

# **Adverbial Clauses in Mandarin Chinese**

## **Part 1: Preverbal Adverbial PPs and Clauses**

WEI HALEY WEI & YEN-HUI AUDREY LI  
*University of Southern California*

### 1. General introduction

Our work on adverbial clauses in Mandarin Chinese in this issue is divided into three parts—Part 1, Part 2, and Part 3, each with its own focus and subtitle. The goals of this series of papers are to present newly discovered empirical generalizations related to adverbial clauses in Mandarin Chinese, and to provide our analyses built on the insights in the literature. The data will include both intuition- and corpus-based examples in Mandarin Chinese, simply referred to as Chinese for convenience. As a first step, without presupposing the relevant internal and external syntactic structure, we select our objects of inquiry based on the following definition of “adverbial clause”:

Syntactically, an adverbial clause has its own predicate and argument, i.e., verb, subject, object (subject and object can be null or non-existent, such as in the case of object-less intransitive verbs). The clause is usually fronted or followed by a categorially-undefined element, referred to simply as “conjunction (word)” for convenience (not necessarily adopting a conjunction analysis). Due to the presence of a conjunction, an adverbial clause cannot “stand alone” (excluding fragments), and thus is dependent on another clause which we call “main clause.”

Semantically, an adverbial clause provides adverbial modification to the main clause with respect to time, condition, reason, concession, purpose, result, etc.

The definition leads us to a mixed collection of constructions ranging from adpositional phrases, full clauses with conjunction words in different positions, and bare verb phrases. Technically, some of them are not “clauses,” but for convenience we refer to them as “adverbial clauses” or “adverbial adjuncts” until their syntactic properties are

clarified. We adopt a heuristic approach, making the initial categorization according to their distribution. The rationale is that adverbial clauses are selected by conjunction words of various categories and merged at different syntactic positions, leading to empirical differences observed in syntax, semantics, discourse, and prosody.

There will be three groups of adverbial clauses discussed in this series of articles. The first group includes adverbial adjuncts headed by adpositions expressing the meaning of (i) time (e.g., (*zài*) ... *de-shíhòu* 'when', *cóng* 'from', *yǐqián/yǐhòu* 'before/after'), and (ii) reason/purpose (*wèile* 'for/to'). The second group focuses on adjuncts of clausal categories containing conjunction words.<sup>1</sup> Such an adverbial clause can occur before the subject or after the subject but before the predicate of the main clause (conveniently referred to as the "S-initial" adverbial clause); it can also follow the main clause (referred to as the "S-final" adverbial clause). We will show that the unmarked position for such adverbial clauses are S-initial, and that S-final adverbial clauses are marked. The notion of markedness will be defined in precise terms in Part 2 in this issue.<sup>2</sup> In contrast to the first two groups that can occur in the unmarked S-initial position and the marked S-final position, the third group is only possible in the postverbal or sentence-final position. This third group includes purposive, rationale, resultative clauses, whose forms are either verb phrases headed by *lái* 'come, to', or a series of expressions containing the morpheme *yǐ* 'to' (generally of the form *yǐ* + Verb), or clauses headed by *hǎo* 'good, so that', or verb phrases with no conjunction words at all.

Part 1 of this series of articles focuses on the internal and external structures of adverbial adjuncts in the first two groups, including different types of adpositional phrases and adverbial clauses. Part 2 of this series focuses on the syntactic, semantic, discursive, and prosodic factors that allow us to predict when and why an adverbial clause occurs in S-initial or S-final position. Through careful considerations of these interacting factors, we are able to establish systematic correlations among syntactic structures, discursive functions, and prosodic (im)possibilities. The results of our study will enable us to better understand what right-dislocation and afterthought

<sup>1</sup> See Pan & Paul, section 6, this issue, for the properties of such conjunction words.

<sup>2</sup> Preliminarily, a clause order is marked if the ordering is possible ONLY when some special conditions are met; otherwise, it is unmarked (see Part 2 of our work in this issue for more details; also see König and Van Der Auwera 1988: 109-110).

mean syntactically, prosodically, and pragmatically. They will also allow us to provide motivations for deriving S-final adverbial clauses conforming to the universal word order hypothesis that prohibits right-adjunction (Kayne's 1994 Linear Correspondence Axiom (LCA)). Part 3 turns to those that are only allowed in the postverbal or sentence-final position, which raises issues on how the structures can be analyzed if one is to be faithful to the LCA. We argue that some in this group are complements like those for control verbs. Yet, some others are resistant to a complement or left-adjunction analysis. Although a tension has been created, the empirical generalizations discovered along the way are significant and they need to be accommodated adequately in any account. Part 3 will conclude with a brief discussion on the consequences and implications of our proposal.

In Part 1 paper, we present in section 2 varieties of adpositional adverbial adjuncts regarding their syntactic similarities and differences. We will show that adverbial adjuncts that share the property of having a complex NP as the complement of an adposition should be distinguished into two types. The need for the distinction is due to such generalizations as external topicalization<sup>3</sup> being impossible in the clause contained in temporal adjuncts, but acceptable in the clause within purpose *wèile* 'for/to' phrases. It will be demonstrated that external topicalization is also impossible in relative clauses. We show that the relation between the clause and the head noun in temporal adverbial adjuncts is a relation of relativization, and that intervention effects account for the impossibility of external topicalization (Haegeman 2010ab, 2012, among others). In contrast, evidence shows that the relation between the clause and the head noun in *wèile* 'for/to' is not a relation of relativization, and external topicalization is possible in these cases. Section 3 focuses on clausal adverbial adjuncts. While such adverbial clauses are distinct from complement clauses and relative clauses, it is not an easy task to clearly distinguish adverbial clauses (i.e., subordination) from coordinate conjunctions. An important contribution of section 3 is the empirical differences that help establish the distinction between an adverbial clause, which is syntactically integrated with the main clause (i.e.,

<sup>3</sup>External topicalization refers to topicalization to an A'-position before the subject of a clause (and which can cross clauses), in contrast to internal topicalization, which refers to topicalization to a post-subject position (which is generally considered as A-movement and cannot cross clauses). See, for instance, Shyu (1995) for detailed discussions on different types of topicalization.

subordination), from coordinate conjunctions, which involves two root sentences<sup>4</sup> (Haiman & Thompson 1984; Verstraete 2005, 2007; Frey & Truckenbrodt 2015, among others). The other important contribution of section 3 is to distinguish two types of adverbial clauses in this group and establish the criteria for the distinction (cf. Haegeman 2002, 2004, 2006, 2010ab, 2012, among others). Section 4 summarizes the results and concludes Part 1.

## 2. The internal syntax of adpositional adverbial adjuncts

This section discusses the internal syntax of adpositional adverbial adjuncts of time and reason/purpose introduced by *zai* ‘at’ and *wèile* ‘for/to’, the Chinese counterpart of English temporal and reason/purpose clauses. In section 2.1, we argue that these lexical items are prepositional in grammatical category, taking noun phrases as their objects. That is, despite looking like a clause on the surface, the complement of the preposition is actually a complex NP, i.e.,  $[_{PP}[_{DP}[_{CP}]]]$ .<sup>5</sup> Notwithstanding this shared structural property, section 2.2 shows that topicalization is possible in *wèile* ‘for/to’ complements but not in *zài ...de-shíhòu* ‘at...the time’ constructions. This difference indicates that they are not identical structurally. We propose that *zài ...de-shíhòu* ‘at...the time’ involves relativization and *wèile* ‘for/to’ complement clauses do not. Different compatibilities with topicalization in these cases is captured in section 2.3 by the intervention effect on A'-dependency relations (cf. Haegeman 2010a, 2012, among others). Section 2.4 shows that our analysis explains mixed properties of the construction containing *zài...yǐqián/yǐhòu* ‘at...before/after’, which supports the proposal that *yǐqián/yǐhòu* ‘before/after’ are postpositions (Djamouri *et al.* 2013; Paul 2015).

<sup>4</sup> We adopt Downing’s 1970 definition that root sentences are unembedded root clauses; also see Frey & Truckenbrodt 2015 for discussion.

<sup>5</sup> The distinction between NP and DP is irrelevant to this work. We use the label DP for argument nominal phrases, following most current practices in the generative framework. The label NP will be used for phrases following classifiers.

## 2.1 Adpositional adverbials

### 2.1.1 Temporal adpositions

The Chinese equivalent of temporal *when* expressions in English is either a DP or a PP, as shown in (1)a-b.

(1) ‘when’

a. Temporal DP: ... *de shíhou*<sup>6</sup>  
DE time

b. Temporal PP: [<sub>PP</sub> *zài* [<sub>DP</sub>... *de shíhou*]]  
at DE time

The temporal DP in (1a) is headed by *shíhou* ‘time’. The modifier of *shíhou*, with the modification marker *de* between the modifier and *shíhou*, can be a clause, or a DP denoting a period of time or a time point like *shíèr-diǎn* ‘twelve o’clock’. By the definition in the introduction, we focus on the cases where the modifier of *shíhou* is a clause. The temporal PP in (1)b is introduced by *zài* ‘at’ with the temporal DP (1a) being the complement of the preposition *zài* ‘at’.

As shown in (2), the preposition *zài* is optional when the adverbial adjunct is sentence-initial. The temporal adjunct can also appear at the post-subject and preverbal position, in which case the preposition *zài* is preferred.

- (2) (zài) Zhāngsān shuō Mǎlì líkāi Nǚyuē de shíhou,  
at Zhangsan say Mary leave NewYork DE time  
Lǐsì yǐjīng dào-le.  
Lisi already arrive-PERF  
‘Lisi has arrived at *the time at which* Zhangsan said Mary left New York’

The temporal DP in (2) (underlined) takes the form of a relative clause, as indicated in the translation. Unlike other languages that also adopt this structure (Diessel 2001: 436), the temporal head noun *shíhou* is neither reanalyzed as a postposition or complementizer,

<sup>6</sup>The abbreviations used in the glosses are as follows: CL: classifier; DE: the particle between an NP and pre-nominal phrases; EXP: experiential aspect; PERF: perfective aspect marker; SFP: Sentence Final Particle.

nor optional when the modifier is a CP. Instead, *shíhou* is a noun because it has the typical behavior of a noun. It can be preceded by a demonstrative, numeral, and classifier, like all nouns do: *nà-yǐ-gè shíhou* ‘that-one-Classifier time (that time)’. It can also be preceded by a possessor (a DP with the modification marker *de*): *nǐ-de shíhou dào le* ‘your time has arrived’, or a nominal/adjectival modifier *zhōngwǔ/zhòngyào de-shíhou* ‘noon/important-DE-time (noon/important time)’.

Temporal phrases can also be headed by *yǐqián* ‘before’ and *yǐhòu* ‘after’. However, their categorial status is not obvious. Two analyses are available. They could be nominals equivalent to *de-shíhou* ‘DE-time’, with the expression preceding them being either a clause or a DP: *tā lái yǐqián/yǐhòu* ‘before/after he came’, *zhōngwǔ yǐqián/yǐhòu* ‘before/after noon’. Note that the modification marker *de* is impossible before *yǐqián/yǐhòu*. A second possibility is that they are postpositions as proposed by Paul (2015, 2016). We will show in section 2.4 that the postposition proposal can better explain the empirical generalizations.

### 2.1.2 *Wèile* ‘for’ and *yǐqián/yǐhòu* ‘before/after’

The semantic counterpart of the English purposive *for*, *in order to*, or *so that* can be introduced by *wèi* or *wèile*<sup>7</sup> in Chinese. *Wèile* can take either a nominal phrase as in (3a), or a clausal complement as in (3b).

- (3) a. *Wèile Mǎlì, wǒ zuò le hěnduō nǜlì.*  
       for Mary I make PERF much effort  
       ‘For Mary, I made a lot of efforts’
- b. *Wèile Mǎlì néng cǎifǎng xiàozhǎng, wǒ zuò le hěnduō nǜlì.*  
       for Mary can interview headmaster I make  
       le hěnduō nǜlì.  
       PERF much effort  
       ‘In order for Mary to be able to interview the headmaster,  
       I made a lot of efforts’

The possibility of a nominal or a clausal complement suggests three logical possibilities for the grammatical category of *wèile*:

<sup>7</sup> *Wèi* is formal and mostly used in written texts. The following examples are constructed as colloquial form; and therefore *wèile* is used.

- The first option is straightforward. Many instances of a morpheme used as either a preposition or a complementizer are attested, such as *after/before/for* in English (Thompson & Longacre 1985; Emonds 1985; Grimshaw 1991; Dubinsky & Williams 1995, among others). The second and third option would lead to the question of why both DP and clausal complements seem to be possible. Below we will demonstrate that the third option—*wëile* as a preposition consistently—is plausible, and allows us to describe more adequately the internal structure of such phrases.

(5) [<sub>DP</sub>Zhāngsān] hé / gēn /\*érqiě [<sub>DP</sub>Lǐsì] dōu hěn cōngmíng.  
Zhangsan and Lisi both very smart  
'Zhangsan and Lisi are both smart' (nominal phrases)

- (6) [CP Zhāngsān hěn cōngmíng] \*hé /\*gēn / érqǐě  
 Zhangsan very smart and  
 [CP Lǐsì yě hěn cōngmíng]. (clauses)  
 Lisi also very smart  
 ‘Zhangsan is smart and Lisi is also smart’

<sup>8</sup> There is a long history of interest in the analysis of coordinate structures by Chinese grammarians. See more recent extensive work on conjunction structures as in Zhang (2010).

<sup>9</sup>The examples and generalizations discussed below are based on Li (2008, 2011).

- Importantly, the nominal conjunction words, *hé* and *gēn*, are possible in contexts conjoining two apparent clauses, such as the object of some verbs as in (8), the subject of a sentence as in (9), and the object of a preposition and *bǎ* as in (10)–(12).

- (9) a. [<sub>CP</sub> Zhāngsān néng-bú-néng lái] hé/gēn  
 Zhangsan can-not-can come and  
 [<sub>CP</sub> Lǐsì néng bú néng lái] dōu bú shì wèntí.  
 Lisi can-not-come come all not be question  
 ‘Whether Zhangsan can come and whether Lisi can come  
 are not problems’

- b. [<sub>CP</sub> Zhāngsān dé jīn pái] hé/gēn  
 Zhangsan get gold medal and  
 [<sub>CP</sub> Lǐsì dé yín pái] dōu shì  
 Lisi get silver medal all be  
 wǒmen yù.liào-zhōng de shì.  
 we expect-mid DE matter  
 ‘Both (the facts) that Zhangsan won a gold medal and that  
 Lisi won a silver medal were what we expected’

- (10) Wǒ duì [<sub>CP</sub> Zhāngsān yào lái] hé/gēn  
 I to Zhangsan want come and  
 [<sub>CP</sub> Lǐsì yě yào lái] dōu méi yìjiàn.  
 Lisi also want come all not opinion  
 ‘I have no objection to either of the facts that Zhangsan wants  
 to come and Lisi also wants to come’



- (11) Wǒ bǎ [<sub>CP</sub> Zhāngsān kěyǐ lái] hé/gēn  
 I BA Zhangsan can come and  
 [<sub>CP</sub> Lǐsì yě kěyǐ lái] dōu dāngzuò  
 Lisi also can come all regard  
 shì hěn zhòngyào de shì.  
 be very important DE matter  
 ‘I take both of the matters as important that Zhangsan can come  
 and Lisi can come too’
- (12) [<sub>PP</sub> Cóng [<sub>CP</sub> Zhāngsān jìnlái] hé/gēn  
 from Zhangsan enter and  
 [<sub>CP</sub> Lǐsì jìnlái]] [<sub>PP</sub> dào xiànzài]],  
 Lisi enter to now  
 wǒ dōu méi shuōhuà.<sup>10</sup>  
 I all have-not speak  
 ‘From the time when Zhangsan entered and the time when Lisi  
 entered till now, I did not say a word’

Note further that the distributive or totalizing quantifier *dōu* ‘all/both’, requiring an associated plural noun phrase (Lee 1986, X. Li 1997, S. Huang 2005, among others), is possible in the examples above but impossible when the conjunction word is *érqiě*.

