *ziji* ‘self’ as a logophor will prefer a strict reading as they find *ziji* ‘self’ should refer to the pivot, that is the matrix subject in that case. This assumption also provides a

plausible account for the speakers' attitudes that they do find the other reading besides their first impression to be okay—simply because they also accept the other function of *ziji* 'self'.²²

3.1.3 C-commanding and Lexical Identity

Chinese sluicing also observes the c-commanding property which requires the relating pronoun to be c-commanded by its antecedent in order to have the sloppy identity. As shown in (31), when the pronoun *ta* 'he' is not c-commanded by its antecedent *John*, the sloppy reading fails to emerge.

- (31) *John de mama zhidao ta weishenme xihuan shuxue, Bill de mama ye zhidao weishenme.*
 John's mother know he why like math, Bill's mother also know why
 'John's mother knows why he likes math, and Bill's mother knows why too.'
 (strict/*sloppy)

Meanwhile, to have a sloppy identity the construction must contain an overt *wh*-correlate (i.e., the *wh*-phrase in the antecedent clause), and the *wh*-correlate should be "lexically" identical to the *wh*-remnant (i.e., the *wh*-phrase in the elided clause). Such identity relation is observed cross-linguistically (see discussion in Wei 2009). As exemplified below, the sloppy reading is not available if the construction lacks an overt *wh*-correlate (cf. 32a) or if the *wh*-correlate and the *wh*-remnant are not lexically identical (cf. 32b).

²² I am not sure if speakers can tell whether it is an anaphor or a logophor when they are confronted with *ziji*. But I do believe they are able to tell the difference: I would imagine myself to clarify such ambiguity by replacing *ziji* with either a pronoun or a clear reflexive by adding an immediate antecedent before *ziji*, for example:

"Mary say John like self"

1. Oh, you mean "Mary say John like her?"

2. Oh, you mean "Mary say John like John-self/ he-self?"

- (32) a. *John xihuan ziji chifan, wo bu zhidao **weishenme**.* (strict/*sloppy)
 John like self eat meal, I not know **why**
 ‘John likes eating by himself, and I don’t know **why**.’
- b. *John zhidao ziji xihuan kan **shenme-shu**, wo bu zhidao **weishenme**.* (strict/*sloppy)
 John know self like read **what-book**, I not know **why**
 ‘John knows **what book** he likes to read, but I don’t know **why**.’

By contrast, when the above requirements are satisfied, both strict and sloppy readings are provided regardless of the argument-adjunct status or the predicative-non-predicative status of the *wh*-phrases—*ji-dian* ‘what-time’ is an adjunct in (33a), and *shenme-shu* ‘what-book’ is an argument in (33b); while *ji-dian* ‘what-time’ seems to be predicative, but *shenme-shu* ‘what-book’ should be non-predicative.

- (33) a. *John zhidao ziji yinggai **ji-dian** qushangke, Bill ye zhidao **ji-dian**.* (strict/sloppy)
 John know self should **what-time** go to class, Bill also know **what-time**
 ‘John knows when he should go to class, and Bill knows when too.’
- b. *John zhidao ziji yinggai kan **shenme-shu**, Bill ye zhidao **shenme-shu**.* (strict/sloppy)
 John know self should read **what-book**, Bill also know **what-book**
 ‘John knows **what book** he should read, and Bill knows **what book** too.’

3.2 Current Analysis for the Sloppy Identity in Sluicing

3.2.1 The Pseudo-sluicing Analysis

Under the pseudo-sluicing analysis, movement and deletion are excluded by definition since everything is base-generated; the PF-deletion analysis for sloppy identity is therefore naturally

ruled out. In fact, this analysis, with *pro* being its core, is challenged by the occurrence of sloppy identity. Being the silent counterpart of an overt pronoun (Carnie, 2012), *pro* occurs when the DP is phonologically dropped as long as its reference can be recovered from the context. That is to say, *pro* only serves for syntactic reasons—e.g., to function as the null subject in the sluicing-like constructions, but what it refers to is already determined and clear from the context.

Chinese is a discourse *pro*-drop language in which arguments are commonly omitted when they are provided in the context²³, as exemplified in (34).

(34) John: *wo mingtian yao zuo feiji*

I tomorrow will take the flight

‘I will take the flight tomorrow.’

Bill: *(ni) qu nali?*

(you) go *where*

‘Where do you go?’

Recall the pseudo-sluicing analysis in which a structure of [*pro* (*shi*) *wh*-phrase] is base-generated. Adams and Tomioka (2014) propose that this *pro* is an E-type²⁴ pronoun when it occurs with argument *wh*-phrases and a sentential pronoun when it occurs with adjunct *wh*-phrases. That is to say, as an E-type *pro*, the *pro* is analyzed as a definite pronoun that is linked to an indefinite NP—its antecedent; by contrast, as a sentential *pro*, the *pro* functions as an event-denoting pronoun which can refer to an event, a proposition, or any overt sentences (Adam

²³ There are some arguments in the literature attempting to show that the null object in Chinese is not a case of *pro*, but this argument does not affect the discussion here because under the [*pro* (*shi*) XP] structure, only the subjects are involved.

²⁴ Provided by Heim and Kratzer (1998), the mechanism of an E-type pronoun will be: i) there is an implicit definite determiner; ii) it also comes with indexed anaphora of a predicate type, whose semantic content is pragmatically recovered.

and Tomioka 2014; Wei 2006). Therefore, the example (28b) repeated in (35) here, should be analyzed as below:

(35) *John zhidao ziji weishenme bei ma, Bill ye zhidao pro (shi) weishenme.*

John know self why is blamed, Bill also know *pro* (COP) why.

Since *weishenme* ‘why’ is an adjunct *wh*-phrase, a sentential *pro* should be expected here. The sentential *pro* has the ability to denote the event provided by the preceding sentence. More specifically, the sentential *pro* is identified by a topic that is established in the preceding discourse; such a topic serves as the antecedent and is restricted by the locality conditions governing topicalization (Li and Wei 2017). Therefore, the topics we can establish from the preceding clause for *pro* here can be:

- i) an event such that “John is blamed”, described by the embedded clause.
- ii) an event such that “John knows himself is blamed”, described by the matrix clause.²⁵

The problem here is, no matter which of these two events *pro* refers to, *pro* only has the ability to refer to the original event, but is unable to create a new event because the semantic denotation process does not happen at syntax, as illustrated below:

$\|pro\| = \text{event [John is blamed]}$

$*pro \rightarrow \text{[self is blamed]}$

²⁵ I doubt if such a reading is truly acceptable. I prefer to assume that it is not. Thus, I believe there should be some more constraints on the identification procedure. However, this issue does not affect my analysis here, thus I will not enter into detailed discussions here.

One would not expect *pro* to copy the clause [self is blamed] as the identification process of *pro* is different from the syntactic LF-copying processes where the structure-copying processes are considered. Therefore, such an analysis is problematic in explaining sloppy identity interpretations.

Adams and Tomioka (2012) argue that a sloppy reading does not necessarily result from deletion/ellipsis but is also accessible with the pronouns—as those famous “paycheck” examples. It is true that sloppy readings can be found inside pronouns; however, if that is the case, a problem of semantic type mismatch may arise here. Jacobson (2000) proposes that a “paycheck” pronoun is an ordinary free pronoun which picks up a function of type $\langle e, e \rangle$ rather than an individual. Roughly, the meaning of a “paycheck” pronoun contains a variable x that is not bound by the corresponding antecedent variable x .²⁶ The sentential *pro* here, however, is more like a type $\langle t \rangle$, as it denotes the meaning of a sentence (typical type $\langle t \rangle$).

On the other hand, if one tries to relate the *pro* to “paycheck” pronouns, the cases with the E-type *pro* should be more likely to produce sloppy readings rather than the cases with the sentential *pro* considering their different properties. However, the fact is that in most cases with the E-type *pro*, no sloppy reading is available. Therefore, I suggest that the pseudo-sluicing approach is unable to explain the occurrence of sloppy identity, which actually supports my assumption that all the constructions with the copula *shi* are derived from pseudo-sluicing and are not accessible to sloppy interpretations.

²⁶ Here is an example of “paycheck” pronoun:

The man_i who put [his_i paycheck] in the bank is wiser than the man_j who put [it] in the casino. Referring to “the paycheck of the second man_j”, the pronoun *it* is argued to contain the sloppy identity inside it, namely *it* refers to “his_j paycheck” in which *his_j* is co-indexed with the local antecedent “the man_j”. Following Sag (1976), the coreferential pronouns are replaced by a bound variable x in logical forms, thus the first DP [his paycheck] can be written as [x’s paycheck], while [it] is written as [x’s paycheck] too. The sloppy reading is derived when the second variable x (contained in [it]) does not refer to the same referent as the first variable x .

3.2.2 Focus-movement-and-Deletion Analysis

The focus-movement-and-deletion analysis, paralleling the PF-deletion analysis, suggests that the sluiced clause should have a fully structured syntactic representation. Under such an assumption, the PF-deletion account for the sloppy identity applies naturally.

- (36) *John zhidao ziji weishenme bei ma, Bill ye zhidao weishenme (~~ziji bei ma~~).*
 John_i know self_i why is blamed, Bill_j also know why (~~self_i is blamed~~)
 ‘John_i knows why self_i(=he) is blamed, and Bill_j knows why self_j(=he) is blamed too.’

As illustrated in (36), whether *ziji* ‘self’ is recognized as a logophor or a reflexive anaphor, it can be bound by its local antecedent, resulting in the sloppy reading. But this approach will fail to explain why the argument *wh*-phrase type of sluicing does not yield sloppy readings (cf. 37a), and it will also fail to explain the disappearance of the sloppy reading caused by the occurrence of the copula *shi* as discussed above.

- (37) a. *John zhidao ziji chile shenme, Bill ye zhidao shi shenme.*
 John know self ate what, Bill also know COP what
 ‘John knows what self(=he) ate, Bill also know what John ate.’ (strict)
 ‘John knows what self(=he) ate, Bill also know what self(=he) ate.’ (*sloppy)
- b. (Before PF) *John zhidao ziji chile shenme, **Bill** ye zhidao shenme_i (**ziji** chi le t_i)*
 John know self ate what, **Bill** also know what **self** ate t_i,

By the PF-Deletion analysis, (37a) should have a syntactic structure represented in (37b) PF—the TP-deletion and *shi*-insertion have not happened yet. Having the same structure as (36), (37a) is supposed to be able to have a sloppy interpretation as well as a strict one. However, against

expectations, only the strict reading is available here. Such an unexpected result emerges with the adjunct *wh*-phrase, too, when the copula *shi* occurs (which is also claimed to occur at PF).

These wrong predictions again show that the sloppy reading is impossible when the copula *shi* is involved. Therefore, we shall not ignore the fact that the copula *shi*, or more accurately, the [pro *shi wh*] structure is responsible for the disappearance of the sloppy readings, and the occurrence of the copula *shi* cannot be considered as the result of a PF-insertion process. These facts also point to an alternative viewpoint which distinguishes the constructions with and without the copula *shi* in nature: they should be derived differently.

3.3 Call for a New Account

To summarize my discussions so far: I have discovered that sloppy identity in Chinese sluicing-like constructions only occurs when the construction does not contain the overt copula *shi*. Based on this fact, I argue that the copula *shi* plays an important role with respect to the access to the sloppy identity reading, namely only constructions without the copula *shi* are accessible to sloppy readings. For a very long time, scholars have had problems with respect to capturing the distribution of the copula *shi*, not only because of the difficulty with respect to generalizing such a distribution but also because no consensus can be drawn among native speakers. Hence, I propose that rather than using the argument-adjunct asymmetry or the simplex-complex asymmetry to describe the distribution, a copula and null-copula division is more consistent.

With such a division, I propose that sluicing-like constructions in Chinese are divided into two types, namely the one with an overt copula *shi* (i.e., pseudo-sluicing) and the one without the copula *shi* (i.e., sluicing). This classification is proposed to correspond to two distinct ways of derivation. As a result, each construction, namely pseudo-sluicing which contains the base-

generated [*pro shi wh-*] structure, and sluicing which is derived from PF-deletion, has different properties: the sloppy identity is not available at all in pseudo-sluicing but is accessible in sluicing.

Also, I argue that once such a division is made, one no longer needs additional statements to account for the presence or the absence of the copula *shi*; therefore, a strong version of the pseudo-sluicing analysis should be maintained for those instances that the copula *shi* is obligatory. As for the PF-deletion analysis, I propose, the deletion process is better fed by topicalized constructions rather than focalized ones since in Chinese focalization does not necessarily cause movement of elements, and a phrase moved long distance is characterized as a topic rather than a focus in the literature (Shyu 1995; Paul 2014 etc.). By comparing focalized and topicalized constructions in Chinese, I will offer some independent evidence that supports my assumption that these *wh*-phrases are indeed topicalized in the following chapter 4.

Chapter 4 Revision of the PF-Deletion Analysis

In this chapter, I move on to explore the possible connections between sluicing, *wh*-fronting, and topicalization. Specifically, I look at the ways *wh*-expressions at the left-clausal periphery correspond to the sluicing constructions. With respect to the properties of the PF-Deletion Analysis, I show how the topic construction can feed the deletion better than the focus construction, while at the same time, I provide a test of the topic status of the *wh*-expressions in sluicing.

4.1 Wh-phrases in Topicalization

As I have already made the distinction between constructions with and without the copula *shi* in Chinese, in the following discussion, I will use “pseudo-sluicing” to refer to constructions with the copula *shi*, and “sluicing” to those without the copula *shi*.

It has been shown in the literature that there exists syntactic movement of *wh*-phrases in Chinese, and the *wh*-questions with overtly moved *wh*-expressions and *wh*-questions with in-situ *wh*-expressions illustrate a basic semantic difference, namely topicalization in the former but not the latter (Wu 1999). However, only certain types of *wh*-phrases are allowed in topic position in

Chinese, namely Discourse-linked (D-linked) *wh*-phrases²⁷ and *wh*-phrases that can provide a D-linked reading. By contrast, plain *wh*-phrases²⁸ can only stay in-situ (Paul 2014). *Wh*-phrases found in topic position in Chinese include *na-X* ‘which-X’, *shenme-X* ‘what-X’; plain *wh*-phrases are *shei* ‘who’ and *shenme* ‘what’. In addition, I propose, many other *wh*-phrases in Chinese, unlike their English counterparts, should be analyzed as D-linked *wh*-phrases as well. For example, *wh*-phrases like *shenme-shihou* ‘when’ (lit. ‘what-time’), *wei-shenme*²⁹ ‘why’ (lit. ‘for-what (reason)’), *ji-dian* ‘when’ (lit. ‘what.number-o’clock’) and some others. These *wh*-phrases are structurally complex, questioning one or several items out of a set, and are found at the left periphery as well. Examples are given in (38).