- (13) [<sub>CP</sub> Zhāngsān bú néng lái] érqiě  
 Zhangsan not can come and  
 [<sub>CP</sub> Lǐsì yě bú néng lái] (\*dōu) shì wèntí.  
 Lisi also not can come all be problem  
 ‘That Zhangsan cannot come and Lisi also cannot come is a  
 problem’

Li (2008) argues that the apparent clauses conjoined by *hé/gēn* are actually complex noun phrases. The need to postulate a complex noun phrase structure for the apparent clauses in such cases is not only supported by the choice of nominal conjunction words *hé/gēn*, the co-occurrence of the nominal distributive quantifier *dōu* ‘all/both’, but is also required by interpretation. The evidence according to interpretation can be provided by examples such as (12), with the prepositions *cóng* ‘from’ and *dào* ‘to’. In this example, the obligatory

<sup>10</sup> [*Cóng* XP *dào* YP] ‘from XP to YP’ is bracketed as two PPs. See Paul (2015: 133–136) for an analysis according to which the *cóng* XP is in the specifier of the *dào* YP.

use of time expressions in the translation makes sense, because the objects for the preposition *cóng* ‘from’ and *dào* ‘to’ should not be a proposition. Rather, their objects denote temporal points. (12) is synonymous with (14), which contains nominal temporal expressions (although the repetition of *nà-shíhou* ‘that time’ may sound redundant):

- (14) [<sub>PP</sub> *Cóng* [[<sub>DP</sub> [<sub>CP</sub> *Zhāngsān jìnlái*] *nà-shíhou*] *hé/gēn*  
           from                      Zhangsan enter    that time    and  
           [<sub>DP</sub> [<sub>CP</sub> *Lǐsì jìnlái*] *nà-shíhou*]]]  
    Lisi enter    that time  
           *dào xiànzài*], *wǒ dōu méi*                      *shuōhuà*.  
           to    now            I    all have-not    talk  
           ‘From the time when Zhangsan entered and the time when Lisi  
           entered till now, I did not say a word’

Indeed, the cases in (8) to (12), with *hé/gēn* as the conjunction word, all allow a noun phrase (underlined in the examples) following the clause, as shown in (15) to (18).

- (15) *Wǒ xiǎng zhīdào* [<sub>CP</sub> *Zhāngsān chī-le*    *shénme*] *hé/gēn*  
           I    want    know    Zhangsan eat-PERF what            and  
           [<sub>CP</sub> *Lǐsì hē -le*    *shénme*] *zhè liǎng-jian shì*.            (cf. (8))  
    Lisi drink-PERF what            this two-CL    matter  
           ‘I want to know the *two matters* of what Zhangsan ate and what  
           Lisi drank’
- (16) [<sub>CP</sub> *Zhāngsān néng-bú-néng lái*] *hé/gēn*  
           Zhangsan can-not-can    come    and  
           [<sub>CP</sub> *Lǐsì néng bú néng lái*]  
    Lisi can-not-come come  
           *zhè liǎng-ge wèntí*    *dōu bú shì wèntí*.            (cf. (9))  
           this two-CL    questions both not be question  
           ‘The *two questions* of whether Zhangsan can come and whether  
           Lisi can come are not questions’

- (17) *Wǒ duì* [<sub>CP</sub> *Zhāngsān yào lái*] *hé/gēn* [<sub>CP</sub> *Lǐsì yě yào*  
           I    to            Zhangsan want come    and            Lisi also want

lái] zhè liǎng-jiàn shì dōu méi yìjiàn. (cf. (10))  
 come this two-CL matter all not opinion  
 ‘I have no objection to either of *the matters* that Zhangsan  
 wants to come and Lisi also wants to come’

- (18) Wǒ bǎ [<sub>CP</sub> Zhāngsān kěyǐ lái] hé/gēn  
 I BA Zhangsan can come and  
 [<sub>CP</sub> Lǐsì yě kěyǐ lái] zhè liǎng-jiàn shì  
 Lisi also can come this two-CL matter  
 dōu dāngzuò shì hěn zhòngyào de shì. (cf. (11))  
 all regard be very important DE matter  
 ‘I take both of *the matters* as important that Zhangsan can come  
 and Lisi can come too’

In contrast, those clauses not allowing *hé/gēn* as the conjunction word, e.g., (7), do not accept an accompanying noun phrase, as in (19):

- (19) Wǒ rènwéi / yǐwéi / cāi [<sub>CP</sub> Zhāngsān hěn cōngmíng]  
 I think thought guess Zhangsan very smart  
 érqǐe [<sub>CP</sub> Lǐsì yě hěn cōngmíng] (\*zhè liǎng-jiàn shì).  
 and Lisi also very smart this two-CL matter  
 ‘I think/thought/guess (\**the (two) matter(s)*) Zhangsan is smart  
 and Lisi is also smart’

These contrasts suggest that, although the clause appearing as the complement of verbs like ‘think’ is indeed a clause, what appears as a clause in the object position of verbs like ‘know’, or the subject position of a sentence, or the object position of a preposition (including *bǎ*), actually have a complex nominal structure containing a clause and a covert noun phrase equivalent to the overt expression ‘the question’, ‘the matter’, ‘the time’, etc. The relation between the clause and the noun phrase can be an apposition structure (cf. Kiparsky and Kiparsky 1970 for complements of factive and non-factive (bridge) verbs).<sup>11</sup>

Returning to the CP complements of *wèile* ‘for/to’, we find that they behave like noun phrases according to the tests described above.

<sup>11</sup> It is possible that the relation between the head noun and the clause here is a noun-complement relation. Deciding on whether it is an apposition or noun-complement structure is not important in this work. It is whether relativization is involved that matters, correlated with distinctions in scope possibilities, as will be shown in the next section.

That is, the apparent “clausal” objects of *wèile* can be conjoined by the nominal conjunction word *hé/gēn*, it can also be distributed over by *dōu* ‘all/both’, and it can be followed by an overt appositive noun phrase.<sup>12</sup>

- (20) *Wèile* [<sub>CP</sub> *Mǎlì néng cǎifǎng xiàozhǎng*] *hé/gēn*  
 for Mary can interview headmaster and  
 [<sub>CP</sub> *tāmen néng bàifǎng nà xuéxiào*]  
 they can visit that school  
 (*zhè liǎng-jiàn shì*), *wǒ dōu zuò-le hěnduō nǚlì*.  
 these two-CL matter I both make-PERF much effort  
 ‘I made a lot of effort for Mary interviewing the headmaster and  
 them visiting that school’

The apparent “clauses” preceding *yǐqián* ‘before’ and *yǐhòu* ‘after’ can also be conjoined by *hé/gēn* (not *érqiě*), they can be distributed over by *dōu*, and they can be followed by an overt noun phrase such as *nà-shíhòu* ‘that time’.

- (21) [<sub>PostP</sub> [<sub>DP</sub> [<sub>CP</sub> *Zhāngsān líkāi Nǚyuē*] (*nà shíhòu*) *hé/gēn*  
 Zhangsan leave New York that time and  
 [<sub>CP</sub> *Lǐsì dào dá*]] (*nà shíhòu*)  
 Lisi arrive that time  
*yǐqián*] *nǐ dōu bìxū dài zài zhèlǐ*.  
 before you all must stay at here  
 ‘Before (the time when) Zhangsan leaves New York and (the  
 time when) Lisi arrives, you must stay here’

We thus conclude that, when the preposition *wèile* ‘for/to’ is followed by a clause, there can be a covert noun in apposition to the clause, in

<sup>12</sup> When the two CPs in *wèile* are coordinated by the conjunction *érqiě*, there can also be a covert nominal head. However, as shown in (i), the head noun cannot be ‘two matters’. Moreover, the distributive quantifier *dōu* ‘both/all’ is not possible. The reason is that, “[<sub>CP1</sub> Event 1] *érqiě* [<sub>CP2</sub> Event 2]” is coerced as ‘one matter’.

(i) *Wèile* [<sub>CP</sub> [<sub>CP</sub> *Mǎlì néng cǎifǎng xiàozhǎng*]  
 for Mary can interview headmaster  
*érqiě* [<sub>CP</sub> *tāmen néng bàifǎng nà xuéxiào*]]  
 and they can visit that school  
*zhè (\*liǎng) jiàn shì*, *wǒ (\*dōu) zuò-le hěnduō nǚlì*.  
 this two CL matter I both make-PERF much effort  
 ‘I made much effort for the matter that Mary can interview the headmaster  
 and they can visit that school.’

addition to an overt one. The structure is schematized in (22a) below. Similarly, the clause preceding *yǐqián* ‘before’ and *yǐhòu* ‘after’ also has a covert head noun when there is no overt noun phrase such as *nà-shíhòu* ‘that time’, as shown in (22b). It remains a question, however, whether *yǐqián/yǐhòu* is a postposition or is equivalent to *de-shíhòu* ‘DE-time’, because a complex NP (or a nominalized clause) can either be the modifier of a noun or the complement of a postposition. This is temporarily noted as “?P” in (22b).

- (22) a. Purposive adverbial adjunct:

$[_{PP} \text{wèile } [_{DP} [_{CP} \dots]] \text{ (head noun)}]]$   
for/to

- b. Temporal adverbial adjunct:

$[_{?P} [_{DP} [_{CP} \dots]] \text{ (head noun)}] \text{ yǐqián/yǐhòu}$   
before/after

A caveat is that not all objects of prepositions can take such a complex noun phrase without an overt nominal head. As mentioned at the beginning of section 2.1.1, when the temporal phrase introduced by *zài* ‘at’ contains a CP, the object of *zài* requires an overt head noun; cf. (23a), schematized in (23b). That is, even though both *zài* and *wèile* take complex noun phrases as their objects, they differ in the possibility of a covert head noun, as is shown by the contrast between (22) and (23).<sup>13</sup>

- (23) a. *Zài tāmen bàifǎng \*(de shíhòu)....*

at they visit DE time

- b. Temporal adverbial adjunct introduced by *zài*:

$[_{PP} \text{zài } [_{DP} [_{CP} \dots] \text{ de shíhòu}]]$  (cf. (22)a)  
at DE time

Briefly summarizing this section, we argue that the reason/purpose *wèile* ‘for/to’ is more adequately analyzed as taking a nominal complement. What appears as a clausal complement actually contains a covert head noun, forming a complex NP. This means that both *zài* ‘at’ and *wèile* ‘for/to’ have the same internal structure, i.e.,

<sup>13</sup> As pointed out by a reviewer, a *wèile* phrase can be a reason or purpose expression. The head noun ‘reason’ must be overt for the former.

taking a complex NP as complement; cf. (22) and (23). In the next section, we will present the distinction between the two regarding argument fronting.

## 2.2 Topicalization within prepositional adverbials

In English, argument fronting<sup>14</sup> is taken to be one of the Main Clause Phenomena (MCP) (Hooper & Thompson 1973). Argument fronting cannot occur in some embedded contexts such as the clausal complement of factive verbs (24a), the clausal complement of an NP (24b), a subjunctive complement (24c), and a non-finite clause (24d). In addition, in the type of adverbial clauses that Haegeman (2002, 2004, 2006, 2010ab, 2012) identifies as ‘central’,<sup>15</sup> fronting an object argument makes the sentence unacceptable as shown in (24e).

(24) a. \*John regrets that *this book* Mary read. (Maki et al., 1999: 3)

b. \*Bill’s warning that *flights to Chicago* the company had cancelled never reached us. (Emonds 2004: 77)

c. \*It’s important that *the book* he study carefully.  
(Hooper & Thompson 1973: 485)

d. \*Bill warned us *flights to Chicago* to avoid.  
(Emonds 2004: 77)

e. \*If *these exams* you don’t pass, you won’t get the degree.  
(Haegeman 2012: 156)

<sup>14</sup> Here we take ‘argument fronting’ and ‘topicalization to the left periphery (external topicalization)’ to be the same operation. As will be shown later in section 2.4, topicalization can be to a position after the subject, internal to a TP (internal topicalization), in addition to the pre-subject position, at the CP level (external topicalization) (see, for instance, Paul 2002, 2015).

<sup>15</sup> Haegeman (2004, 2006ab, 2010a, 2012) differentiates English adverbial clauses into two types, central and peripheral adverbial clauses. Central and peripheral adverbial clauses differ in their compatibility with argument fronting: central adverbial clauses disallow argument fronting and they modify the event expressed by the matrix clause; peripheral adverbial clauses allow argument fronting and they are discourse-related. Section 3.3 discusses the central vs. periphery distinction found in Chinese adverbial clauses.

In contrast, argument fronting in Chinese is possible in many embedded contexts: the clausal complement of a factive verb (25a), the complement of a control verb (25b), and an appositive clause (25c).

- (25) a. Zhāngsān zhīdào [<sub>CP</sub> Lǐ xiǎojiě<sub>i</sub>, wǒmen bú xǐhuān *t<sub>i</sub>*].  
 Zhangsan know Li Miss we not like  
 'John knows that, *Miss Li<sub>i</sub>*, we do not like *t<sub>i</sub>*'
- b. Wǒ dǎsuàn [zhè-qún háizi<sub>i</sub>, wǒ yí-ge rén zhǎogù *t<sub>i</sub>*].  
 I plan this-CL children I one-CL person care  
 'I plan *these children<sub>i</sub>*, I take care of *t<sub>i</sub>* by myself'
- c. Wǒ kàn.dào-le [Lǐ xiǎojiě<sub>i</sub>, Zhāngsān bú xǐhuān *t<sub>i</sub>*] de xiāoxi.  
 I see-PERF Li Miss Zhangsan not like DE news  
 'I saw the news that, *Miss Li<sub>i</sub>*, Zhangsan does not like *t<sub>i</sub>*'

Turning to adverbial clauses,<sup>16</sup> we find that in the temporal adverbial introduced by *zài* 'at', external topicalization is not acceptable, as shown in (26a-b).

- (26) a. \**Zài* [Lǐ xiǎojiě<sub>i</sub> wǒ jiàn-dào *t<sub>i</sub>*] de shíhou, Mǎlì zhèng hǎo jīngguò.  
 at Li Miss I meet-PERF DE time Mary just.right pass.by  
 'When *Miss Li<sub>i</sub>* I met *t<sub>i</sub>*, Mary just passed by'
- b. \* *Zài* [Lǐ xiǎojiě<sub>i</sub> wǒ jiàn-dào *t<sub>i</sub>*] yǐqián,  
 at Li Miss I meet before  
 Mǎlì yǐjīng huí.jiā-le.  
 Mary already return.home-PERF  
 'When, *Miss Li<sub>i</sub>* I met *t<sub>i</sub>*, Mary had gone back home'

Note that there is another temporal clause discussed earlier, the one as object of the preposition *cóng* 'from'. This temporal PP does not allow topicalization, either, as illustrated in (27).

<sup>16</sup> Argument fronting is available in clausal adverbial adjuncts; see section 3.3 for the discussion of central and peripheral adverbial clauses in Chinese.

- (27) \*Cóng [Mǎl<sub>i</sub> nǐ juédìng yāoqǐng t<sub>i</sub>] dào xiànzài,  
 from Mary you decide invite to now  
 wǒ yīzhí méi bàoyuàn.  
 I all.the.time not complain  
 ‘From the time Mary, you have decided to invite t<sub>i</sub> till now, I  
 have not complained at all’

However, for the purposive *wéile*, argument fronting is acceptable as shown in example below.

- (28) Wéile Lǐ xiǎojiě nǐ néng jiàndào t<sub>i</sub>, Mǎlǐ xiǎng-le hěnduō bànfǎ.  
 for Li Miss you can met Mary think-PERF many method  
 ‘For the purpose that Miss Li<sub>i</sub>, you can meet t<sub>i</sub>, Mary came up  
 with many methods’

The examples above all have the adverbial clause in the S-initial position. Placing the adverbial clause in the S-final position does not affect the availability of argument fronting.

To account for the contrast in the compatibility with argument fronting, one might call on the categorial difference between prepositions and complementizers, and postulate that *wéile* is a complementizer when taking a clause that allows argument fronting. However, recall that in section 2.1.2, we excluded this possibility and analyzed the *wéile* ‘for/to’ phrase as a preposition taking a complex NP complement, which has the same structure as the *zài* ‘at’ phrase ((22) and (23)). In the next section, we will present a more adequate analysis capitalizing on an intervention effect related to argument fronting, which appears only in relative clauses and not in appositional clauses.

### 2.3 The Intervention effect of A'-binding in temporal adverbial adjuncts

In this section, we argue that the incompatibility of argument fronting in the CP embedded in a temporal adverbial adjunct is due to an intervention effect present in cases containing multiple A'-binding dependencies. The argument is built upon the following two premises:

- (29) i. The temporal adverbial adjunct contains a relative clause derived via movement of a time expression;<sup>17</sup>

<sup>17</sup> See Aoun and Li (2003) chapter 5 for operator movement in relativization constructions in Chinese.



- ii. Topicalization is not possible in relative clauses due to intervention effects.