- (38) a. (which-X) *na ge ren,* *ni xihuan?*
 which person you like
 ‘who do you like?’
- b. (who) **shei,* *ni xihuan?*³⁰
 who you like?
 ‘who do you like?’
- c. (what-X) *shenme yifu,* *ni xihuan?*

²⁷ A D-linked *wh*-phrase refers to a complex *wh*-phrase that questions items out of a given set as “which (of the) X” (Pesetsky 1987).

²⁸ A plain *wh*-phrase is the *wh*-phrase that has no such presupposed set as a D-linked *wh*-phrase. This does not correspond to any overt property, such as weight, but is related to the D-linking meaning only.

²⁹ *Weishenme* ‘why’ is interchangeable in the form of *wei-le-shenme* ‘for-ASP-what’ in Chinese.

³⁰ Yuan and Dugarova (2012) show that such a sentence is acceptable only if there is a given set from the context.

what clothing you like

‘what (type) of clothing do you like?’

d. (what) **shenme*, *ni xihuan?*

what you like

‘what do you like?’

e. (what-time) *shenme shihou*, *ni xiang qu Beijing?*

what time you want go Beijing

‘when do you want to go to Beijing?’

f. (for-what) *weishenme*, *ni xiang qu Beijing?*

for what you want go Beijing

‘why do you want to go to Beijing?’

Those *wh*-phrases which are permitted in topic position are all acceptable in sluicing. On the other hand, the plain *wh*-phrases that are not allowed in topic position are also not found in sluicing. Based on that shared distribution, it is plausible to connect these topicalized constructions with sluicing, that is, as long as the *wh*-phrase can occur in the topic position and form a topic construction, such a construction can feed the PF-deletion in a sluicing construction. Comparing the sluicing constructions of (39a) and (39b), where the preceding clauses are the same, namely ‘John does not eat something’.

(39) a. *John bu chi mougedongxi, dan wo bu zhidao shenme-dongxi.*

John not eat something, but I not know what thing

‘John doesn’t eat something, but I don’t know what.’

b. **John bu chi mougedongxi, dan wo bu zhidao shenme.*

John no eat something, but I not know what

‘John doesn’t eat something, but I don’t know what.’

We see that (39a) is acceptable as the *wh*-remnant is *shenmedongxi* ‘what-thing’—a *wh*-phrase that is argued to have D-linked meaning and is fine to occur in topic position as shown in (40a). We further see that the very similar case of (39b) is unacceptable, while the only difference is that the *wh*-phrase in (39b) is the plain *wh*-phrase *shenme* ‘what’—a phrase that is unacceptable in topic position, as illustrated in (40b).

(40) a. [_{TopP} *shenmedongxi*_i [_{TP} *John bu chi t_i*]].

what thing John not eat

b. *_{[TopP} *shenme*_i [_{TP} *John bu chi t_i*]].

what John not eat

The examples in (39) and (40) show clearly how the TopPs have the potential to be involved in sluicing. Next, I will show why it should be a TopP rather than a FocP.

4.2 Focalization vs Topicalization

Deriving Chinese sluicing-like constructions via focus movement meets some major challenges. Before discussing those, I will describe some properties of focalization in Chinese. Also, I want to clarify that based on my analysis, the PF-deletion analysis only accounts for sluicing cases

where the copula *shi* is assumed not to occur. Below are examples of focus constructions in Chinese.

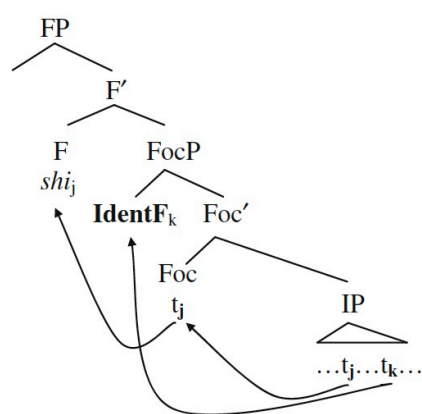
- (41) a. *TA xihuan ni.* (*stress on ta 'he'*)
 he like you
 'HE likes you.'
- b. *mingtian shi XIAWU jianmian.*
 tomorrow COP afternoon meet
 'Tomorrow we will meet in the AFTERNOON.'
- c. *PINGGUO shi wo xihuan *(de).*
 apple COP I like DE
 'I like APPLE.'

First of all, focalization in Chinese does not necessarily ask for an overt marker (cf. 41a), while at the same time, the copula *shi*, which functions as a focus marker here, is indeed found in many focalized constructions (cf. 41b). Considering that sluicing does not involve the copula *shi*, this property of the focus construction is undesirable as it would bring the debate about the copula *shi* back to us. Second, even if the focus marker (e.g., the copula *shi*) occurs in the focus construction, the focused element does not necessarily have to be moved; in fact, the focused element usually stays in-situ, as illustrated in (41b). This fact questions the relation between focalization and *wh*-fronting. Specifically, it questions the claim that the *wh*-expression is motivated to move by [+Foc]-feature. Third, in Chinese, the only way to focalize a postverbal element (e.g., the object) with the copula *shi* is through the cleft *shi...de* construction, where *de* is necessary and the focused element precedes the copula *shi* (cf. 41c). As I mentioned earlier,

the possibility of Chinese sluicing deriving from the cleft construction is ruled out. Thus, this raises concerns about how to front the object *wh*-expressions through focalization.

Knowing that in Chinese any part of the sentence can be focalized through phonological processes, like stressing, one cannot deny the fact that the copula *shi* plays an important role in Chinese focus constructions; however, it cannot occur postverbally (Huang 1982). The copula *shi*, characterized as the focus marker, has certain interpretive properties such that the constituent following it can be interpreted as an Identificational Focus (IdenF). That is, the IdenF is licensed by the copula *shi* (Huang 1982; Cheung 2014).

Cheung (2014) proposes that focalization is able to derive *wh*-fronting and argues for a structure where the copula *shi* and the *wh*-phrase are generated in the same the TP, as illustrated below:



(Cheung 2014)

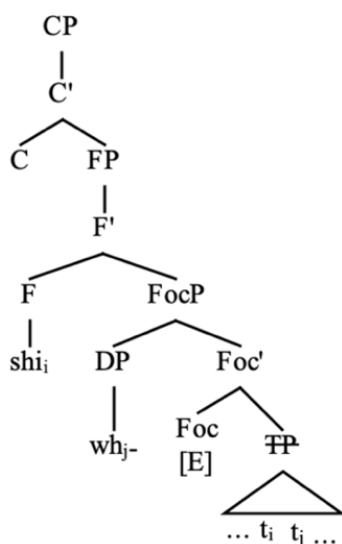
The copula *shi* first moves to the head of FocP in order to be licensed as a focus marker.