### 2.3.1 Temporal adverbial clauses as relative clauses

The main evidence for the first premise comes from the ambiguity in high/low construals of temporal adverbial clauses. To illustrate, let us start with the case in English. Example (30) has two readings: in the “high construal” reading, *when* modifies the time of the higher predicate ‘claim’; in the “low construal” reading, *when* modifies the time of the embedded predicate ‘leave’.

- (30) I saw Mary in New York when [<sub>IP</sub> she claimed [<sub>CP</sub> that [<sub>TP</sub> she would leave]]].  
 (i) High construal: at the time that she made the claim.  
 (ii) Low construal: at the time of her presumed departure.  
 (Haegeman 2010a: 635)

This ambiguity has been captured in the following manner. English temporal clauses are headless free relative clauses derived by movement of an operator to the left periphery (Geis 1970, 1975; Larson 1987; Haegeman 2010a, among others). The two interpretations are available due to the presence of two positions occupied by the operator—the base position and the landing site. The high/low construal ambiguity is also found in the Chinese temporal clause of *zài ... de-shíhòu* ‘at...DE-time’.

- (31) Zài Mǎlì shuō tā yào líkāi de shíhòu,  
 at Mary say she will leave DE time  
 Zhāngsān jǔbàn le yī-ge jùhuì.  
 Zhangsan hold PERF one-CL party

‘Zhangsan held a party...

- (i) *at the time that Mary made the claim*’ (high construal)

[<sub>PP</sub> zài [<sub>CP</sub> [<sub>TP</sub> mǎlì shuō [<sub>CP</sub> tā yào líkāi] TIME<sub>i</sub>] de shíhòu<sub>i</sub>]]  
 at Mary say she will leave DE time

- (ii) *at the time of Mary’s alleged departure*’ (low construal)

[<sub>PP</sub> zài [<sub>CP</sub> [<sub>TP</sub> mǎlì shuō [<sub>CP</sub> tā yào líkāi] TIME<sub>i</sub>]] de shíhòu<sub>i</sub>]]  
 at Mary say she will leave DE time

However, the *cóng* ‘from’ temporal, which allows the presence or absence of an overt *de-shíhou* ‘the time when’, shows a very interesting contrast. When *de shíhou* ‘DE-TIME’ is present as the head noun of the *cóng* clause, the same high/low ambiguity obtains; cf. (32). The ambiguity is illustrated with the index on the head noun *shíhou* ‘time’ and the event time (‘TIME’) of the embedded clause.

- (32) Wǒ [<sub>PP</sub>cóng [<sub>DP</sub>[<sub>CP</sub>Mǎlì shuō [<sub>CP</sub>Zhāngsān líkǎi gōngsī]] de shíhou]]  
 I from Mary say Zhangsan líkǎi gōngsī DE time  
 jiù kāishǐ zhǔnbèi wǎnfàn le.  
 then start prepare dinner SFP  
 ‘I started to prepare the dinner ...’  
 (i) *from the time that Mary made the claim* (‘high construal’)  
 [<sub>PP</sub>cóng [<sub>DP</sub>[<sub>CP</sub>Mǎlì shuō [<sub>CP</sub>Zhāngsān líkǎi gōngsī] TIME<sub>i</sub>] de shíhou<sub>i</sub>]]  
 from Mary say Zhangsan líkǎi gōngsī DE time  
 (ii) *from the time of Zhangsan’s presumed departure from the company* (‘low construal’)  
 [<sub>PP</sub>cóng [<sub>DP</sub>[<sub>CP</sub>Mǎlì shuō [<sub>CP</sub>Zhāngsān líkǎi gōngsī] TIME<sub>i</sub>]] de shíhou<sub>i</sub>]]  
 from Mary say Zhangsan líkǎi gōngsī DE time

Importantly, the ambiguity disappears in the absence of *de-shíhou*; cf. (33). ‘Ø’ indicates a covert temporal head noun.

- (33) Wǒ [<sub>PP</sub>cóng [<sub>DP</sub>[<sub>CP</sub>Mǎlì shuō [<sub>CP</sub>Zhāngsān líkǎi gōngsī]] Ø]]  
 I from Mary say Zhangsan líkǎi gōngsī  
 jiù kāishǐ zhǔnbèi wǎnfàn le.  
 then start prepare dinner SFP  
 ‘I started to prepare for dinner ...’  
 (i) *from the time that Mary made the claim* (high construal)  
 (ii) *from the time of Zhangsan’s presumed departure from the company* (\*low construal)

The contrast between these two minimally contrasted sentences suggests that the overtness of the temporal head noun makes a difference. We propose that, when the nominal head is null as opposed to the overt *shíhou* ‘time’, the related time variable only allows local binding, and long-distance operator movement is not possible. The corresponding phenomenon in English and an account of it are presented in Bhatt & Pancheva (2006): the lack of low construal in

*if*-conditionals is due to the constraint that the covert situation/world variables only allow local abstraction, and long-distance operator movement is ruled out on independent grounds.

Regardless of the presence or absence of the nominal head, we predict that when the nominal head is not the head of a relative construction, operator movement is not relevant, and the high/low construal ambiguity should not be available. This is indeed the case with the purpose *wèile* ‘for/to’ adverbial clauses. In (34), the low construal is not available, with or without the overt nominal *zhè-jìàn shì* ‘this matter’. We can only obtain the high construal according to which the purpose of my effort is for Zhangsan to agree, not for Mary to be able to interview the headmaster.

- (34) [<sub>PP</sub> Wèile [<sub>DP</sub> [<sub>CP</sub> Zhāngsān tóngyì]<sup>18</sup>  
           for                   Zhangsan agree  
           [<sub>CP</sub> Mǎlì néng cǎifǎng xiàozhǎng]] (zhè-jìàn shì)],  
           Mary can interview headmaster this-CL matter  
           wǒ zuò-le hěn duō nǚlì.  
           I do-PERF very much effort  
           High construal only: ‘For (the matter of) Zhangsan’s agreeing  
           that Mary could interview the headmaster, I made a lot of ef-  
           fort’

In order to obtain the low construal, the nominal head must be attached directly to the lower clause. In (35), the higher clause is turned into another modifying clause.

- (35) [<sub>PP</sub> Wèile [<sub>DP</sub> [<sub>CP</sub> Zhāngsān tóngyì]-de  
           for                   Zhangsan agree -DE  
           [<sub>CP</sub> Mǎlì néng cǎifǎng xiàozhǎng]] (zhè-jìàn shì)] ,  
           Mary can interview headmaster this-CL matter  
           wǒ zuò-le hěn duō nǚlì.  
           I do-PERF very much effort  
           Low construal only: ‘For the matter that Mary could interview  
           the headmaster which Zhangsan agreed, I made a lot of effort’

<sup>18</sup> This example used the verb *shuō*, minimally contrasted with those in (31)–(33). However, a reviewer noted that the sentence was difficult to interpret and suggested to replace the verb with ‘agree’. The important point is that the low construal is still not available.

The lack of low construal suggests that operator movement is not involved in the *wèile* purposive, in contrast to *zài...de-shíhou* ‘at...time’ and *cóng...de-shíhou* ‘from...time’.

### 2.3.2 *Intervention effects of argument fronting in a relative construction*

We now turn to the second premise that argument fronting interferes with the relative operator-variable binding in relativization. Section 2.2 has shown that argument fronting is possible in many embedded contexts in Chinese, including the appositive clause in (25).

- (36) Wǒ kàndào-le [<sub>CP</sub> Lǐ xiǎojiě, dàjiā  
 I see-PERF Li Miss everyone  
 dōu zhīdào Zhāngsān bú xǐhuān  $t_i$ ] de xiāoxī.  
 all know Zhangsan not like DE news  
 ‘I saw the news that Miss  $Li_i$ , everyone knew Zhangsan did not like  $t_i$ ’

However, argument fronting is not acceptable in a relative construction. (37)a is a relative clause without object fronting. The object in the relative clause is fronted in (37)b, and the sentence is unacceptable.

- (37) a. Wǒ rènshi nà-gè dàjiā dōu zhīdào  $t_j$   
 I know that-CL everyone all know  
 hěn xǐhuān Lǐ xiǎojiě de rén.  
 very like Li Miss DE person  
 ‘I know that person who everyone knows likes Miss Li’
- b. \*Wǒ rènshi nà-gè Lǐ xiǎojiě dàjiā dōu zhīdào  $t_j$   
 I know that-CL Li Miss everyone all knows  
 hěn xǐhuān  $t_i$  de rén.  
 very like DE person  
 ‘I know the person who everyone knows, Miss  $Li_i$ , likes  $t_i$ ’

There are examples that seem to have a fronted object in relative clauses, such as in (38). Nonetheless, there are several empirical considerations arguing for the fronted object *kāfēi* ‘coffee’ being a TP-internal topic occupying a position below the subject—a case of A-binding (Shyu 1995, among others).

- (38) Wǒ xiǎng jiàn-jian nà-ge [kāfēi<sub>i</sub> bú hē t<sub>i</sub>] de kèrén.  
 I want meet-meet that-CL coffee not drink DE guest  
 'I want to meet that guest who, *coffee<sub>i</sub>*, does not drink t<sub>i</sub>'

The first piece of evidence comes from the types of noun phrases allowed in such a topic position. In general, an external topic (the topic preceding a subject) can be a human or non-human noun phrase; but an internal topic following a subject is not acceptable with a human noun, modulo contrastiveness; see Tsao (1977), among others. The first human noun phrase in the relative construction in (39) must be interpreted as a subject, not a topic, regardless of whether a pause follows the human noun phrase. Because an internal topic cannot be a human noun phrase, the fact that 'Miss Li' must be interpreted as a subject in (39) indicates that a relative clause cannot contain an external topic.

- (39) nà-ge [Lǐ xiǎojiě(,) bù xǐhuān] de rén  
 that-CL Li Miss not like DE person  
 'the person that Miss Li does not like'

The second piece of evidence comes from the distribution of sentential adverbs such as *jùshuō* 'allegedly'. Such adverbs can precede or follow a subject and precede an internal topic, but cannot follow an internal topic, as demonstrated in (40a) and (40b). To make (40c) acceptable, one may put a pause after *kāfēi* 'coffee', but in this case, *kāfēi* is interpreted as an external topic.

- (40) a. Jùshuō Lǐsì kāfēi bú xǐhuān hē.  
 allegedly Lisi coffee not like drink  
 'Allegedly, Lisi does not like drinking coffee'
- b. Lǐsì jùshuō kāfēi bú xǐhuān hē.  
 Lisi allegedly coffee not like drink
- c. \*Lǐsì kāfēi jùshuō bú xǐhuān hē.  
 Lisi coffee allegedly not like drink

In a relative clause with subject relativization, when the fronted object *kāfēi* 'coffee' follows the adverb in (41a), the sentence is acceptable. When the fronted object precedes the adverb in (41b), the sentence is unacceptable. This shows that the fronted object is an internal topic.

- (41) a. Wǒ xiǎng jiàn-jian [<sub>DP</sub> nà-ge [<sub>CP</sub> jùshuō  
I want meet-meet that-CL allegedly  
kāfēi<sub>i</sub> bú hē *t<sub>i</sub>*] de kèrén].  
coffee not drink DE guest  
'I want to meet that guest who allegedly *coffee<sub>i</sub>*, does not  
drink *t<sub>i</sub>*.
- b. \*Wǒ xiǎng jiàn-jian [<sub>DP</sub> nà-ge  
I want meet-meet that-CL  
[<sub>CP</sub> kāfēi<sub>i</sub> jùshuō bú hē *t<sub>i</sub>*] de kèrén].  
coffee allegedly not drink DE guest  
'I want to meet that guest who *coffee<sub>i</sub>*, allegedly does not  
drink *t<sub>i</sub>*.

In addition, an internal topic cannot undergo long distance topicalization (see Shyu 1995, among others).

- (42) \*Wǒ xiǎng jiàn-jian [<sub>DP</sub> nà-ge  
I want meet-meet that-CL  
[<sub>CP</sub> Mǎlì kāfēi<sub>i</sub> yǐwéi [<sub>CP</sub> *t<sub>j</sub>* bú hē *t<sub>i</sub>*] de kèrén]<sub>j</sub>.  
Mary coffee think not drink DE guest.  
'I want to meet that guest who Mary, *coffee<sub>i</sub>*, thinks does not  
drink *t<sub>i</sub>*'

Finally, an external topic is not possible in a relative construction with a resumptive pronoun. (43a) has an acceptable relative clause with a resumptive pronoun and without topicalization. (43b) is unacceptable with topicalization.

- (43) a. Zhè shì [<sub>DP</sub> nà-ge [<sub>CP</sub> wǒ sòng gěi tā<sub>i</sub> kāfēi] de kèrén]<sub>i</sub>.  
this is that-CL I send to he coffee DE guest  
'This is the guest<sub>i</sub> to whom I gave (him<sub>i</sub>) the coffee'
- \*b. Zhè shì [<sub>DP</sub> nà-ge [kāfēi<sub>j</sub> wǒ sòng gěi tā<sub>i</sub> *t<sub>j</sub>*] de kèrén]<sub>i</sub>.  
this is that-CL coffee I send to he DE guest  
'This is the guest<sub>i</sub> to whom the coffee<sub>j</sub> I gave (him<sub>i</sub>) *t<sub>j</sub>*'

According to Aoun & Li (2003), relativization in Chinese can be a process of direct movement of the relativized phrase with a gap in the relative clause as in argument relativization, or movement of an

operator as in adjunct relativization, or base-generation of an operator binding a variable in the relative clause as in relative constructions with resumptive pronouns. All the three cases involve A'-binding. As seen in the examples in this section and section 2.2, topicalization to the peripheral external topic position is not possible in any of the relativization constructions. This suggests that relativization blocks external topicalization or external topicalization makes the A'-binding relation unavailable (intervention effect on two A'-binding relations).

Accordingly, it is expected that the temporal *zài* ... *de-shíhou* 'at...DE-time', containing a relative clause, does not allow an external topic in the clause between *zài* and *de-shíhou*. The availability of both high and low construals indicates that the structure involves relative operator movement, as in other adjunct relativization cases. Argument fronting to the external topic position is thus prohibited.<sup>19</sup> By contrast, the preposition *wèile* 'for/to' introduces a complex NP with a null nominal head, and the clause preceding the nominal head is not a relative clause. Argument fronting is not blocked by an A'-binding relation required of relativization and an external topic is acceptable in purpose *wèile* 'for/to' adverbials.<sup>20</sup>

## 2.4 *zài* ...*yǐqián* /*yǐhòu* 'before/after'

In the beginning of section 2, we mentioned that it was not obvious whether *yǐqián* 'before' and *yǐhòu* 'after' were temporal nominals equivalent to *de-shíhou* 'DE-time', or postpositions (Djamouri *et al.* 2013; Paul 2015). On the one hand, they pattern with *de-shíhou* 'DE-time' in disallowing argument fronting in the embedded CP; cf. (26b). On the other hand, they do not have the ambiguity of high/low construal:

<sup>19</sup> This analysis is similar to the intervention account for English temporal adverbial clauses by Haegeman (2010a, 2012).

<sup>20</sup> A reviewer noted that there was one more difference between *zài* 'at' and *wèile* 'for' phrases: the adverbial *ér* 'then, subsequently' in the main clause is possible with the purposive/reason *wèile* 'for', *yīnwèi* 'because', but not with *zài* 'at'. This difference might have to do with the meaning of the adjuncts, like *rúguǒ* 'if' adverbials prefer to have a main clause with *jiù*, but *jiù* is not possible with *suīrán* 'although' adverbials. However, we leave this issue for further research.

- (44) [<sub>PP</sub>Zài [<sub>7P</sub>[<sub>CP</sub>Zhāngsān shuō [<sub>CP</sub>Mǎlì líkāi Niǔyuē]] yǐqián]],  
 at Zhangsan say Mary leave New York before  
 wǒ jiù yǐjīng dào-le.  
 I then already arrive-SFP  
 ‘I have arrived ...’  
 (i) *before the time that Zhangsan made the claim.*  
 (high construal)  
 (ii) *before the time of Mary’s alleged departure from New York.*  
 (\*low construal)

However, when an overt temporal nominal is present as in *shíjiān-yǐqián* ‘time-before’, the ambiguity occurs.<sup>21</sup>

- (45) [<sub>PP</sub>Zài [<sub>7P</sub>[<sub>DP</sub>[<sub>CP</sub>Zhāngsān shuō [<sub>CP</sub>Mǎlì líkāi Niǔyuē]]  
 at Zhangsan say Mary leave New York  
 de shíjiān] yǐqián]], wǒ jiù yǐjīng dào-le.  
 DE time before I then already arrive-SFP  
 ‘I have arrived ...’  
 (i) *before the time that Zhangsan made the claim.*  
 (high construal)  
 (ii) *before the time of Mary’s alleged departure from New York.*  
 (low construal)

The requirement for an overt temporal nominal head to make the low construal possible has been observed in the case of *cóng* ‘from’ phrases. Our analysis is that, even though *cóng* takes a clausal complement, the clausal complement actually should be followed by a nominal temporal head to reflect the interpretation according to which *cóng* takes a point of time as its object. An overt temporal head *shíhou* ‘time’ can undergo long-distance operator movement from the more deeply embedded CP, whereas a covert head cannot, which makes the low construal unavailable (recall the locality condition discussed

<sup>21</sup>We expect the low construal to disappear when the overt head noun is ‘the matter’, because ‘the matter’ and the preceding clause are not in a relativization relation. This prediction is born out. The following sentence is not ambiguous:

(i) [<sub>PP</sub>Zài [<sub>7P</sub>[<sub>DP</sub>[<sub>CP</sub>Zhāngsān shuō [<sub>CP</sub>Mǎlì líkāi Niǔyuē]] nà-jiàn shì] yǐqián]],  
 at Zhangsan say Mary leave New York that-CL matter before  
 wǒ jiù yǐjīng dào-le.  
 I then already arrive-SFP  
 ‘I have arrived ...’  
 (i) High construal: *before the time that Zhangsan made the claim*  
 (ii) \*Low construal: *before the time of Mary’s alleged departure from New York.*



earlier). We suggest that *yǐqián* ‘before’ and *yǐhòu* ‘after’ can be analyzed in the same way. They themselves do not encode time points but require one, i.e., a nominal head *shíhòu* ‘time’. In the absence of the lexical item *shíjiān* or *shíhòu* ‘time’, there should be a covert temporal head. This explanation for the set of data is in favor of the postposition analysis of *yǐqián* ‘before’ and *yǐhòu* ‘after’; see Paul (2015, chapter 4) for more details on this proposal. (For a similar analysis of English prepositional temporal clauses, see Demirdache & Uribe-Etxebarria 2004; Haegeman 2012: 203–210.)

## 2.5 Section summary

This section has focused on the internal structure of adpositional adverbials containing an embedded CP. In section 2.1, we showed that the CP embedded in the *wèile* ‘for/to’ phrase and *cóng* ‘from’ phrase is headed by a covert noun. We thus argued for the prepositional status of *cóng* ‘from’ and *wèile* ‘for/to’, and adopted the same internal structure,  $[_{PP}[_{DP}[_{CP}]]]$ , as for *zài* ‘at’ phrases. Section 2.2 examined the P complement, and found a two-way distinction in terms of the availability of topicalization. Section 2.3 provided an explanation based on the intervention effect operative in relative clauses but not appositive clauses. Finally, because the properties of *zài...yǐqián/yǐhòu* expressions follow from the presence of a null temporal nominal head, our analysis is in favor of their category as postposition. (Also see Pan & Paul section 3.5.2, this issue.)

## 3. The syntax of clausal adverbials

This section turns to adverbial clauses expressing conditional, concessive, conditional-concessive, causal, and inferential meanings. While such adverbial clauses are easily distinguishable from complement clauses and relative clauses, it is not quite straightforward how to determine a division between adverbial clauses and coordinate sentences in Chinese, because sometimes conjunction words also occur in the main clause. Section 3.1 argues that a distinction should be made between the group containing single conjunction words and the other group with paired conjunction words. The two clauses with paired-conjunctions are shown to be root sentences (i.e., *unembedded root clauses*), according to factors of clause order, *wh*-question scope,

and variable-binding. Section 3.2 discusses the contrast between the “main clause” and “adverbial clause”, and between S-initial adverbial clauses and S-final ones. Section 3.3 presents the distinction between central and peripheral adverbial clauses in Chinese, following Hageman (2002, 2004, 2006, 2010ab, 2012) and others. Three sets of contrasts will be presented, leading to finer empirical generalizations on adverbial clauses in Chinese, which have not been explored much in the literature. Our analysis of the internal and external syntax of different adverbial clauses will be presented in section 3.4.

### 3.1 Single conjunction and paired conjunction

The adverbial clause in a complex sentence is usually introduced with a “conjunction,” as illustrated in (46). The main clause can contain a semantically correlated adverb. Li & Thompson (1981: 632-640) use the label “linking element” for both the conjunctions in the adverbial clause and the adverb in the main clause. This captures the generalization that both conjunctions and adverbs are members of the set called “linking element,” whose extension is the elements that are otherwise absent in the two clauses when they are not linked under certain semantic relations such as condition, reason, concession, etc. However, this does not mean that the conjunction words and adverbs are of the same category.

(46) Conjunction word introducing the adverbial clause and the correlating adverb in the main clause

- a. [búdàn...], [S yě/hái ...] (S: subject in the main clause)  
*not only*                      *also/still*
- b. [suīrán... ], [S hái/què ...]  
*although*                      *still/yet*
- c. [rúguǒ... ], [S jiù/cái/yě ... ]  
*if*                                  *then/only.then/also*
- d. [yīnwèi ...], [S jiù/cái/yě ... ]  
*because*                      *then/only.then/also*

Li & Thompson (1981: 633) note that the initial conjunctions are movable, because they can be clause-initial, or preceded by adjuncts, subjects, or fronted arguments. Meanwhile, the adverbs in the main clause are nonmovable in that they have the fixed position of being post-subject and preverbal, hence TP-internal (also see Pan & Paul section 6.3, this issue). The adverbs in (46) have other meanings and usages synchronically. Their function of clausal linkage, as well as their grammatical contribution in complex sentences should be taken as relevant to their usages as functional adverbs (i.e., grammaticalization). A case study of *jiù* ‘then’ in conditional complex sentences in (46c) is presented in section 6 of the Part 2 article, which may apply to other similar adverbs. There we argue that calling *jiù* in conditional complex sentences a “correlative adverb,” as is the common practice in dictionaries and descriptive grammars, is descriptively true but explanatorily inadequate. Readers are referred to the Part 2 article for more details.

Next, we compare the single conjunction structures above with the paired conjunctions in (47), which lists a sample of such conjunctions (for more examples, see Chao 1968:790-795; Li & Thompson 1981:637-638; Xing 2011).

(47) Examples of paired-conjunctions

- a. [búdàn ...], [érqiě [S yě/hái ...]] (S: subject in the main clause)  
*not only but.also also/still*
- b. [suīrán...], [dànshì [S hái/què ...]]  
*although but still/yet*
- c. [rúguǒ ...], [nà(me) [S jiù/yě]]  
*if then then/also*
- d. [yīnwèi...], [suǒyǐ [S jiù/cái/yě]]  
*because therefore then/only.then/also*

Paired conjunction structures have a conjunction word each in the adverbial clause and the main clause. The first conjunction word of each pair (the one in the adverbial clause) is the same as that of (46), and the second conjunction word occurs in the main clause. While the first conjunction word can be preceded by a fronted argument, adjunct, or subject, as mentioned above, the second conjunction

word always occurs at the initial position of the main clause (Li & Thompson 1981: 653). That is, the second conjunction precedes all the elements in the left periphery of the main clause (e.g., topic, focus, and sentential adverbs).

The second conjunction in (47c) *nà(me)* ‘then’ contains a demonstrative *nà* meaning ‘that’ and the expression *nà(me)* can be treated as a demonstrative pronoun, which is in line with the observation on the source of correlative proforms cross-linguistically (Bhatt & Pancheva 2006: 666). The second conjunction *suǒyǐ* ‘therefore’ in (47d) can be separated into two bound morphemes: *suǒ* is literally ‘place’, ‘location’, and in ancient Chinese it is also a pronoun; *yǐ* is a conjunction meaning ‘so that’. Thus, *suǒyǐ* is on a par with “*there+fore*” in English. Due to the pronominal property of *suǒ*, the conjunction is used not only to introduce a result clause, but also to serve other usages related to discourse-organizing functions, such as rephrasing or summarizing the preceding discourse (cf. Wang & Huang 2006: 998-1002), which is similar to English *so*.

While each of the paired conjunctions may have different semantic and syntactic properties, there are three properties distinguishing this group from those with single conjunctions. The first one concerns clause order. In a complex sentence with a single conjunction, the main clause can appear in the initial position, leaving the adverbial clause in the final position.<sup>22</sup> See (48a-b) for examples (conjunction words underlined). However, with a paired conjunction, the main clause under normal circumstances cannot occur in the initial position, as illustrated by (48c-d) (also see Tang 1990: 97-98; Pan & Paul section 3.2.2, this issue).

- (48) a. Suīrán tiānqì hǎo, Mǎlì hái shì dài-le yǔsǎn.  
 although weather good Mali still bring-PERF umbrella  
 ‘Although the weather is good, Mary still brought an umbrella.’
- b. Mǎlì hái shì dài-le yǔsǎn, suīrán tiānqì hǎo.  
 Mali still bring-PERF umbrella although weather good  
 ‘Mary still brought an umbrella, although the weather is good.’

<sup>22</sup> While it leads to a marked clause order when these adverbial clauses follow the main clause (i.e., S-final adverbials), these examples are by no means ungrammatical. The marked cases when adverbial clauses are in the S-final position will be the topic of the Part 2 article in this series.

- c. Suīrán tiānqì hǎo, dànshì Mǎlǐ hái shì dài-le yǔsǎn.  
 although weather good but Mali still bring-PERF umbrella  
 ‘Although the weather is good, (but) Mary still brought  
 an umbrella.’
- d. \*Dànshì Mǎlǐ hái shì dài-le yǔsǎn, suīrán tiānqì hǎo  
 but Mary still bring-PERF umbrella although weather good  
 ‘(\*But) Mali still brought an umbrella, although  
 the weather is good.’

The second difference concerns the acceptability of a *wh*-phrase in the S-initial adverbial clause with the matrix scope question reading. As schematized in (49a), when there is no conjunction in the main clause, a *wh*-phrase in the preceding conditional clause can have wide scope reading. (49b) is an example. The *wh*-phrase is inside a conditional clause, but it can take scope over the entire complex sentence, as indicated in the translation. It is not an echo question because the sentence can be used without a preceding context.<sup>23</sup> It has long been observed that argument *wh*-questions in Chinese show island insensitivity (cf. Huang 1982; Aoun & Li 1993; Tsai 1994, among others).

- (49) a. [<sub>adv.cl.</sub> *rúguǒ...wh...*] [<sub>main cl.</sub> (\**nàme*) ...] ?  
if then

- b. Rúguǒ Zhāngsān mǎi shénme,  
If Zhangsan buy what  
(\*nàme) Mǎlì jù huì kāixīn ne?  
then Mali then will happy SFP  
'What is the  $x$  such that Mary will be happy if Zhangsan  
buys  $x$ ?'  
[10]

The important contrast is that (49b) would be unacceptable with *nàme* 'then' in the main clause, with or without *rúguò* 'if'. Another example is given in (50), in which the *wh*-phrase is in the subject position. Similarly, in order for the complex sentence to be a question, *nàme* 'then' cannot be present.

<sup>23</sup> We have noticed that some native speakers did not accept (48b) because of the presence of *rúguǒ* ‘if’. Without *rúguǒ*, the matrix question reading in (48b) becomes possible for them. However, the preceding clause is nonetheless interpreted as a conditional adverbial without *rúguǒ*.

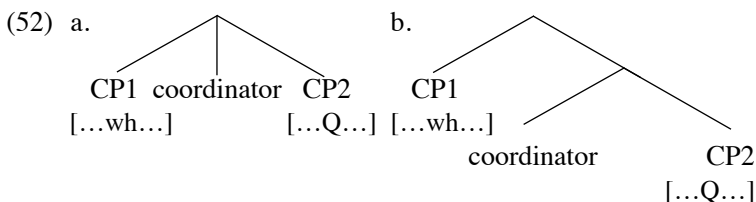
- (50) Rúguǒ shéi lái cānjiā huódòng,  
 if who come attend activity  
 (\*nàme) Mǎlì jiù huì kāixīn ne?  
 then Mali then will happy SFP  
 ‘Who is the x that Mary will be happy if x comes  
 to attend the activity?’

A caveat of the configuration in (49a) is that not all adverbial clauses can contain a *wh*-phrase with scope over the entire complex sentence.

Adverbial clauses can be divided into two types: central adverbial clauses and peripheral adverbial clauses (cf. Haegeman 2002, et seq.). The two examples above are central adverbial clauses. When a *wh*-phrase occurs in peripheral adverbial clauses like concessive *suīrán*, it does not have a matrix scope reading. An example is given in (51a). It is odd to say it ‘out-of-a-blue’. It is only possible as an echo question as in (51b).

- (51) a. #Suīrán Lǐsì mǎi-le shénme, Mǎlì hái shì bú kāixīn?  
 although Lisi buy-PERF what Mary still not happy  
 Intended: ‘What is the x such that Mary is still not happy despite  
 the fact that Lisi bought x?’
- b. Nǐ gāngcái shuō [suīrán Lǐsì mǎi-le shénme,  
 you just say although Lisi bought what  
 Mǎlì hái shì bú kāixīn]?  
 Mary still not happy  
 ‘You just said although Lisi bought what, Mary is still  
 not happy?’

We will return to these cases in section 3.4 and provide an account of them. For the present, however, it is sufficient to point out that the two differences noted above can be explained if complex sentences with paired conjunctions are structurally different from those with single conjunctions. The complex sentences with paired conjunctions have coordinate structures, either in the flat multiple branching structure in (52a), or binary-branching in (52b) (e.g., Munn 1993).



The first difference discussed above about fixed clause order is typical of coordinate structures. The clause introduced by the coordinate conjunction cannot be moved to initial position. This is also observed in English as shown in (53) (cf. Quirk et al., 1985: 921-922; Verstraete 2004, 2005, among others).

- (53) \*But the critically ill and those who were unable to be moved stayed, about 100 patients left the hospital yesterday.  
(Verstraete 2004: 823)

As for the second difference, according to either of the two coordinate structures in (52), the *wh*-phrase is in CP1, while the question operator is in the main clause CP2. In neither structure is the *wh*-phrase in the scope of the question operator, which is in the left periphery of the main clause CP2, and thus cannot have question scope over the entire coordinate sentence.

Variable-binding provides the third difference to support the structural distinction between complex sentences with single conjunctions and those with paired conjunctions. In (54), without *nàme* 'then' in the main clause, the quantificational subject in the main clause can bind the null pronoun (*pro*) in the preceding conditional clause. When *nàme* 'then' is present, the *pro* cannot have a bound interpretation. The failure of variable-binding when *nàme* is present can be attributed to the coordinate structure.

- (54) Rúguǒ *pro*<sub>i</sub> méi yǒu tōngguò zhècì kǎoshì  
if not have pass this exam  
(\**nàme*) měi ge xuéshēng dōu bìxū chóngxīn cānjiā kǎoshì.  
then every student all must again participate exam  
'If *pro*<sub>i</sub> does not pass the exam, (\*then) every student<sub>i</sub> must take the exam again.'

### 3.2 Illocutionary force and contrasts within complex sentences

In this and the following section, we discuss complex sentences with conjunction words only in adverbial clauses. We distinguish three sets of contrasts in such complex sentences based on the notion of illocutionary force, as listed in (55). Such contrasts have been studied in other languages such as English and German (cf. Ross 1970; Rutherford 1970; Hooper & Thompson, 1973; Haiman & Thompson, 1984; Quirk *et al.*, 1985; König & Van der Auwera, 1988; Haegeman, 2002 *et seq.*; Verstraete, 2005, among many others). For Chinese, while some of the empirical observations have been recorded, we bring in some new discoveries and provide a unified formal analysis.

(55) a. Adverbial clause vs. main clause

b. S-initial adverbial clause vs. S-final adverbial clause

c. Central adverbial clause vs. peripheral adverbial clause

Because the notion of illocutionary force is crucial in our analysis, we first set up empirical observations and theoretical considerations around the theoretical concept of “illocutionary force” in section 3.2.1. Section 3.2.2 illustrates the contrast between the main and the adverbial clause. Section 3.2.3 presents the distinctive properties of reason and concessive clauses in the S-final position, which are accounted for if they are analyzed as coordinated root sentences. Then the third contrast in (55c) will be demonstrated and analyzed in 3.3, and our analysis presented in 3.4.