Fulfilling the lexicalization requirement³¹ of Foc, the movement of *shi* triggers the movement of

³¹ As claimed in Cheung (2014), although the assumption of the lexicalization requirement of Foc here agrees with Brody's focus theory and the cartographic approach, it is hard to find any empirical evidence for the copula *shi* in Mandarin Chinese for certain reasons, one of them being that *shi* always precedes the FocP. (See discussions in Cheung 2014.)

the *wh*-phrase to SpecFocP—the place where the *wh*-phrase can receive Identification Focus (Cheung 2014). After that, the copula *shi* will move to the head of a higher projection, which is named as FP in Cheung (2014), in order to fulfill the requirement that the copula *shi* needs to c-command the IdenF that it is associated with. After all these steps, a focalized *wh*-fronting sequence is constructed in the form of [_{FP} *shi*...[_{FocP} *wh*-phrase ...]]. As a last step, the copula *shi* can be PF-deleted under certain circumstances.

Recall the discussion about the licensing of the TP-deletion in English sluicing. Assuming that the [E]-feature, instead of encoding [+WH] and [+Q] as in English sluicing, it encodes [+Foc] in Chinese like in Hungarian. To satisfy the phonological requirement of the [E]-feature and the MaxElide constraint, the most plausible place for the [E]-feature to be located should be HeadFocP. Taking a focus structure as the basis for the derivation of sluicing, the structure should be like below:

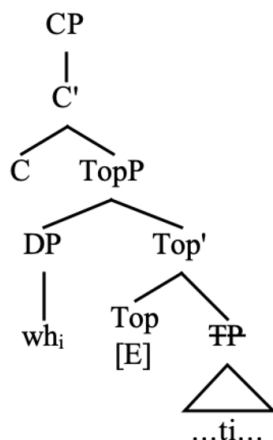


However, constructing such a structure for our present purpose is problematic in at least two respects. First, as the [E]-feature only licenses the deletion of its complement (i.e., the TP), what

will license the deletion of the copula *shi* remains unclear. Also, given that it is assumed to be a head, the movement of the copula *shi* out of the clausal ellipsis site is very uncommon—head movement out of clausal ellipsis site has not been found elsewhere so far (Van Craenenbroeck and Merchant 2012). Second, assuming that the [E]-feature is encoded with the [+Foc]-feature at HeadFocP, it is quite likely that the landing of the copula *shi* in HeadFocP (if there is one) will cause the merging of the copula *shi* and the [E]-feature and therefore would form a head such as *shi*_[E]. If this is the case, it is quite possible that any further moving of the copula *shi* will take the [E]-feature along, thus according to the MaxElide constraint and the phonology of [E], what is expected to be deleted will be the whole FocP instead of the TP; this will result in the undesirable deletion of the *wh*-phrase as well. If this does not happen, there raise two questions: First, can the copula *shi* be able to land in the Head position of FocP as such a position is occupied by an covert head? Second, can the copula *shi* be able to be licensed as the focus marker by [E] as the [+Foc]-feature is encoded to it? If the copula *shi* cannot be licensed as the focus marker successfully for either of the possible reasons, the entire moving process of the *wh*-phrase will not be able to take place. These facts suggest that a focus analysis of the *wh*-fronting derivation is not desirable for the sluicing construction as we expected.³²

By contrast, if we adopt a TopP instead of a FocP, the derivation will be much more straightforward. This is shown below:

³² Here I am not arguing against the focus construction proposed in Cheung (2014) but only that such a focus construction is not desirable as the source for sluicing.



Let's assume that the [E]-feature is located at HeadTopP, encoding the [+Top]-feature, which is also a strong feature in Chinese that has to be checked. The *wh*-phrase, as long as it is qualified to occur in topic position (i.e., being a D-linked *wh*-phrase), can move to SpecTopP to check the [+Top]-feature. After that, with the [E]-feature licensing the PF-deletion, the complement of the HeadTopP (i.e., the TP) will be deleted. It seems that the TopP is a better choice than the FocP for Chinese sluicing in that fewer concerns will be raised with the TopP.

Note that the adoption of TopP entails that sluicing with non-*wh* element should be possible too; this is evidenced by (42).

(42) *Pangxie, ta kending xihuan. Longxia, wo bu zhidao.*

Crab he definitely like shrimp I not know

'Crab—he definitely likes that. Shrimp—I don't know whether he likes that.'

* 'Crab—he definitely likes that. Shrimp—I don't know that.'

In (42), *longxia* 'shrimp' is only taken as the object of the verb *xihuan* 'like' under this context, indicating the existence of the elided TP [he likes t_i] in the second clause.

Another piece of evidence that supports the TopP as involved in Chinese sluicing comes from the positions of the TopP and the FocP. A hierarchy of the topic field and the focus field is generally agreed upon in relevant literature, namely, the Topic Field > Focus Field > TP (Badan and Del Gobbo 2011). Example (43) below shows clearly that in *wh*-fronting constructions, the *wh*-phrase *weishenme* ‘why’ precedes the IdenF *John*.

- (43) *weishenme* [_{FocP} *shi JOHN bangzhule Bill*], *bushi ni*?
why COP JOHN help Pst Bill, not COP you?
 ‘Why it is John who helped Bill, not you?’

Based on the properties of focalization, it is clear that the element following the copula *shi* is the focus, i.e., *John*. And the *wh*-phrase *weishenme* ‘why’ occurs at a position clearly higher than the FocP (or the FP in Cheung (2014)), which is likely to be the topic position. One may argue that it could be the case that the *wh*-phrase *weishenme* ‘why’, given its relatively free position in Chinese, can be base-generated in the higher position. In fact, this is possible, but I argue that this does not really argue against the topic position but more likely questions the type of topic of the *wh*-phrase—whether it is an in-situ topic or a moved topic (Huang, Li and Li 2009; Badan and Del Gobbo 2011). Meanwhile, another example in (44) provides a more solid piece of evidence where the argument *wh*-phrase *nayizhong-shiwu* ‘which kind of food’ also occurs at the left periphery.

- (44) a. [_{FocP} *shi JOHN chile mouyizhong-shiwu_i hui zhongdu, bu shi BILL*].
 COP John eat.ASP some.kind.of-food will poisoned, not COP Bill,
 ‘It is John who will get poisoned if he eats some kind of food, but not Bill,
 b. [_{TopP} *mouyizhong-shiwu_i*, [_{FocP} *shi JOHN chile t_i hui zhongdu, bu shi BILL*].]

some.kind.of-food, COP John eat.ASP t_i will poisoned, no COP Bill,
 ‘Some kind of food, it is John who will get poisoned if he eats that, but not Bill,
dan wo bu zhidao [_{TopP} *nayizhong.shiwu* [_{FocP}...]]
 but I not know which.kind.of-food
 but I don’t know which kind of food.’

The argument *mouyizhong-shiwu* ‘some kind of food’, being the theme of the verb *chi* ‘eat’, must be base-generated within the VP (cf. 44a). Similar to (43), the *wh*-phrase can also occur at the left-peripheral position—a position that is clearly higher than the FocP (cf. 44b). Such a position is most likely to be a topic position referring to the hierarchy relation of TopP and FocP, and the topic status of the argument *mouyizhong-shiwu* ‘some kind of food’ in (44b) can be further tested by adding the so-called pause particles after it, as shown in (45).