#### 3.2.1 Empirical and theoretical set-up: illocutionary force

Force Projection (Rizzi 1997) has been associated with several notions at the syntax-discourse interface: (i) illocutionary acts: assertion, question, request, warning, etc. (cf. Austin 1962: 98–102; in this paper, an illocutionary act is taken to mean the same thing as a speech act); (ii) clause type: declarative, interrogative, imperative, and exclamative; (iii) the speaker’s attitude-related expressions, such as sentential adverbs *allegedly* and sentence final particles (SFPs).



It is empirically necessary to disassociate (i) illocutionary acts from (ii) clause types. Generally, each type of illocutionary act has its corresponding clause type, e.g., making an assertion—declarative; asking a question—interrogative; giving a command—imperative. There are cases where they do not match, or where one speech act can be realized by multiple clause types. For instance, in (56a), while the second sentence is an interrogative, it expresses the speaker's assertion that "he could not afford anything." The interrogative in (56b) is meant to be an act of requesting, not an information-seeking act.

(56) a. John is penniless. What could he possibly afford going shopping?

b. Could you close the window, please? (#Yes, I could.)  
(Coniglio & Zegrean 2012: 246)

The grammatical realization of (iii), the speaker's attitude-related expressions, can be divided into two groups depending on whether they are at the clausal periphery or inside the clause. The group occurring in the clausal periphery (i.e., CP domain) can be discourse markers (cf. Haegeman 2014), sentential adverbs, and SFPs. A typical case of this kind is attitude-denoting SFPs in Chinese. Some examples are given in (57). We call this group of SFPs high SFPs, because in word order, they follow other SFPs such as the sentential *le*. Theoretically, they are analyzed as taking up the top layer of functional projections in the left periphery (cf. Paul 2014, 2015; Pan 2015; Pan & Paul 2016; Erlewine 2017).

(57) SFPs related to Speaker's attitude:

*a*, *ya*: appreciation, surprise, realization, sympathy, anger, disappointment, etc.

*ba*: used at the end of an imperative sentence to soften the tone of a request

*ou*: warning reminder

*bei*: indication of something being obvious

*ne*: emphasis on the statement to attract the attention of the hearer

As has been observed cross-linguistically, there is a close relation between the speaker-oriented modality expressed by different SFPs and speech acts (e.g., Law 2002; König & Siemund 2007; Paul 2014; Pan 2015, among others). This is also the case for Chinese SFPs. For instance, the utterance in (58), without any SFPs, could be a command, a suggestion, a request, a reminder, etc., depending on the context. With different SFPs attached to the end and intonation, the utterance can realize various speech acts, as paraphrased by the English sentences in parentheses.

- (58) Nǐ      bā      diǎn      dào.  
       you    eight o'clock arrive  
       'You arrive at 8 o'clock.'

a. [...] *a/ya* (low tone, stress on *bā diǎn* '8 o'clock'): a realization/complaint about the situation ("you arrive at eight (it's too late)").

b. [...] *ba* (low tone): a request with softened tone ("why don't you arrive at eight").

c. [...] *ou* (high tone): a reminder ("don't forget to arrive at eight").

d. [...] *bei* (high tone): a suggestion ("you can arrive at eight", as it is obviously a good choice).

e. [...] *ne* (low tone, stress on *bā diǎn* '8 o'clock'): a reminder ("it is eight o'clock that you (are supposed to) arrive");

f. [...] *ne* (high tone, stress on *bā diǎn* '8 o'clock'): seeking confirmation ("you arrive at 8 o'clock, right?")

In addition to high SFPs, some SFPs are related to aspectual interpretations, such as the sentential *le* (*le2* hereafter). These aspect-related SFPs are analyzed as instantiating a lower functional head (e.g., low C in Paul 2015, vP edge functional heads in Erlewine 2017). We call these SFPs low SFPs. (59) lists the low SFPs that have been proposed to be in this group. We will show that low SFPs are possible in all adverbial clauses, while high SFPs are only acceptable in S-final reason and concessive clauses.

- (59) a. *le2*: “currently relevant state” (Li & Thompson 1981)
- b. *lái2zhe*: recent past (Paul 2015)
- c. *ne*: durative aspect (Constant 2011)
- d. *éryǎi*: ‘only, just’ (Erlewine 2017, Pan 2015)
- e. *bàle*: ‘only, just’ (Pan 2015)

The group of discourse particles refers to those occurring inside a clause (i.e., within the TP domain) in this article. While they are not located in the clausal periphery, like SFPs, they nonetheless have a discourse-related function that expresses the speaker’s attitude and adds the speaker’s subjective point of view to the utterance. A typical example is the modal particles in German (see Coniglio 2006, 2007, Frey 2012 for discussion; see Bayer & Struckmeier 2017 for an overview of discourse particles crosslinguistically). Compared to clausal adverbs and SFPs, the meaning and usage of discourse particles are much subtler, and thus it is often difficult to find equivalent words in translation.

Discourse particles inside clauses are also found in Chinese. They reflect the attitude of the actual speaker (in a non-embedded root sentence) or the potential speaker (the subject of bridge verbs such as *say* and *believe*). Because synchronically they have multiple usages with more concrete adverbial meanings, they have been collapsed into other groups of adverbs such as degree, evaluation, or functional adverbs (Chao 1968: 781-784; Li & Thompson 1981: 328-339; Zhu 1982: 195-196; Ernst 2014: 57-58). The discourse particles we are discussing here are different from the “movable attitude adverb” in Li & Thompson (1981: 321-322) and the subject-oriented adverb in Ernst (2014: 56-57), such as *hǎoxiàng* ‘seemingly’ and *xiǎnrán* ‘apparently’, which can occur at the clausal periphery (either before or after the topic). The semantics of discourse particles in Chinese is not the topic of this article. We only utilize their distribution to show the empirical contrast in different types of adverbial clauses. Here we briefly present one example as an illustration.

*Yòu*, as a functional adverb, means ‘again’. As a discourse particle, it only occurs in negative root clauses (including sentential complements of bridge verbs), or rhetorical questions with a negative mean-

ing. It expresses the speaker's forceful refuting attitude and conveys unsatisfied or upset emotions, because the speaker deems that the content expressed in the negative clause is obvious and indisputable (cf. Wang 1985/[1947]: 231; Hole 2004; Ye 2004; Shi 2005). We gloss *yòu* as "Attitude" and use "obviously" in the translation. *Yòu* occurs in a negative root clause in (60a), and a rhetorical question with a negative meaning in (60b). (60c) is an example with context.

- (60) a. Zhāngsān *yòu* bú shì gùyì de. (Clause-mate negation)  
 Zhangsan Attitude not be intentional DE  
 'Zhangsan obviously was not intentional (to have done something).'
- b. Tā-de nàxiē huà *yòu*  
 his those words Attitude  
 yǒu shénme jiàzhí ne? (Rhetorical question)  
 have what value SFP  
 'What value do his words have?' = 'His words obviously have no value.'
- c. A: *You should break up with your girlfriend. She's no good for you.*  
 B: Zhè *yòu* bú guān nǐ-de shì!  
 this Attitude not involve your thing  
 'It's obviously none of your business.'

A negation in the matrix clause does not make the occurrence of *yòu* in the embedded object clause acceptable, as in (61a). (61b) with *yòu* in the matrix clause and negation in the embedded clause does not yield the intended reading. These two examples are acceptable if *yòu* is interpreted as 'again'. Section 3.3 will discuss the relevance of such TP-internal discourse particles to the contrast between central and peripheral adverbial clauses.

- (61) a. \*Wǒ méi rènwéi tāmen *yòu* shì gùyì de.  
 I not think they Attitude be intentional DE  
 \*'I didn't think they were obviously intentional.'  
 ok 'I didn't think they were intentional again.'

- b. \*Wǒ yòu      rènwéi tāmen bú shì gùyì      de.  
 I Attitude think they not be intentional DE  
 \*‘I obviously think they were not intentional.’  
 ok ‘I, again, think they were not intentional.’

It has been observed that some discourse particles require the root context, i.e., occurring in root clauses, and certain sentence types (cf. Coniglio 2006, Bayer & Struckmeier 2017). This is also observed in Chinese. For the former property, we observe that a discourse particle is not acceptable in a relative clause:

- (52) wǒ zhǎodào-le nà-ge [(\*)yòu]      bú shì gùyì  
 I find-PERF that-CL Attitude not be intentional  
 zuò.cuò]      de xuéshēng.  
 do.wrong DE student  
 ‘I found the student that obviously did not do wrong intention-ally.’

For the latter point, the discourse particle *nándào* is traditionally labeled as a modal adverb. It only occurs in a *-ma* interrogative (*yes/no* question) and is used to express a negative epistemic bias by the attitude-holder (cf. Xu 2016). (63a) is acceptable but (63b) is not. (63b) would be acceptable if it is uttered with a rising intonation, which necessarily turns it into a rhetorical interrogative.

- (63) a. Zhāngsān nándào zuò.cuò-le      ma?  
 Zhangsan Attitude do.wrong-PERF yes-no  
 ‘Did Zhang do (it) wrong?’  
 (= ‘Zhangsan did not do (it) wrong.’)
- b. \*Zhāngsān nándào méi yǒu zuò.cuò.  
 Zhangsan Attitude not have do.wrong

The empirical observations above are summarized in (64). The generalizations hold cross-linguistically and are also true for Chinese. We can see that, in terms of grammatical markings, “illocutionary act” is more closely related to SFPs than to clause types. This is an important generalization which will feature in our analysis later.

- (64) a. There is no one-to-one correspondence between clause types and illocutionary acts.
- b. Sentence Final Particles are closely related to illocutionary acts.
- c. Discourse Particles are dependent on the root context and clause type, and can be embedded.

We now turn to the analysis. Clause typing and speaker-oriented expressions are related to the presence of illocutionary force (ForceP) in the CP domain (Rizzi 1997; Bayer 2001; Haegeman 2002, 2004, 2012; Zagana 2007, among others). More recently, there have been proposals to split the ForceP, and assign separate projections to the notions reviewed above. For instance, Paul (2014, 2015) and Pan & Paul (2016) postulate a three-layered CP for Chinese in (65). The Attitude Phrase (AttP for short) encodes the speaker attitude and hosts SFPs as its head. The *yes-no* question particle *ma* in Chinese instantiates the Force layer. Pan (2015) further breaks the AttP in Chinese into two layers; but both layers are supposed to be for SFPs, and discourse particles are not discussed. Therefore, it seems that the previous proposals on split Force cannot fully accommodate (64).

(65) Low C < Force < Attitude

As for analyses based on other languages, we also see a general tendency to split the Force into two layers. The lower layer is still in charge of clause typing, but the upper layer is a speech act layer interfaced with discourse. Coniglio & Zegrean (2012) label the highest projection of the CP layer as ILL(ocutionary Force), where the speaker's intentions are encoded. It seems that the ILL projection also encodes illocutionary act, as seen from their example cited in (56b) above. Below the ILL is the C(lause) T(ype) projection, which specifies the clause type and licenses discourse particles. Haegeman (2014), following Hill (2007), proposes a Discourse Projection in West Flemish hosting speech acts and the discourse markers at the sentence periphery. Combined with ForceP, the set-up of the two functional projections could potentially capture (64).

The main purpose of this section is not accounting for (64) in Chinese, although our analysis will eventually achieve this. The pur-

pose of reviewing the empirical observations and previous analyses is to guide our studies on adverbial clauses. Based on the discussion above, we can draw the initial generalization that, if some clauses are restricted to a certain clause type (e.g., declarative), they could have a Force head with impoverished content, or simply lack a Force head and have declarative as the default realization of clause type. Likewise, if some clauses do not allow speaker-oriented modal expressions (either discourse particles, sentential adverbs, or the SFPs), they do not have certain projections (e.g., ForceP, DiscourseP, or AttP).

### 3.2.2 *The first contrast: main vs. adverbial clauses*

Consider first the contrast between main and adverbial clauses based on clause types. Main clauses, either in S-initial or S-final positions, allow a full range of clause types. The four examples in (66a-d) below show that the main clause can be a declarative (66a), a *yes-no* interrogative (66b), a *wh*-interrogative (66c), or an imperative (66d).

- (66) a. Rúguǒ tiānqì yùbào shuō yào xià yǔ,  
           if weather forecast say will rain  
           Lǐsì jiù huì dài sǎn,  
           Lisi then will bring umbrella  
           ‘Lisi will bring an umbrella if the weather forecast says it’s  
           going to rain.’
- b. Rúguǒ tiānqì yùbào shuō yào xià yǔ,  
           if weather forecast say will rain  
           Lǐsì huì dài sǎn ma?  
           Lisi will bring umbrella *yes-no*  
           ‘Will Lisi bring an umbrella if the weather forecast says it’s  
           going to rain?’
- c. Rúguǒ tiānqì yùbào shuō yào xià yǔ,  
           if weather forecast say will rain  
           Lǐsì huì zuò shénme?  
           Lisi will do what  
           ‘What will Lisi do if the weather forecast says it’s going to  
           rain?’

- d. Rúguǒ tiānqì yùbào shuō yào xià yǔ,  
 if weather forecast say will rain  
 jìde dài sǎn.  
 remember bring umbrella  
 ‘Remember to bring an umbrella if the weather forecast says  
 it’s going to rain.’

By contrast, adverbial clauses, when in the S-initial position, cannot be of any clause type other than declarative. In (67a) the initial conditional clause contains a *yes-no* question, and in (67b), it contains an imperative clause. Both examples are unacceptable.

- (67) a. \*Rúguǒ Lǐsì mǎi chē ma, Mǎlì huì hěn gāoxìng?  
 if Lisi buy car *yes-no* Mali will very be.happy  
 \*‘Mary will be happy if does Lisi buy a car?’  
 b. \*Rúguǒ bié mǎi chē, Mǎlì huì shēngqì.  
 if don’t buy car Mali will be.angry  
 \*‘Mary will be angry If don’t buy a car.’

Therefore, the main clause has no restrictions on its clause type; whereas the adverbial clause can only be declarative. In the next section, we will show that this is not exactly the case for some adverbial clauses in the S-final position. They are identified as peripheral adverbial clauses in Haegeman (2002 et seq.). We will analyze them as coordinated root sentences.

### 3.2.3 The second contrast: S-initial vs. S-final position

In this section, we provide two pieces of evidence based on clause types and SFPs to show the distinctive properties of some S-final reason and concessive clauses, as opposed to the S-initial ones.

First, we observe that some reason and concessive clauses, when occurring at the S-final position, allow non-declarative clause types such as imperative, interrogative, and exclamative. (68a) is an example where the S-final *yīnwèi* ‘because’ clause contains an exclamative. Moving the *yīnwèi* ‘because’ clause to the initial position is not acceptable as in (68b).



- (68) a. Mǎlì yīnggāi jià.gěi Lǐsì,  
 Mary should marry.to Lisi  
 yīnwèi tā zhēnde hǎo yǒuqián a!  
 because he truly very rich SFP  
 'Mary should marry Lisi, because truly how rich he is!'

- b. Yīnwèi Lǐsì zhēnde hǎo yǒuqián (\*a),  
 because Lisi truly very rich SFP  
 Mǎlì yīnggāi jià.gěi tā.  
 Mary should marry.to he

Turn to an example of an interrogative in the S-final adverbial clause. The S-final *yīnwèi* 'because' clause in (69a) contains a question. By contrast, S-initial reason clauses do not allow an interrogative as in (69b).

- (69) a. Xīngqīwǔ kěndìng méi rén yuànyì jiābān,  
 Friday surely no person be.willing.to work.overtime  
 yīnwèi shéi bú xiǎng zǎodiǎnr huí jiā?  
 because who not want early return home  
 'Surely nobody is willing to work overtime on Friday,  
 because who does not want to go home early?'
- b. \*Yīnwèi shéi bú xiǎng zǎodiǎnr huí jiā,  
 because who not want early return home  
 xīngqīwǔ kěndìng méi rén yuànyì jiābān.  
 Friday surely no person be.willing.to work.overtime

Note that the interrogative reason clause in (69a) is not an information question, but receives a rhetorical question interpretation, which is similar to a declarative clause like "everybody wants to go home early." An S-final adverbial clause cannot be a genuine information question; the interrogative (70) is unacceptable. This shows that although the clause type of the adverbial clause is interrogative, its illocutionary act is to make an assertion.

- (70) a. Xīngqīwǔ kěndìng méi rén yuànyì jiābān,  
 Friday surely no person be.willing.to work.overtime  
 \*yīnwèi shéi xiǎng zǎodiǎnr huí jiā?  
 because who want early return home

\*‘Surely nobody is willing to work overtime on Friday, because who wants to go home early?’

The S-initial vs. S-final positional contrast in terms of clause types is also observed in English (cf. Verstraete 2005, 2007: 179–181; Haegeman 2002). The S-final *although* and *because* can host an imperative, interrogative, or an exclamative clause, as shown in (71), respectively. The imperative in the *because* clause in (71a) means “our expenses are very high,” and the rhetorical interrogative in the *although*-clause in (71b) expresses that “nobody could have foreseen they would use it like that.” Overall, the three examples have “assertion” as the illocutionary act, despite the different clause types.

(71) a. I only made US\$ 6000 in the whole year, and even like the next two years, I was just like getting by, because don’t forget that our expenses are very high.

b. I shouldn’t have left that coathanger lying around, although who would have thought they would use it like that?

(Verstraete 2005: 621)

c. They are doing as well they are because how great a mom she is. (COOA<sup>24</sup>)

When in the initial position, *because* and *although* clauses are restricted to the declarative type. An imperative or rhetorical question is not allowed, as illustrated by the contrast with an interrogative in (72).

(72) a. So jobs are going begging! Is it any wonder, because who on earth can afford to have a decent standard of living in the most highly taxed and expensive country to live in in the world. It’s all right for Ali Baba Bláir and his fatcat friends.

b. So jobs are going begging! \*Because who on earth can afford to have a decent standard of living, is it any wonder?

(Verstraete 2007: 247)

<sup>24</sup> Corpus of Contemporary American English.

Turn to the second observation bearing on the positional contrast. We observe that while low SFPs are possible in adverbial clauses of different semantic types and positions, high SFPs can occur in S-final reason and concessive clauses, but not adverbial clauses of other semantic types in the S-final position, nor any S-initial ones. In (73a), the *bei* particle expresses the speaker's attitude of taking something as obvious, and its occurrence is possible in the S-final reason clause. However, when the reason clause is in the S-initial position, the presence of the particle becomes infelicitous, as in (73b). Some native speakers we consulted commented that (73b) would be acceptable if the S-initial reason clause had a longer pause after it.

(73) Context: *Hair dryer may cause damage to the hair, however...*

- a. Dōngtiān hěnduō rén huì yòng diànchuīfēng,  
 winter many people will use dryer  
 yīnwèi fāngbiàn bei. (CCL<sup>25</sup>)  
 because convenient SFP  
 'Many people will use a hair dryer in winter, because it is convenient.'
- b. Yīnwèi fāngbiàn (\*bei), dōngtiān  
 because convenient SFP winter  
 hěnduō rén huì yòng diànchuīfēng.  
 many people will use dryer

The fact that the *bei* in (73b) is unacceptable is in line with Pan's (2015) generalization that attitude-related SFPs convey a strong subjective opinion and judgement of the speaker, are confined to root contexts, and cannot appear in embedded clauses such as relative clauses and sentential subjects. Although (73a) seems to be a counter-example to this generalization, the S-final reason clause is a root sentence with a Discourse Projection hosting the SFP, as we will propose shortly.

Pan & Paul in section 2 of this issue compare two analyses of the "pause particle" that occurs at the end of adverbial clauses. One option is that the pause particle realizes the head of the projection Topic Phrase. The other one is that it is an SFP, given the homophony

<sup>25</sup> Peking University CCL Online Corpus. Examples from this corpus are noted by (CCL).

between pause particles and SFPs (see Pan & Paul in this issue for more details). However, we observe a tonal difference between the pause particle *ne* and the attitude-denoting *ne*. While the surface pitch height of the neutral tone in Chinese is affected by the tone of the preceding syllable, the two tones of *ne* are not. As a pausing *ne* occurring after a topic phrase or an S-initial conditional clause,<sup>26</sup> the *ne* in (74a) has a high tone regardless of the tone of the preceding syllable. It is a pausing particle; crucially, it is not accompanied with the speaker's attitude such as appreciation, surprise, boasting, exaggeration, or blaming (Zhu 1982: 213; Paul 2015: 277-279). This contrasts with the *ne* in (74b), which has the function of conveying the speaker's attitude. The *ne* in (74b) has a low tone, regardless of the tone of the preceding syllable. The pausing *ne* cannot have a low tone as the attitude *ne*, and vice versa.

- (74) a. Rúguǒ tā qù yìdàlì ne, wǒ jiù qù měiguó.  
           if       he go Italy TOP I then go U.S.  
           'If he goes to Italy, then I'll go to the U.S.'

- b. Tā qù yìdàlì ne!  
      he go Italy SFP  
      '(Look!) he's going to Italy!'

In terms of co-occurrence with adverbial clauses, the pausing *ne* occurs in the S-initial conditional clause, and the speaker's attitude *ne* can only be in the S-final reason and concessive clauses. The *ne* in (75a) is a pausing *ne* with a high tone and the *suīrán* 'although' clause has a rising intonation; it does not convey any speaker's related attitude such as appreciation or exaggeration. On the other hand, the *ne* in (75b) has a low tone and is an attitude-denoting *ne*. It indicates the speaker's attitude of appreciation about the fact conveyed in the sentence.<sup>27</sup>

<sup>26</sup> Constant (2014, section 6.3.6) observes that S-initial reason clauses resist *ne*, which is analyzed as a contrastive topic marker.

<sup>27</sup> Conditional clauses do not allow SFPs even when they are S-final. The example in (i) is acceptable with a *yīnwèi* 'because' clause.

(i) Nǐ yuánliàng Lǐsì ba, yīnwèi/\*rúguǒ tā méi.yǒu zuò.cuò ya.  
     you forgive Lisi SFP because/if he not.have do.wrong SFP  
     'Why don't you forgive Lisi, because/\*if he did not do anything wrong.'

- (75) a. Wǒ suīrán méi yǒu duōshǎo qián *ne*,  
 I although not have much money TOP  
 mǎi zhè-běn huàbào hái shì mǎi-de qǐ. (CCL)  
 buy this-CL pictorial still buy-be.able.to  
 ‘Although I don’t have much money, I can still afford this  
 pictorial.’
- b. Zài rénmen nǎo zhōng tā yǒngyuǎn shì qīngchūn  
 at people head inside he forever be youth  
 suīrán tā zhǎng-de lí huā hái yuǎn-de hěn *ne*. (CCL)  
 although he grow from flower still far-much SFP  
 ‘In people’s mind he is always young, although he is far  
 from being (as pretty as) a flower.’

In a series of research published by Haegeman, a conditional *rúguǒ* clause is labeled as a central adverbial clause (CAC), which does not have a Force Projection to license attitude-related expressions such as SFPs. In contrast, the reason *yīnwèi* and concessive clauses are called peripheral adverbial clauses (PAC) and have a ForceP. Note that although the presence/absence of a ForceP captures the contrast between conditional clauses and reason/concessive clauses, it does not accommodate the S-initial vs. S-final positional contrast for reason/concessive clauses. It might be suggested that all the S-initial clauses (including reason, concessive, conditional) are CACs and S-final ones are PACs. However, this is not true because S-final conditional clauses cannot host high SFPs (cf. fn 37). There must be something different about the S-final reason and concessive clauses discussed in this section. Before presenting our analysis, we introduce the third contrast in Chinese adverbial clauses.

### 3.3 Central and peripheral adverbial clauses

Mostly due to works on adverbial clauses in English (Haegeman 2002, 2004, 2006, 2010ab, 2012) and German (Frey 2012; Frey and Truckenbrodt 2015), two types of adverbial clauses are distinguished: central adverbial clauses (CACs) and peripheral adverbial clauses (PACs). It is important to note that the distinction between CACs and PACs in those works and in this article is syntactic rather than lexical. That is, although conjunction words have their own meanings, the distinction is based on a series of correlated syntactic properties of

the complex sentence, instead of the specific conjunction word. This approach accommodates the cases that can function as a CAC or a PAC. For instance, the two adverbial clauses in (76) are introduced by the same conjunction word *if*. (76a) is a CAC that expresses the condition for the realization of the event in the main clause, and argument fronting is unacceptable. In (76b), the conditional is a PAC, which expresses a proposition that brings to the context a contrast on the proposition expressed in the main clause, and argument fronting in the conditional is acceptable.

- (76) a. \*If these exams you don't pass, you won't get the degree.  
(Haegeman 2012: 156)
- b. If some precautions they did indeed take, many other possible measures they neglected. (ibid.: 159)

Referencing Haegeman (2012:180, Table 4.4), we summarize the syntactic properties of CACs and PACs in (77) in Chinese. PACs but not CACs exhibit root clause phenomena (behaving like main clauses or complements of bridge verbs), such as argument fronting for English. The discussion of the external syntax, i.e., property (a) to (c), will be in section 3.4. Property (d) and (e) will be illustrated with examples in this section.

(77) TABLE 1. Two types of adverbial clause  
(adapted from Haegman 2012: 180)

	CACs	PACs
a. In scope of matrix negation	+	-
b. In scope of matrix interrogative/focus	+	-
c. Variable-binding into the adverbial clause	+	-
d. Illocutionary force	-	+
e. Speaker-oriented markers	-	+
f. Argument fronting (English) <sup>28</sup>	-	+

<sup>28</sup> While an external topic in the left periphery is not acceptable in the temporal *zài ...de-shíhòu* 'at ...time' (cf. section 2.2), other adverbial clauses located at S-initial or S-final positions allow an external topic (cf. Pan & Paul, section 6.2, this issue for examples). Therefore, topicalization cannot tell the difference between CACs and PACs in Chinese. This difference is probably due to the fact that more options are utilized to derive topic structures in Chinese than in English.

The property (d) says that a PAC has an illocutionary force, regardless of its position in relation to the main clause. Evidence comes from the empirical observation that modal expressions (in the form of high adverbs and discourse particles) are allowed in PACs, whereas such expressions in CACs are unacceptable (for English see Haegeman 2004 et seq.; German: Coniglio 2007; Italian: Coniglio and Zegrean 2012). For instance, in English, CACs like temporal and conditional clauses are not compatible with some sentential adverbs and speaker-oriented modal expressions (Ernst 2007; Zagona 2007; Haegeman 2004, 2012).

(78) a. \*If they luckily arrived on time, we will be saved.

b. \*John will do it when he may have time.

In German, discourse particles such as *ja* (literally ‘yes’) may occur in PACs as in the concessive clause in (79a), but not in CACs, such as the temporal clause in (79b).

(79) a. Er hat die Prüfung nicht bestanden, trotzdem  
           he has the exam not passed even though  
           er *ja* recht intelligent ist.  
           he *JA* quite intelligent is

b. Maria ging oft in die Staatsoper,  
       Maria went often to the state-Opera-House  
       als sie (\**ja*) in Wien lebte.  
       when she *JA* in Vienna lived

Similar to English and German, discourse particles in Chinese can occur in PACs but not in CACs. For example, when *yòu* (literally ‘again’), introduced in section 3.2.1, occurs in the inferential clause in (80a), it conveys the speaker’s strong intention in persuading the addressee that “you might as well forgive him (Zhāngsān) since *obviously* he did not do this intentionally.” By contrast, the occurrence of *yòu* in the conditional clause in (80b) is judged to be infelicitous.

- (80) a. Jírán Zhāngsān yòu bú shì gùyì de,  
 since Zhangsan Attitude not be intentional DE  
 nǐ jiù yuánliàng tā ba.  
 you then forgive him SFP  
 ‘Since Zhangsan obviously is not (in doing something), you  
 might as well forgive him.’
- b. Rúguǒ Zhāngsān (\*yòu) bú shì gùyì de,  
 If Zhangsan Attitude not be intentional DE  
 nǐ jiù yuánliàng tā ba.  
 you then forgive him SFP  
 ‘You might as well forgive Zhangsan if he (\*obviously) is  
 not intentional (in doing something).’

Another set of examples is given in (81a-b). The discourse particle usage of the adverb *yě* can be seen as derived from its adverbial meaning ‘also’ (cf. Shi 2005). It softens the tone of the speaker. Example (81a) is similar to (80a), only with the discourse particle adverb *yòu* replaced by *yě*. The context for (81a) can also be of persuasion; but with *yě*, the sentence overall conveys the speaker’s intention of pleading on Zhangsan’s behalf so as to persuade the addressee that “you might as well forgive him (Zhāngsān) since *after all* he did not do this intentionally.” The occurrence of *yě* in the conditional clause in (81b) is not acceptable. The sentence is good with *yě* being interpreted with its adverbial meaning of ‘also’.

- (81) a. Jírán Zhāngsān yě bú shì gùyì de,  
 since Zhangsan Attitude not be intentional DE  
 nǐ jiù yuánliàng tā ba.  
 you then forgive him SFP  
 ‘Since Zhangsan is not intentional (in doing something)  
*after all*, you might as well forgive him.’
- b. Rúguǒ Zhāngsān (\*yě) bú shì gùyì de,  
 If Zhangsan Attitude not be intentional DE  
 nǐ jiù yuánliàng tā ba.  
 you then forgive him SFP  
 ‘You might as well forgive Zhangsan if  
 \*he is not intentional (in doing something) *after all*...’  
 ok: he *also* is not intentional (in doing something) ...’



The TP-internal discourse particles can also be used in S-final reason and concessive clauses. The S-final reason clause in (82) contains *nándào*, which is used to reinforce a rhetorical question and express a negative epistemic bias by the attitude-holder (cf. (63)).

- (82) Qíshí, duìyú wǒ-de zhǒngzhong xíngwéi,  
 actually for my various behavior  
 wǒ zìjǐ yě wú fǎ zuò yī-gè hélǐ-de jiěshì,  
 I self also no method make one reasonable explanation  
 yīnwèi rén nándào bú shì zhè yàngzi de ma? (CCL)  
 because people Attitude not be this case DE yes-no  
 ‘Actually, as for my various behaviors, I myself don’t even  
 have any reasonable explanation, because isn’t it the case for  
 human beings?’

As has been pointed out, the distinction between PACs and CACs is not based on lexical items (i.e., conjunction words). A *rúguǒ* ‘if’ conditional clause is generally construed as a CAC and does not allow discourse particles like *yòu*. Nonetheless, a conditional can be construed as a PAC, which is called premise-conditional in Haegeman (2002), because it “expresses a premise that leads to the question being raised in the associated clause (117)”; cf. (76b). The premise-conditional can also be found in Chinese, such as (83).

- (83) (Preceding context) ‘My mom doesn’t allow me to work here.  
 I’m afraid if she sees through my lies, and knows that I’m  
 working here, and with you...’  
 Rúguǒ nǐ yòu bú shì zhēnxīn de, ...nà wǒ  
 if you Attitude not be truly DE then I  
 ‘If you obviously are not truly in love with me...then I’  
 —nà wǒ jiù shāng-le wǒ mā de xīn le. (CCL)  
 then I then break-PERF my mom DE heart SFP  
 ‘then I would be breaking my mom’s heart.’

To recapitulate, unlike attitude SFPs, the presence/absence of attitude discourse particles in Chinese does not hinge on the clause order (S-initial vs. S-final), but on the type of adverbial clauses (central vs. peripheral). The empirical observations so far are summarized in (84).

(84) TABLE 2. Left periphery of different types of adverbial clauses<sup>29</sup>

	S-initial		S-final	
	CAC	PAC	PAC	
			CAC conditional	reason concessive
a. Illocutionary Act	-	-	- assertion	assertion
b. SFPs	-	-	- -	yes
c. TP-internal discourse particles	-	yes	- yes	yes
d. Clause Type	declarative only			a full range <sup>30</sup>

While in this article we do not discuss the clause size of embedded clauses, we would like to point out that the empirical tests shown in the table above can be applied to other types of clauses such as relative clauses and complement clauses. According to the tests in (84), relative clauses have the properties in (85).

- (85) Relative clause
- a. Illocutionary act: -
  - b. SFPs: -
  - c. TP-internal discourse particles: -
  - d. Clause types: declarative

Relative clauses allow only the declarative clause type. In addition, as shown in (62), repeated in (86), the discourse particle *yòu* is not acceptable.

- (86) wǒ zhǎodào-le nà-ge [(\*yòu)  
I find-PERF that-CL Attitude  
bú shì gùyì zuò.cuò] de xuéshēng. (= (62))  
not be intentional do.wrong DE student  
‘I found the student that obviously did not do wrong intention-  
ally.’

<sup>29</sup> To our knowledge, none of the previous proposals on the structure of Chinese left-periphery have attempted to accommodate the fine-grained empirical distinctions above.