(45) [_{TopP} *mouyizhong shiwu*, **ne** [_{FocP} *shi John chile ti hui zhongdu, bu shi Bill*]].

If the phrase *mouyizhong shiwu* ‘some kind of food’ is recognized as the topic in (44b), it is plausible to assume that the *wh*-phrase ‘which kind of food’ in the second clause of (44b) should be located in the topic position as well—through a parallel *wh*-question where the *wh*-phrase is also a topic (cf. 46).³³

(46) [_{TopP} *nayizhong shiwu*, **ne** [_{FocP} *shi John chile ti hui zhongdu, bu shi Bill*]].

what kind of food, ne COP John eat.ASP t_i will poisoned, no COP Bill,

³³ Admittedly, putting a *ne* with the *wh*-remnant in the sluicing construction (44b) is very awkward, as shown below:

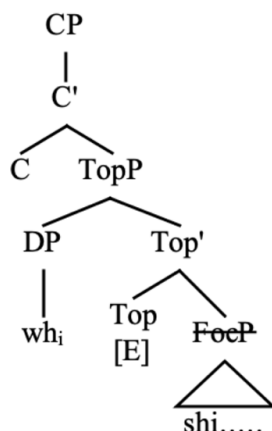
?..., *dan wo bu zhidao nayizhong shiwu ne*.

..., but I not know which kind of food **ne**.

This may question the topic status of such a *wh*-phrase. However, as noted in Paul (2014), the so-called pause particles, such as *a*, *ma*, *ne* and etc. in Chinese, do not form a constituent with the topic. Whether they simply mark a pause or maybe mark the topic is still being debated. Therefore, I assume, a safe claim would be: the topic can be assured by a pause particle following it but cannot be denied even if the occurrence of a pause particle is not favorable.

‘What kind of food, it is John who will get poisoned if he eats that, but not Bill.’

Therefore, a structure for the sluicing construction in (44b) can be illustrated as shown below in which the whole FocP, instead of merely the TP, is deleted. Such a structure also respects the definition of the E-feature and the MaxElide constraint.



4.3 The Exclusiveness Condition Test

An additional piece of evidence to argue that the *wh*-phrase in sluicing is the topic and not the focus comes from the Exclusiveness Condition Test (cf. Szabolcsi 1981; E. Kiss 1998) which is commonly used to distinguish topic and focus by checking their Exclusiveness Condition—the property denoted by the presupposition does not hold for any other entities that are distinct from the focus. Paul (2014) shows that Chinese in-situ topics, as well as topicalized objects, can be told apart from foci with respect to this condition, namely the introduction of an alternative item is only allowed with topics (cf. 47), while the exclusive readings are only obtained with foci (cf. 48).

(47) a. *faguo, fengjing hen hao.*

France, view very good

‘In France, the view is good.’

- b. *meiguo*, *fengjing ye henhao*.

America, view also very good

‘In America, the view is also good.’

- c. #*bu*, *meiguo*, *fengjing henhao*.

No, **America**, view is good.

‘No, in America, the view is good.’

- (48) a. *shi FAGUO*, *fengjing henhao*.

COP France, *view very good*

‘It is in France that the view is good.’

- b. #*ye shi MEIGUO*, *fengjing henhao*.

also COP America, view very good

‘It is also in America that the view is good.’

- c. *bu*, *shi AMERICA*, *fengjing henhao*

No, COP AMERICA, view is good.

‘No, it is in America that the view is good.’

Faguo ‘France’ in (47a) clearly is distinct from *Faguo* ‘France’ in (48a) as they show different attitudes towards the constructions introducing an alternative item (cf. 47b and 48b) and the constructions expressing exclusiveness (cf. 47c and 48c). (47) instantiates the case of topic: the introduction of an alternative item (i.e., *Meiguo* ‘America’) (cf. 47b) for the same situation denoted by (47a) is acceptable; while (47c) is semantically deviant as it implies the exclusiveness

condition through negation. Contrastively, (48) instantiates the case of focus where the introduction of an alternative item (cf. 48b) for the same situation is infelicitous, while the expression that obtains the exclusiveness condition is felicitous (cf. 48c). These differences demonstrate that *faguo* ‘France’ in (47a) is indeed a topic while *faguo* ‘France’ in (48a) is a focus. The same test can be used to convincingly assert the topic status of the *wh*-phrases in (44) as well, as repeated in (49) and (50) below.

- (49) a. *nayizhongshiwu, John bu chi?*
 which kind of food, John no eat
 ‘Which kind of food doesn’t John eat?’
- b. *nayizhong shuiguo John ye bu chi?*
 which kind of fruit, John also no eat?
 ‘Which kind of food doesn’t John eat either?’
- c. *#bu, nayizhongshuiguo, John bu chi?*
 No, which kind of fruit, John no eat?
 ‘No, which kind of fruit doesn’t John eat?’

As illustrated in (49), one can change the question from asking ‘which kind of food’ (cf. 49a) to ‘which kind of fruit’ (cf. 49b) based on the same presupposition that ‘John doesn’t eat something’, that is, alternating the topic is allowed. While one cannot make a felicitous continuation with the expression which tries to ask exclusively about ‘which kind of the fruit’ (cf. 49c). Meanwhile, (50) shows how similar alternation of items fails (cf. 50b) but the exclusiveness condition holds (cf. 50c).

- (50) a. *shi nayizhong shiwu, John bu chi?*

COP which kind of food, John no eat

‘It is which kind of food that John doesn’t eat?’

b. #*ye shi nayizhong shuiguo?*

also it is what kind of fruit

‘Also, it is which kind of fruit?’

c. *bu, shi nayizhong shuiguo.*

no, it is what kind of fruit.

‘No, it is which kind of fruit?’

Going back to the relevance of these observations for sluicing, with the same presupposition that the one denoted by (51a), the introduction of an alternative *wh*-phrase is allowed (cf. 51b and 51b’) while the exclusiveness condition fails to hold (cf. 51c and 51c’).

(51) a. *mouxie-shiwu, John buchi.*

some-food, John not eat

‘Some food, John doesn’t eat.’

b. *wo zhidao nazhong-shucaï (John bu chi),*

I know which.kind.of-vegetable (John not eat),

b’. *wo hai zhidao nazhong-shuiguo (John bu chi).*

I also know which.kind.of-fruit (John not eat).

‘I know, which kind of vegetable, John doesn’t eat, and I also know, which kind of fruit, he doesn’t eat, either.’

c. *wo zhidao shi nazhong-shucaï (John buchi),*

I know COP which.kind.of-vegetable (John not eat),

c’. #*wo hai zhidao shi nazhong-shuiguo (John bu chi).*

I also know COP which.kind.of-fruit (John not eat).

‘I know, it is which kind of vegetable that John doesn’t eat, # and I also know, it is which kind of fruit.’

Instead of ‘some kind of vegetable’, in (51a), ‘some food’ is used in order to rule out the possible impact from the correlate on the eligibility for *wh*-phrases to occur. Thus both of the *wh*-phrases—‘which kind of vegetable’ and ‘which kind of fruit’—should be equally possible to occur in following constructions. The presupposition denoted by (51a) is ‘there is some kind of food that John doesn’t eat’, and we may construct a sluicing construction with ‘I know which kind of vegetable’ (cf. 51b). The introduction of an alternative item, namely ‘which kind of fruit’ (cf. 51b’) is felicitous with the same proposition ‘John doesn’t eat some kind of food’, demonstrating the *wh*-phrase in position is a topic.

By contrast, the *wh*-phrase cannot be taken as a focus, because the infelicity in (51c’) indicates the exclusiveness condition expressed by ‘it is which kind of vegetable, it is not which kind of fruit’ does not hold. These examinations demonstrate that *wh*-phrases in sluicing clearly exhibit topic-like behaviors rather than focus-like behaviors.

4.4 Summary

As shown in this chapter, a topic construction source is more favorable than a focus construction source for sluicing, for at least four reasons. First, the matching-up between “*wh*-in-topicalization” and “*wh*-in-sluicing” indicates a strong possibility for the connection between the topic construction and sluicing. Specifically, with the distinction between D-linked and non-D-linked *wh*-phrases, we can successfully predict which of the *wh*-phrases are found in sluicing as well. Second, in contrast to the focus construction, the topic construction is unrelated to the

copula *shi*, which, I propose, not only alleviates the need for accounting for the occurrence of the copula *shi* but also reinforces our assumption that sluicing in Chinese does not have the copula *shi*. Third, the TopP is superior to the FocP with respect to the *wh*/sluicing-correlation generalization and the MaxElide constraint: while it is still controversial whether the [+Foc]-feature does or does not trigger overt movements, the [+Top]-feature is a tested strong feature in Chinese which indeed attracts targeted elements to move; the ellipsis of the FocP is observed in sluicing constructions when such a FocP is dominated by the TopP, indicating that [E] should be located in a position that c-commands the FocP. An additional benefit from the TopP is that having [E] at HeadTopP reassures the deletion of the copula *shi* regardless to the structure of the FocP. Fourth, by using the Exclusiveness Condition Test, I demonstrate that the *wh*-phrase in sluicing behaves more like a topic rather than a focus. In particular, it can be replaced by an alternative *wh*-phrase without changing the presupposition but fails in retaining its exclusiveness.

Chapter 5 Applications and Discussions

This chapter includes three discussions based on this new approach. Section 5.1 examines how this new approach would be able to account for the peculiar behavior of the *wh*-phrase *zenme* ‘how’. In section 5.2, with a brief introduction of a subcategory of sluicing—sprouting, it strives to provide a possible solution for the “no sprouting, no sluicing” argument proposed in Li and Wei (2017). In the last section 5.3, it tries to answer two remaining questions concerning the PF-deletion analysis on sloppy identity in Wei (2009).

5.1 the Special *Wh*-phrase *zenme* ‘how’

Recall the introduction of constructions with *zenme* ‘how’ in section 2.1.2. The occurrence of the copula *shi* with neither the evaluation *wh*-expression *zenmeyang* ‘how’ nor the manner *wh*-expression *zenme* ‘how’ is allowed. Examples (12) and (13) are repeated in (52) and (53) below.

- | | |
|--|--|
| <p>(52) Asking for the evaluation:</p> <p><i>zhejian waitao (*shi) zenmeyang?</i></p> <p>this coat (*COP) how</p> <p>‘How is this coat?’</p> | <p>(53) Asking for the manner:</p> <p><i>ni (*shi) zenme chi pangxie?</i></p> <p>you (*COP) how eat crab</p> <p>‘How do you eat crab?’</p> |
|--|--|

With the new approach proposed in this thesis, the reason for neither of them to be found in sluicing is straightforward: neither the evaluation *wh*-expression *zenmeyang* ‘how’ nor the

manner *wh*-expression *zenme* ‘how’ is a D-linked *wh*-phrase or can be related with a D-linked meaning, therefore they cannot occur in topic position and thus are not eligible to form a sluicing construction through the PF-deletion process.

The reasons for them to fail in a pseudo-sluicing construction are different. In the case of the evaluation *wh*-expression *zenmeyang* ‘how’, it seems that such a *wh*-phrase functions as a verb as shown in (52). Reminding ourselves of the verb-like status of AdjPs in Chinese, it is reasonable to consider *zenmeyang* ‘how’ as a verb-like predicative *wh*-phrase in Chinese—a felicitous answer for this *wh*-expression could be an AdjP. Presumably, *zenmeyang* ‘how’ cannot be contained in a pseudo-sluicing structure because it cannot form a predicational clause with either an identificational copula *shi* or a predicational copula *shi*. On the other hand, the manner *wh*-expression *zenme* ‘how’, as shown in (53), is strictly required to be positioned before the verb. Here, I assume the manner *zenme* ‘how’ in Chinese must be tied with the verb to form a structure as [*zenme* + V] ‘how to V’ as the how-infinitive cases in English—probably because Chinese does not have an infinitive marker such as *to*—thus *zenme* ‘how’ and the verb must stay together. Therefore, *zenme* ‘how’ is unexpected to occur by itself in a [*pro shi wh*-] structure. Moreover, as argued by Adam and Tomioka (2012), the counterpart of *zenme* ‘how’ in English—simply as *how*—is also not possible in English pseudo-sluicing: when occurring in a copulative clause, it no longer asks for the manner but functions as an expression asking for an evaluation (cf. 54).

(54) John: I watched a movie yesterday.

Bill: How was that? (how was the movie/how was the experience/*in what manner)

There are two other common ways in Chinese to question manner/method. One is through the *shi...de* cleft construction to form a structure such as [*shi zenme+V de*] (cf. 55) and another is by using the co-verb³⁴ *yong* ‘use’ with the complex *wh*-phrase *shenme-fangshi* ‘what method’ consisting of the *wh*-phrase *shenme* ‘what’ and the noun *fangshi* ‘method’ or equivalent combinations (cf. 56).

(55) *ni shi zenme chi pangxie de?*
 you COP how eat crab DE
 ‘How do you eat crab?’

(56) *ni yong shenme-fangshi chi pangxie?*
 you use what-method eat crab
 ‘How do you eat crab?’

Obviously, a cleft construction is not compatible with either pseudo-sludging or sludging; however, since the *wh*-phrases involved (e.g., *shenme-fangshi* ‘what-method’) are likely to have a D-linked reading, the other strategy seems to be able to construct both pseudo-sludging and sludging sentences. Strikingly, only the pseudo-sludging construction is acceptable, but the sludging construction is not, as illustrated in (57).

(57) *ta yong mouzhong-fangfa xiuhaole che, dan wo bu zhidao ?(shi) shenme-fangfa.*
 he use **some.kind.of-method** fix-good Pst car, but I not know ?(COP) **what-method**
 ‘He fixed the car somehow, but I don’t know how.’

³⁴ “Co-verb” refers to the class of morphemes in Mandarin Chinese that are homophonous with verbs but function as prepositions (Li and Thompson 1974).

Under the pseudo-slucing analysis, a structure such as [*pro shi shenme-fangfa*] ‘[*pro* is what-method]’ is successfully constructed with *pro* referring to the indefinite NP *mouzhong-fangfa* ‘some.kind.of-method’. At the same time, a sluicing construction is not available even though *shenme-fangfa* ‘what-method’ indeed has a D-linked meaning. However, I argue that this is not a counterexample to my analysis. In fact, I propose this is because of the existence of the co-verb *yong* ‘use’, which blocks the extraction of the *wh*-phrase. By considering Chinese co-verbs as prepositions (Li and Timpson 1976), the combination of co-verb *yong* ‘use’ plus *wh*-phrase should, therefore, be viewed as an instance of PP. It is worth noting that preposition stranding is disallowed in Chinese sluicing (Wang and Wu 2006) as exemplified in (58).