<sup>30</sup> The range of clause types is restricted by the illocutionary force of the sentence. When the illocutionary force is assertion, declaratives are the most common. Interrogatives need to be interpreted as rhetorical questions. Imperatives are harder but not impossible. See (69)a in the text.

Complement clauses of bridge verbs have the following properties according to (84).

(87) Complement clause of bridge verbs

- |                                     |                            |
|-------------------------------------|----------------------------|
| a. Illocutionary act:               | -                          |
| b. SFPs:                            | -                          |
| c. TP-internal discourse particles: | yes                        |
| d. Clause types:                    | declarative, interrogative |

Looking from the bottom up, we see that the complement clause can be declarative or interrogative, cf. (88). The discourse particle *yòu* is allowed in the embedded clause as in (89), but an SFP cannot occur in the complement clause (cf. Paul 2014; Pan 2015). As for the illocutionary act, even when the embedded clause has the interrogative clause type as in (88), the whole sentence is an assertion.

- (88) [<sub>CP</sub> Tā xiǎng zhīdào    [<sub>CP</sub> wǎnfàn dàodǐ    chī shénme].  
          he want know               dinner on.earth eat what  
          ‘He wants to know what on earth (he) will have for dinner.’

- (89) Tāmen juéde    [Zhāngsān yòu       bú shì gùyì       de].  
          they think    Zhangsan Attitude not be intentional DE  
          ‘They think that Zhangsan was obviously not intentional.’

(90) shows the properties of complement clauses of factive verbs such as *fǒurèn* ‘deny’ and *àonǎo* ‘be upset’. In (91), the occurrence of *yòu* in the complement clause is judged to be unacceptable.

(90) Complement clause of factive verbs

- |                                     |             |
|-------------------------------------|-------------|
| a. Illocutionary act:               | -           |
| b. SFPs:                            | -           |
| c. TP-internal discourse particles: | -           |
| d. Clause types:                    | declarative |

- (91) Tāmen fǒurèn    [Zhāngsān (\*yòu)       bú shì gùyì       de].  
          they deny    Zhangsan Attitude not be intentional DE  
          ‘They denied that Zhangsan was (\*obviously) not intentional.’

### 3.4 Analyses: the internal and external syntax of adverbial clauses

#### 3.4.1 *The internal syntax*

Our proposal to be presented will be built on the split Force proposal reviewed in section 3.2.1, specifically from Haegeman's (2014) assumption on Discourse Projection (also see Hill 2007 "Speech Act Projection"). The main ideas are given in (92).

- (92) a. DiscourseP is the highest projection of a root sentence (non-embedded root clause). It...
- i. encodes illocutionary acts, and
  - ii. can be realized by an attitude-denoting SFP.
- b. ForceP is the highest projection of a root clause, It...
- i. realizes clause typing, and
  - ii. encodes a deictic center to license and anchor discourse particles.

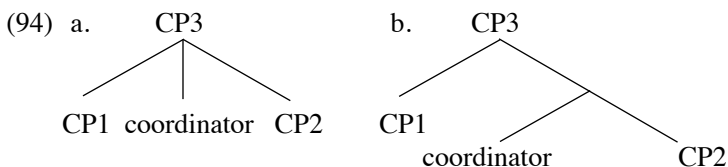
We take ForceP and DiscourseP to be head-initial, but note that the head directionality of these functional projections and the treatment of SFPs are not critical to the discussion here, because we are focusing on the relation between clause size and the presence/absence of certain functional heads.<sup>31</sup>

A DiscourseP captures the connection between SFPs and speech acts presented in section 3.2.1. Only root sentences express speech acts, represented by the DiscourseP. A root sentence cannot always be an undominated CP in phrase structure when coordinated clauses are analyzed as two root sentences. Accordingly, we employ the

<sup>31</sup>Different options are available to linearize SFPs to derive the fact that they must appear in the sentence final position; one could be complement-to-specifier movement (cf. Lin 2006; Hsieh & Sybesma 2011). Alternatively, due to the clitic-like property of SFPs, there can be a spell-out rule stipulating that SFPs must be spelled out as enclitics. Still another approach is not to take SFPs as the heads of functional projections. Instead, SFPs are morphological insertions of the syntactic and semantic features in relevant heads, along the lines of Distributed Morphology (Halle & Marantz 1993). A fourth analysis (Tang 2015) takes some SFPs as complements to a coordinate head F, and the preceding clause in the specifier position of FP: [<sub>FP</sub> XP [<sub>F</sub> F [SFP]]]. The motivation is that some SFPs have a verbal origin, and they are analyzed as forming serial verbal structures with the preceding XP. In this analysis, SFPs are not heads, either. See also Kayne (2015) for similar ideas for morphemes that occur in the S-final position in other languages. See Part 2 for our proposal.

definition of root sentence in Downing (1970), which uses the auxiliary definition of “predicate sentence” in (93a). A predicate sentence can be viewed as a CP with its own VP. A root sentence is defined as in (93b). According to that definition, the coordinate CPs, in either structure in (94a-b), are root sentences. The CP3s that dominate them are not predicate sentences because they do not have a predicate of their own.

- (93) a. A predicate sentence  $CP_p$  is an S node immediately dominating a VP.  
 b. A root sentence is a CP that is not dominated by a predicate sentence  $CP_p$ .



The two definitions in (93) can be rewritten with the current phrase structure, as in (95). The CP nodes in (94) can be replaced by “DiscourseP.”

- (95) a. A predicate DiscourseP is a DiscourseP that contains a VP and the DiscourseP node is not separated from the VP node by another DiscourseP node.  
 b. A root sentence is a DiscourseP that is not dominated by a predicate DiscourseP.

Let us turn to the Force head. It is present in all root clauses. As a root sentence is an unembedded root clause, it also has a ForceP. This projection encodes clause typing (cf. Cheng 1991). As another possible function of Force, it is not a novel proposal that the content of some projection in the CP domain encodes a deitic center (cf. ‘logophoric center’, Bianchi 2003; ‘evaluation center’, Landau 2015). According to Landau (2015: 39):

... attitude verbs as quantifiers over sets of contexts, a context is taken to be a tuple of coordinates, which are nothing but variables, each associated with its own indexical descriptive content:  $i = \langle \text{AUTHOR}(i), \text{ADDRESSEE}(i), \text{TIME}(i), \text{WORLD}(i) \rangle$ . We may think of the coordinates of  $i$  (the embedded context) as *arguments* of  $C$  (the complementizer). While these arguments are normally not present in the syntax (being implicit, so to speak), they may project syntactically under certain circumstances.

The  $C$  in the quotation is taken to be equivalent to the Force head. In our analysis, the deictic center is key in the licensing and anchoring of the attitude expressed by the discourse particle to its author. The implementation of the two functional heads will be demonstrated in more detail below.

### 3.4.1.1 *S-final reason and concessive clauses*

We claim that some S-final reason and concessive clauses are root sentences, and not PACs (see below for analysis of PACs). Structurally they are coordinated with the preceding clause. The proposal is in line with Verstraete (2005, 2007), in which the S-final *because* and *although* clauses in English are the second conjunct in a coordinate structure. With this analysis, calling the preceding clause the “main” clause is a misnomer because it is an independent root sentence. This claim is further corroborated with the interpretation of some S-final reason clauses (cf. Rutherford 1970; Hooper & Thompson 1973: 492-495; Quirk *et al.* 1985: 1075-1077; Haegeman 2012: 161-162, among others). For instance, Rutherford (1970) observes that in example (96) a comma intonation (i.e., a pause) is necessary, because without it, “because I don’t see her” has to be understood as the reason for Jenny’s not being here, which leads to a semantic anomaly.

(96) Jenny isn’t here, because I don’t see her. (Rutherford 1970: 100)

To express (96) in Chinese, an S-final reason clause must be used. An S-initial reason clause causes the same odd interpretation as in the English example without a comma intonation.

(97) a. Mǎlì bú zài zhèlǐ, yīnwèi wǒ méi kànjiàn tā.  
 Mary not at here because I not see her  
 ‘Mary is not here, because I don’t see her.’

- b. #Yīnwèi wǒ méi kànjiàn tā, Mǎlì bú zài zhèlǐ.  
           because I not see her Mary not at here  
           ‘Because I don’t see her, Mary is not here.’

As mentioned in the introduction (also see Part 2; Pan & Paul sections 3.2.2 and 3.4.1, this issue), the order “adverbial-main” is the default word order for adverbial clauses in Chinese. However, (97a) indicates that the S-initial position is not appropriate for certain reason clauses. Then what is special to the causal relation in (97a)? According to Rutherford (1970), who follows Ross (1970), the main clause is embedded in a higher performative expression like “I say to you that...”. The reason clause explains why the speaker has made the preceding assertion. This indicates that the main clause is an independent illocutionary act (i.e., asserting). The reason clause, as an explanation for the asserting act, is not part of the asserting act. Hooper & Thompson (1973: 492–495) have made the same observation and called the main clause “asserted.” Therefore, in our analysis, the preceding clause has its own DiscourseP. The S-final reason clause also has its own DiscourseP and is a root sentence. The existence of a DiscourseP accounts for the occurrence of SFPs, as noted in section 3.2.3. It is also expected that the following example is possible with an SFP in each of the conjuncts, the so-called main clause and adverbial clause:

- (98) wǒmen hái shì zǒu ba,  
       we still go SFP  
       suīrán yǒu rén bù gāoxìng ne!  
       although have people not happy SFP  
       ‘Let’s still go, although there are people unhappy (about it).’

Some native speakers we consulted observed that (97b) would be acceptable if the second clause begins with *suǒyǐ* ‘therefore’, as in (99). This is predicted by our analysis that complex sentences with paired-conjunctions include two coordinated root-sentences. Both sentences contain an independent speech act, hence DiscourseP. Note that an emphasizing SFP *ya* is acceptable in the preceding *yīnwèi* sentence in (99).

- (99) Yīnwèi wǒ méi kànjiàn tā (ya), suǒyǐ  
 because I not see her SFP therefore  
 Mǎlǐ bú zài zhèlǐ.  
 Mary not at here  
 ‘Because I don’t see her, (therefore I make the claim that) Mary  
 is not here.’

### 3.4.1.2 CACs, and clause size

CACs do not have a ForceP. Without a Force head, the clause type is realized as the default declarative (cf. Verstraete 2005). CACs also cannot have discourse particles due to the lack of a Force head. In other words, CACs have a smaller clause size compared to PACs or root sentences and root clauses. The size of other subordinate clauses such as relative clauses and clauses embedded under different types of verbs should also be different, as shown by the results of empirical tests in (85), (87), and (90). We leave it for future research to present a comprehensive analysis of the sizes of different types of clauses.

### 3.4.1.3 PACs and the licensing of discourse particles

PACs do not have a DiscourseP to license high SFPs, which are associated with the illocutionary act. Nonetheless, they have a ForceP to license discourse particles. The licensing and anchoring of discourse particles each obey a locality condition. The first one is relevant to the example with a relative clause in (86), repeated in (100) below. In this example, the matrix clause has a Force projection, but the ForceP in the matrix clause cannot license the discourse particle in the embedded relative clause. We take this as one of the two locality conditions on the licensing of discourse particles as stated in (101a-b).

- (100) wǒ zhǎodào-le nà-ge [(\*yòu) bú shì gùyì  
 I find-PERF that-CL Attitude not be intentional  
 zuò.cuò] de xuéshēng.  
 do.wrong DE student  
 ‘I found the student that obviously did not do wrong intention-  
 ally.’



(101) a. A discourse particle must be licensed by a Force head *in the local clausal domain*.

b. The discourse particle must be anchored to the closest c-commanding author.

The locality condition stated in (101b) concerns the anchoring of the discourse particle (i.e., epistemic reference point). In example (89), repeated in (102) below, *yòu* expresses the attitude of *tāmen* ‘they’, the subject of the matrix verb, but not that of the actual speaker.

(102) *Tāmen juéde [Zhāngsān yòu bú shì gùyì de].*  
 they think Zhangsan Attitude not be intentional DE  
 ‘They think that Zhangsan was obviously not intentional.’

We call the subject of the matrix verb in such a case “potential author,” and the speaker, “actual author.” We state this condition as in (101b). The anchoring of the discourse particle is realized via variable-binding of the AUTHOR(i) coordinate in the Force head. The locality condition requires that the AUTHOR(i) variable be bound by the closest c-commanding DP that assumes the role of an author. In the case of the complement clause of a bridge verb, AUTHOR(i) is bound by the subject of the matrix clause, which is the potential author. In the case of the non-embedded root sentence, we assume that there is a covert superordinate clause with a performative verb (“I say/ask ...”) (cf. Ross 1970, Rutherford 1970, Stowell 2007). The AUTHOR(i) coordinate is thus interpreted deictically, referring to the actual author.

The example (103) below illustrates the licensing and anchoring mechanisms.

(103) *Jírán Zhāngsān yòu bú shì gùyì de,*  
 since Zhangsan Attitude not be intentional DE  
*nǐ xiǎng zěnmē zuò?*  
 you want how do  
 ‘Since Zhangsan obviously is not intentional (in doing something), what do you want to do?’

The inferential clause in this instance has a Force head to license the discourse particle *yòu*. It is anchored to the actual speaker, not the

addressee ‘you’. This is because the PAC is not c-commanded by the subject in the main clause. The AUTHOR(i) variable cannot be bound by the subject in the main clause. Note that we further predict that such a discourse particle can never be anchored to the subject of its own clause because the Force head of the clause is higher than the subject. This is indeed so. In addition, scope-related tests will prove that this is indeed the structure for PACs, as shown in the next section.

### 3.4.2 *The external syntax of central and peripheral adverbial clauses*

Scope-related tests distinguish CACs and PACs regarding their structure in relation to the main clause. We claim that the analysis of English CACs and PACs as in Haegeman (2012: 169-171) can be adapted for Chinese. CACs are merged below the ForceP of the main clause (vP/TP-adjunct), while PACs are merged above the ForceP of the main clause (CP-adjunct). Three scope-related tests will be considered: quantificational binding into the adverbial clause, the scope of the negation/modal in the main clause, and the scope of interrogative force in the main clause. First, the different acceptabilities between the two minimally contrasting sentences in (104) a and (104)b show that a quantificational subject in the main clause can bind into an S-final CAC but not PAC.

(104) a. Měi-ge xuéshēng<sub>i</sub> dōu kěyǐ qù, rúguǒ tā<sub>i</sub>-de jiāzhǎng tóngyì.  
 every student all can go if his parent approve  
 ‘Every student<sub>i</sub> can go, if his<sub>i</sub> parent approves.’

b. \*Měi-ge xuéshēng<sub>i</sub> dōu huì qù,  
 every student all will go  
 suīrán tā<sub>i</sub>-de jiāzhǎng bù tóngyì.  
 although his parent not approve  
 ‘\*Every student<sub>i</sub> will go, although his<sub>i</sub> parent did not approve.’

Binding into an S-initial CAC from the matrix subject position is judged to be more difficult, if not completely impossible, as in (105a). On the other hand, binding into an S-initial PAC is robustly unacceptable, as in (105b).

- (105) a. ?Rúguǒ tā<sub>i</sub>-de jiāzhǎng tóngyì, měi-ge xuéshēng<sub>i</sub>  
 if his parent approve every student  
 dōu kěyǐ qù.  
 all can go  
 ‘If his<sub>i</sub> parent approves, every student<sub>i</sub> can go.’
- b. \*Suīrán tā<sub>i</sub>-de jiāzhǎng bù tóngyì,  
 although his parent not approve  
měi-ge xuéshēng<sub>i</sub> dōu huì qù.  
 every student all will go  
 ‘\*Although his<sub>i</sub> parent did not approve, every student<sub>i</sub> will go.’

The quantificational DP in the main clause can take the position of the subject or the sentential topic. The contrast in the availability of variable binding indicates that the CAC can be attached below the subject/TopP while the PAC is outside the scope of the subject/TopP. Note that it would be a challenge to take the variable binding relation in (104a) to be conditioned by the precedence configuration instead of a c-command relation. First, taking this step would require us to define a domain (in terms of complex sentence) within which precedence can license variable binding. This is an undesirable assumption because variable binding across two sentences (106a) or coordinated sentences (106b) generally is impossible.