(58) *John gen mouge-ren qu le jiuba, dan wo bu zhidao *(gen) nage-ren.*

John with some-person go Pst bar, bu I not know *(with) which-person

‘John went to the bar with someone, but I don’t know with who.’

Arguably, co-verbs behave like prepositions in Chinese, thus extracting the *wh*-phrase without the co-verb is not allowed. While when the co-verb attaches to another verb as in (59), the sluicing construction is greatly improved.

(59) *mouyizhong fangshi, ta chang yong-lai jiao xiaohai, dan wo bu zhidao shenme-fangshi*

some method, he often **use-to** teach. kid, but I not know what-method

‘Some method, he often uses that to teach the kid, but I don’t know what method.’

5.2 Sprouting

Sprouting is a sub-type of sluicing where the *wh*-phrase does not correspond to an overt correlate (Chung et al. 1995).

- (60) a. Abby ate something, but I don't know what_i (Abby ate t_i).
 b. Abby ate, but I don't know what_i (Abby ate t_i).

(60a) is the sluicing construction that we are familiar with—it has an overt indefinite correlate in the antecedent clause. Contrastively, the construction in (60b), where no such an overt correlate is found, is called sprouting (Chung et al. 1995). In Chinese, although the sprouting construction with an adjunct *wh*-phrase is allowed (cf. 61a), argument sprouting constructions in parallel to (60b) are disallowed, as exemplified in (61b).

- (61) a. *Abby chi le pangxie, dan wo bu zhidao weishenme.*
 Abby eat Pst crab, but I not know why
 ‘Abby ate crab, but I don't know why.’
 b. **Abby chi le, dan wo bu zhidao shi shenme.*
 Abby eat Pst, but I not know COP what
 ‘Abby ate, but I don't know what.’

With this piece of evidence, Li and Wei (2017) argue against the existence of true sluicing in Chinese but in favor of pseudo-sluicing. Li and Wei (2017) suggest that only the pseudo-sluicing analysis can explain this peculiar behavior of sprouting in Chinese, namely that argument sprouting is not permitted but adjunct sprouting is accepted. In the view of Li and Wei (2017), a sprouting construction is not possible when the *pro* functions as the E-type *pro*. Specifically, because there is no overt correlate, the E-type *pro* is unable to be identified with an NP, thus a structure of [*pro* is what/who] is not accepted. However, *pro* is still able to refer to an event or proposition, thus a structure of [*pro* (is) why/when] should be fine. Meanwhile, the deletion analysis is challenged as it fails to explain such an adjunct-argument asymmetry in sprouting.

This argument is indeed convincing if we put aside all the controversial topics we have discussed above and focus only on this specific sprouting situation. With the new analysis proposed above, however, the behavior of sprouting is not problematic for sluicing constructions anymore.

We have seen that sluicing with the argument *wh*-phrase is permitted only if such a *wh*-phrase has a D-linked meaning. Thus, I propose the reason for the argument sprouting to be missing in Chinese is that D-linked *wh*-phrases cannot occur in a correlate-missing condition, according to its definition—a given set is necessary. This is shown in (62).

- (62) **ta chi le, dan wo bu zhidao naxie-shucai.*
 he eat Pst, bu I not know which-kinds-of-vegetable
 ?‘He ate, but I don’t know which kind of vegetable.’

In fact, it seems that such a construction with D-linked *wh*-phrase in English sprouting is also not good. Therefore, I propose that the impossibility of argument sprouting is not evidence against the deletion analysis once we have made the necessary distinction between sluicing and pseudo-sluicing as well as the D-linked and non-D-linked *wh*-phrases in Chinese.

5.3 More on Sloppy Identity and PF-deletion

An in-depth discussion on sloppy identity in Chinese sluicing-like constructions in Wei (2009) compares the performance of the pseudo-sluicing and PF-deletion analyses on this topic. The discussion focuses on three properties of the sloppy identity: i) the *c*-commanding relation; ii) the *wh*-*wh* identity; iii) the *na* ‘that’-effect. The former two have been discussed earlier in section 3.1.3, to avoid redundancy I will only discuss the *na*-effect here.

Observed by Wei (2009), the *na*-effect describes the situation where only the strict reading is available when the definite description *na* ‘that’ occurs in front of the *wh*-remnant (cf. 63).

- (63) *John zhidao ziji shenme-shihou qu Beijing, Bill ye zhidao na shi shenme-shihou.*
 John know self what-time go Beijing, Bill also know that COP what-time
 ‘John knows when will self(=he) go to Beijing, and Bill knows when too (strict/*sloppy)’

While noting that when *na* ‘that’ occurs, the copula *shi* must occur obligatorily, Wei (2009) does not relate the disappearance of the sloppy reading to the copula *shi*, but concludes that the PF-deletion analysis only succeeds in accounting for the previous two properties of the sloppy identity but fails to explain the *na*-effect. However, once we have made the distinction between sluicing and pseudo-sluicing, the solution to this puzzle becomes clear: the situation with *na* ‘that’ replacing *pro*, as is also observed with an obligatory copula *shi*, is an instance of pseudo-sluicing, thus should be ruled out for sloppy identity.

Another problem with PF-deletion mentioned in Wei (2009) is the lack of the sloppy reading with the left-branching modifier, as exemplified in (64).

- (64) *John zhidao ta you yige ji-sui de xiaohai, dan Bill buzhidao (shi) ji-sui.*³⁵ (strict/*sloppy)
 John know he have one [how.many-age DE child], but Bill not know [how.many-age]
 ‘John knows how old his kid is, but Bill doesn’t know how old.’

(Wei 2009)

³⁵ In Wei’s discussion, all the occurrences of the copula *shi* are left as optional to avoid the unsolved issue with the distribution of the copula *shi*, which is not the core purpose of the discussion.

This problem, however, can be explained with the new analysis as well. First, clearly, if the copula *shi* is present, such a sentence should be an instance of pseudo-slucing, thus should not be able to get a sloppy reading. Second, I propose, the sluicing case in (64) is ruled out for the violation of a locality constraint. That is, the construction of sluicing like (64) will be blocked by the locality constraints the topic movement must respect.

Since no distinction between sluicing and pseudo-slucing was made in previous studies, it is claimed by many that Chinese sluicing-like constructions are insensitive to most island effects akin to English sluicing. However, as we have distinguished sluicing from pseudo-slucing, we must reconsider such a claim. Having assumed that the *wh*-phrase is moved as a topic in sluicing, we must consider locality constraints on topic movement as well as *wh*-movement islands.

Observed locality constraints in topic movement include the Complex Noun Phrase Constraint (cf. 65a), the Left Branch Condition (cf. 65b) and the Adjunct Island Constraint (cf. 65c) (Huang 1982; Huang, Li and Li 2009; Paul 2014).

(65) a. *_[TopP] **Hemingway**_{*i*} [_{TP} *wo hen xihuan* [_{DP} [_{TP} *t_i xie de*] *xiaoshuo*]]].

Hemingway I very like [[*t_i* write DE] novel]

‘Ernest Hemingway, I like the novel he writes.’

b. *_[TopP] **wu-sui** [_{TP} *ta you yige* [_{NP} *t_i de xiaohai*]]].

five-year he have one [*t_i* DE kid]

‘Five-year-old, he has a kid at that age.’

c. *_[TopP] **hongse-de-yifu** [_{TP} *zhe shi* [_{PP} *gen* [_{TP} *ni chuan le t_i*] *you guan*]]].

red-DE-coat this matter [with you wear Pst *t_i*] have relation

‘Red coat, this matter is related to you wearing [that].’

Although with the “*-as-a-feature-of-traces” proposal, sluicing can be rescued via PF-deletion, this proposal seems to fail in Chinese sluicing, as illustrated in (66).³⁶

- (66) a. ?*John hen xihuan* [_{DP} [_{TP} *mouge-zuojia xie de*] *xiaoshuo*], *dan ta bu jide nage-zuojia*.
 John very like [[**some-writer** write DE] novel], but he not remember **which-writer**
 ‘John likes the novel written by some writer, but he doesn’t remember which writer.’
- b. ?*John you yige* [_{NP} *buman-shisui de xiaohai*], *dan wo bu queding ji-sui*.
 John have one. [**not-to-ten-year** DE kid], but I not sure **how-many-age**
 ‘John has a less-than-10-year-old kid, but I’m not sure how old.’
- c. ?*zhe shi* [_{PP} *gen John chuan le moujian-yifu*] *youguan*, *dan wo buzhidao najian-yifu*.
 this matter [with John wear Pst **some-coat**] have relation, but I not know **which-coat**
 ‘This matter is related to John wearing some coat, but I don’t know which coat.’

A possible reason, I assume, is that the *wh*-phrase in sluicing, moving as a topic, should respect constraints that are observed in the topic movement. With the assumption that the *wh*-movement here is motivated by the [+Topic]-feature rather than the [+WH]-feature, I propose the escaping of the *wh*-phrase should respect the locality constraints governing movement. In the “*-as-a-feature-of-traces” proposal, Merchant (2008) clarifies that all traces of the island-escaping *wh*-phrase are marked with “*” except the highest copy, i.e., the copy in the last landing site, because it can be licensed by the [+WH, +Q] head C. Taking that process as an example, in the case of topic movement, when the locality constraints are violated, the traces of the *wh*-phrase should be marked by “*” as well. Unfortunately, such a highest copy (if there are intermediate stages in topic movement) will not be rescued because the last landing will still violate the locality

³⁶ Some speakers don’t accept the constructions without *shi*, while some do, but they all agree that adding the copula *shi* makes the sentences sound better.

constraints. That is, the [+Topic]-feature is unable to eliminate the “*”-feature of the last copy. Therefore, the PF-deletion cannot rescue the sluicing constructions as the process cannot successfully eliminate all traces with “*”. As illustrated in (67), the last copy of the *wh*-phrase in the case of *wh*-movement is not marked with “*” (cf. 67a), making it possible to be rescued in sluicing; by contrast, the last copy of the *wh*-phrase in the topic-movement case is marked with “*” as it triggers a locality constraint (cf. 67a), leaving the clause impossible to be rescued.

- (67) a. John likes the novel written by some writer, but
 he doesn't remember which **writer**_i [_i John likes *_i the novel written by _i]
- b. *John hen xihuan mouge-zuojia xie de xiaoshuo, dan*
 John very like some-writer write DE novel, but
*ta bu jide *nage-zuojia* [*John hen xihuan t_i xie de xiaoshuo*]
 he not remember **which-writer** [John very like _i write DE novel].

By contrast, a pseudo-sluicing construction, as the *wh*-phrase is assumed to be base-generated, will not be affected by the locality constraints. Thus the pseudo-sluicing versions of examples in (66) are uncontroversially accepted:

- (68) a. *John hen xihuan mouge-zuojia xie de xiaoshuo, dan ta bu jide shi nage-zuojia.*
 John very like some-writer write DE novel, but he not remember **COP** which-writer
 ‘John likes the novel written by some writer, but he doesn't remember which writer.’
- b. *John you yige bumanshisui de xiaohai, dan wo bu queding shi ji-sui.*
 John have one not.to.ten.year DE kid], but I not sure **COP** how.many-age
 ‘John has a less-than-10-year-old kid, but I'm not sure how old.’
- c. *zhe shi gen John chuan le moujian-yifu youguan, dan wo buzhidao shi najian-yifu.*

this matter with John wear Pst some-coat have relation, but I not know **COP** which-coat

‘This matter is related to John wearing some coat, but I don’t know which coat.’

Chapter 6 Conclusion

While this is an investigation of the sloppy identity in Chinese sluicing-like constructions, discussions are not limited to this topic in this thesis. In fact, the thesis strives to establish a more promising account for not only the sloppy identity in particular but also for the Chinese sluicing-like constructions in general. The thesis revolves around the distributions of the copula *shi* and sloppy identity in Chinese sluicing-like constructions, which are discussed by many to have raised problems for all current analyses.

By addressing the crucial fact—which is underestimated in the literature to a surprising degree—that only sentences in lack of the copula *shi* are able to have sloppy interpretations, I have proposed a bipartite analysis. That is, Chinese sluicing-like constructions are in fact divided into pseudo-sluicing and sluicing. In analyzing the sloppy identity interpretations, I demonstrate how two sentences which differ only with respect to the presence of the copula *shi* vary also with respect to the accessibility of sloppy identity readings. Such a discrepancy, I argue, establishes the distinction between these two seemingly isomorphic constructions. Alike as they may seem, I argue, the sentence with the copula *shi* is an instance of pseudo-sluicing while the one without the copula *shi* is an instance of sluicing.

Following this idea, I demonstrate how the topic construction as a source is more explanatory than the focus construction in accounting for sluicing constructions with respect to the PF-Deletion Analysis, while at the same time, how the Exclusiveness Condition Test provides

evidence for the topic status of the *wh*-phrases in sluicing. That being the case, by using the new analysis which comprises both the pseudo-sluicing approach and the PF-deletion (sluicing) approach as the analytical tools, I demonstrate how it is able to explain the remaining issues mentioned previously in the literature.

I argue that the combined approach advocated in this thesis is significant on two levels: First, the combination quite accurately predicts the occurrence of the copula *shi*. Second, it highlights the difference between the two constructions, which, at the same time, reveals the underlying logic of their varying accessibilities to the sloppy reading. However, adopting such a topic construction as the base of sluicing may seem very “unusual”, which is why I believe thorough investigations and field work should be conducted to support this approach. Also, given the main concern of this thesis, which is to provide a reliable account for the sloppy identity in Chinese sluicing-like constructions, I did not extend the discussion to many other related issues. Monographs could and should be written about the Chinese sluicing’s eliding condition (syntactic or semantic identity condition), voice mismatching (if there is any), and other issues, which I believe will not only provide a more comprehensive understanding of Chinese sluicing(-like) constructions but also will contribute to other debated issues concerning ellipsis in general. I look forward to future scholarly studies (maybe by myself) that will address these issues.

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