- (106) a. \*Měi-ge rén<sub>i</sub> dōu lái-le.  
 every person all come-PERF  
Tā<sub>i</sub> dài-le yì-píng jiǔ.  
 he bring-PERF one-CL wine  
 ‘\*Everyone<sub>i</sub> has arrived. He<sub>i</sub> brought a bottle of wine.’
- b. \*Měi-gè rén<sub>i</sub> dōu lái-le,  
 every person all come-PERF  
 erqiě tā<sub>i</sub> dài-le yì-píng jiǔ.  
 and he bring-PERF one -CL wine  
 ‘\*Everyone<sub>i</sub> has arrived, and he<sub>i</sub> brought a bottle of wine.’

Secondly, PACs cannot appear in the scope of negation (and/or modal) in the main clause, but CACs can. In English and German, when CACs follow the main clause, they can fall within the scope of the matrix negation with a proper intonation as in (107) and (108).

(107) Mary doesn't yell at Bill if she is hungry. (Bhatt & Pancheva 2006)

a. ...but if she is asleep. ( $\neg > if$ )

b. ...since hunger keeps her quiet. ( $if > \neg$ )

(108) Peter wird nicht kommen, sobald er kann,  
 Peter will not come as-soon-as he can  
 sondern sobald es Clara erlaubt.  
 but as-soon-as it Clara allows  
 'Peter will not come as soon as he can, but as soon as Clara  
 lets him.' (Frey 2012: 407)

PACs, however, cannot be in the scope of negation. This is illustrated by the German example in (109) below.

(109) \*Peter wird nicht kommen, obwohl er arbeiten muss,  
 Peter will not come although he work must  
 sondern obwohl er schlafen sollte.  
 but although he sleep should (Frey 2012: 407)

In Chinese, both CACs and PACs, when following the main clause, are outside of the scope of negation and/or modals, the noted contrast nonetheless shows up when they are placed sentence-medially following the negation/modal. In this configuration, CACs, but not PACs, can occur below the negation/modal. As shown in the continuation clause in (110b), it is the constituent in the conditional clause that is negated by the matrix negation. For the examples of PACs in (111), the intended readings are not possible (also see Pan & Paul section 5.1, this issue). PACs simply cannot occur after modals or negation and fall within their scope domain. Therefore, even if the negation marker *bù* in (111) is absent, the sentences are still unacceptable.

(110) a. Zhāngsān bú huì [rúguǒ Mǎlì chū qián jiù cānjiā], ( $\neg > if$ )  
 Zhangsan not will if Mary pay money then participate  
 'Zhangsan will not participate if Mary pays,

b. dàn huì [rúguǒ Lǐsì chū qián jiù cānjiā].  
 but will if Lisi pay money then participate  
 but will participate if Lisi pays'

- (111) a. \*Zhāngsān bú huì [jìrán Mǎlì chū qián jiù cānjiā].  
 Zhangsan not will since Mary pay money then participate  
 Intended: 'For Zhangsan<sub>i</sub> it is not the case that he<sub>i</sub> will participate since Mary pays.'
- b. \*Zhāngsān bú huì  
 Zhangsan not will  
 [suīrán Mǎlì chū-le qián háishì bù cānjiā].  
 although Mary pay-PERF money still not participate  
 Intended: 'For Zhangsan<sub>i</sub> it is not the case that he<sub>i</sub> will not participate although Mary has paid.'

Thirdly, CACs, but not PACs, can be in the scope of A-not-A questions and questions with the marker *ma*. This is illustrated by the possible context for (112a-b), which shows that the conditional clause is within the domain of the question.

- (112) 'I know that you are coming to the party. But since you don't like Mary, ...'
- a. Rúguǒ Zhāngsān yāoqǐng Mǎlì nǐ lái-bú-lái?  
 if Zhangsan invite Mary you come-not-come  
 'Will you come if Zhangsan invites Mary?'
- b. Yàoshi Zhāngsān yāoqǐng Mǎlì nǐ huì lái ma?  
 if Zhangsan invite Mary you will come Q  
 'Will you come if Zhangsan invites Mary?'

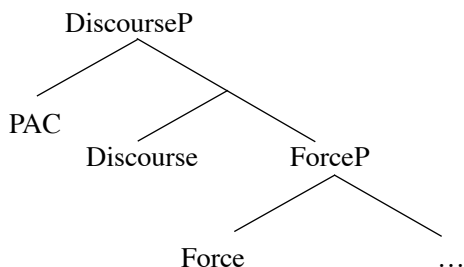
However, in the two examples in (113), the concessive clause cannot be within the domain of the question, as shown by the unavailability of the intended reading. The corresponding English sentence as in the translation is not possible with the intended reading, either. The content of the concessive clause has to be interpreted as presupposed.

- (113) a. #Suīrán Zhāngsān yāoqǐng-le Mǎlì, nǐ lái-bú-lái?  
 although Zhangsan invite-PERF Mary you come-not-come  
 'Although Zhangsan has invited Mary, will you come?'  
 Intended: 'Will you come in spite of the fact that Zhangsan has invited Mary?'

- b. #Suīrán Zhāngsān yāoqǐng-le  
 although Zhangsan invite-PERF  
 Mǎlì, nǐ hái shì huì lái ma?  
 Mary you still will come yes-no  
 ‘Although Zhangsan has invited Mary, will you still come?’

The three tests show that PACs are above the interrogative force projection of the main clause. They are merged only after the ForceP in the main clause is projected, as illustrated in (114). We further maintain that PACs are merged in the Specifier of the DiscourseP in the main clause. This position is directly associated with PACs’ discourse-organizing function (cf. Part 2, this issue).

(114) Sentence-initial PACs



As for CACs, when occurring sentence-initially, they can be in the scope of the subject of the main clause while being above the modal and negation; when they are in the sentence-medial position, CACs can merge below the negation/modal of the main clause. We refer the reader to Part 2 for a comprehensive discussion.

Briefly summarizing, some S-final adverbial clauses (reason and concessive clauses) have been reanalyzed as coordinated root sentences due to the distribution of SFPs and scope-related facts. For others, such as conditional clauses, a straightforward assumption would be that they are right-adjoined to the corresponding projections. This would create a symmetrical adjunction structure if the initial ones are assumed to be left-adjoined to the main clause. We argue against the right-adjunction analysis in Part 2 where we will show that the key to distinguishing among different analyses hinges on the empirical generalizations about the conditions that allow the “marked” final adverbial clauses.

## 4. Summary

Part 1 in this series on Chinese adverbial clauses has focused on adverbial adjuncts that are canonically in the S-initial position. Section 2 discussed the internal structure of adverbial adjuncts headed by adpositions. The representative lexical items studied in that section are the temporal adverbials introduced by *zài* ‘at’, *cóng* ‘from’, *yǐqián/yǐhòu* ‘before/after’, and the reason/purpose adverbials introduced by *wèile* ‘for/to’. Some of them appear to allow a CP to be directly embedded, suggesting that the category of the conjunction word might be a complementizer. However, we argued that the CP embedded in the *wèile* phrase and *cóng* ‘from’ phrase has a covert nominal head, based on three empirical observations: the selection of coordinators in coordinate structures, compatibility with the distributive quantifier *dōu* ‘both/all’, and the interpretation. Thus, we argued in favor of the prepositional status of *cóng* ‘from’ and *wèile* ‘for/to’, and adopted the same internal structure,  $[_{pp}[_{DP}[_{CP}]]]$  as for *zài* ‘at’ phrases. Despite the similarities, we found a two-way distinction in terms of the availability of topicalization when exploring inside the P complement. We provided an explanation based on the intervention effect operative in relative clauses but not appositive clauses. The temporal *zài...de-shíhòu* ‘the time when...’ contains a relative clause with *shíhòu* ‘time’ being the head noun, while the purpose *wèile* ‘for/to’ introduces a complex NP with an appositive clause. Accordingly, topicalization is possible in the latter but not in the former. As for temporal adverbials of *cóng* ‘from’ and *zài...yǐqián/yǐhòu* ‘before/after’, they pattern like *zài...de-shíhòu* ‘at...time’ in the acceptability of topicalization, but do not have the low construal, similar to *wèile* ‘for’ phrases. Nonetheless, the high-low construal ambiguity reappears when an overt temporal noun such as *shíhòu* ‘time’ is present. This indicates that there is a covert nominal head TIME in these two temporal adverbials. The lack of the low construal is attributed to the requirement that a null temporal operator must bear a local relation with its licenser, prohibiting long distance movement that leads to the low construal. Because the properties of *zài...yǐqián/yǐhòu* expressions follow from the presence of a null temporal nominal head, our analysis lends support to their category as postposition.

In section 3, we started with the observation that Chinese complex sentences can be distinguished between those with a single conjunction word in the adverbial clause and those with paired conjunction words in the adverbial and the main clause. Based on the clause order, the scope of the *wh*-phrase, and quantificational binding, we claim that those with paired conjunction words have a structure of coordinate conjunctions. Then we further discussed three sets of contrasts within the group of single word conjunction. Based on clause types and attitude SFPs, we proposed that some S-final reason and concessive clauses are root sentences and form a coordinate conjunction with the preceding “main” clause. Accordingly, labeling these clauses as adverbial clauses (which suggests a subordinate relation) is a misnomer. By contrast, conditional clauses in the S-final position are either central or peripheral. A DiscourseP is proposed to be the highest projection in a root sentence, which encodes the illocutionary act and attitude-denoting SFPs. The possibility of TP-internal discourse particles and scope-related tests demonstrate that the distinctions between PACs and CACs, which have been proposed for languages like English and German, also hold in Chinese. The deictic center encoded in ForceP is responsible for the licensing and anchoring of discourse particles. Syntactically, CACs are either *vP* or TP adjunctions below the ForceP of the main clause, whereas PACs are merged as the Specifier of DiscourseP.

Part 1 has raised the following questions, which are analytically related and by no means random. They will be answered in Part 2:

- Under what criteria are S-final adverbial clauses “marked” (mentioned in the introduction)?
- If S-final adverbial clauses are marked, what are the conditions in syntax, semantics, discourse, and prosody that allow their occurrence, or make their occurrence felicitous (i.e., the empirical generalizations on acceptable S-final adverbial clauses)?
- What is the exact property of “correlative adverbs” in the main clause (mentioned in section 3.1)?
- How does the proposed structure for PACs and CACs correlate with their discursive functions (mentioned in section 3.3.3)?



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## Adverbial Clauses in Mandarin Chinese, Part 2: Ordering and syntax-discourse-prosody interface

WEI HALEY WEI & YEN-HUI AUDREY LI  
*University of Southern California*

In Part 2, we focus on adverbials in the non-canonical sentence-final position, including both adpositional and clausal adverbials. We first present arguments for the claim that the S-initial position is the unmarked (or “canonical,” “default”) position for the adverbials, while the main-adverbial order is marked in Chinese. An important argument will be based on the discursive function of adverbial clauses. Because adverbial clauses in English have been well studied, from both generative and functional perspectives, section 1 first presents the main points in the literature on adverbial clauses in English. Specifically, we will elaborate on two discursive functions with their correlated formal properties: the discourse-organizing function and the local function, which will be defined in section 1.

Next, in section 2, we will show that the S-initial position is unmarked for Chinese adverbial clauses, according to two arguments to be presented. S-initial adverbial clauses can be divided into two groups according to their discursive functions and formal properties. For S-final adverbial clauses, we will use ‘%’ to indicate their being judged to be infelicitous. Despite the ‘%’ marking and lower text frequency of S-final cases compared to S-initial adverbial clauses, there does exist a significant number of instances in spoken and written corpora where S-final adverbial clauses are felicitous. In general, a pattern is considered “marked” if it only occurs when some special *conditions* are met (cf. König & Van Der Auwera 1988, 109-110). This leads us to ask the following questions in section 3:

- (1) a. What are the conditions (assuming there could be more than one) that make the marked S-final adverbial clauses felicitous in Chinese?

- b. Are those conditions systematic in the sense that they are rule-governed so that we can formalize them, or are they just idiosyncratic (e.g., influenced by the grammars of individuals' foreign languages ("Europeanized Chinese," Chao 1968: 133)?

Section 2 will show that, while S-final adverbial clauses have discursive functions, the S-initial position is favored and unmarked to realize such functions. Therefore, the S-final cases do not serve the general discursive functions for adverbial clauses. To identify the systematic conditions for S-final adverbial clauses, if there are any, we need to look beyond adverbial clauses and consider the larger context (section 3). Section 4 and section 5 present two conditions for S-final adverbial clauses, based on both formal approaches and discourse analysis methodology. The conditions are not idiosyncratic but related to a set of formal properties in discourse, syntax, and prosody, according to which S-final adverbial clauses are divided into two types. We further propose the corresponding formal analyses for the two types of S-final adverbial clauses and point out their correlation to the cases of right-dislocation and afterthought. Our analysis is derivational; therefore, section 6 addresses a potential challenge against the derivational analysis from the perspective of a base-generated right-adjunction structure (cf. Paul 2016; Pan & Paul section 3, this issue). Section 7 concludes.

## 1. Discursive functions of adverbial clauses

In the literature, adverbial clauses are generally identified as serving two discursive functions listed in (2) (Givón 1982, 1990; Chafe 1984; Thompson 1985; Quirk *et al.* 1985:1075-1077; Ramsay 1987; Ford 1993; Verstraete 2004, 2007, among others).

- (2) a. *Discourse-organizing*: linking back to the preceding discourse and providing background information for the main clause.
- b. *Local function*: specifying the circumstance of the state of affairs described in the main clause.

Chafe (1984) suggests, and Ramsay (1987) proves with quantitative evidence, that English adverbial clauses vary their functions according to positions. S-initial adverbial clauses in English have the discourse-organizing function, which is in line with Haiman's (1978) treatment of conditionals as topics (cf. Pan & Paul section 2.1, this issue). They are thematically associated with the preceding discourse and serve as background for the main clause. They function as a discursive "bridge" (Givón 1990: 847) between the preceding discourse and the following discourse. S-final adverbial clauses in English are "local" in the sense that they are associated with the main clause and specify the time, reason, or condition under which the state of affair expressed by the main clause holds.

The discursive function is strictly associated with the syntactic structure of complex sentences. S-initial adverbial clauses with the discourse-organizing function are outside the scope of scope-bearing elements in the main clause; they occur higher than the main clause projection dominating the subject, modal, negation, etc. S-final adverbial clauses with the local function can be within the scope of negation, modal, and question operator; they are analyzed as vP/VP-level adjunction (cf. Larson 1988, 1990; Kayne 1994: 69-71; von Stechow 1994; also see Bhatt & Pancheva 2006 for English conditionals). We use [+/- scope] from Verstraete (2004) to represent such structural and correlated interpretive differences: [+scope] means that the adverbial clause is in the scope of the main clause. Moreover, while S-initial adverbial clauses in English are set off from the main clause by an intonation break, S-final adverbial clauses are part of the intonation unit of the main clause (i.e., no pause between the main clause and the S-final adverbial clause).

The sentence in (3) below is an example of S-initial adverbial clauses. In (3), the S-initial temporal *while* clause cannot be in the scope of the *yes-no* question in the main clause; that is, the speaker of (3) cannot presuppose that "these things happened" and ask if it is "while you were a senior officer in the federal government" when these things occurred. Instead, the S-initial temporal clause only provides a temporal frame for the question (i.e., discourse-organizing function). By contrast, in (4), the S-final temporal *while* clause is the focus of the interrogative. Moreover, there is no pause before the *while* clause. Such adverbial clauses have the local discursive function.

- (3) While you were a senior officer in the federal government, did these things occur?  
 ≠ “was that the time [focus] when these things happened [presupposition]?” (Verstraete 2004: 833)
- (4) I think it’s very important to measure when and where things occurred. Did they occur when you’re a young person, in your formative years, or did they occur while you were a senior official in the federal government?  
 = “was that the time [focus] when these things happened [presupposition]?” (ibid.: 833)

The two examples above instantiate the unmarked positions for adverbial clauses in English, listed as type 1 and 4 in (5), which is modified based on Verstraete (2004, Table 6: 844). The table in Verstraete (2004) does not contain the intonation component, but we add the column based on the discussion there. The correlation between an intonation break (comma in written text) and scope should not be taken as categorical, as it is also affected by other factors such as the length of the clause (cf. Quirk *et al.* 1985: 1626-1628).

(5) TABLE 1. Four types of adverbial clauses in English

Type	Position	Scope	Intonation break	Discursive Functions	Remark
1	Initial	-	+	Discourse-organizing	Unmarked
2	Initial	+	-	Local	Marked
3	Final	-	+	Discourse-organizing	Marked
4	Final	+	-	Local	Unmarked

Verstraete (2004, 2007) points out that there are two other types of adverbial clauses in English which are marked, i.e., type 2 and type 3. When an S-initial adverbial clause falls within the scope of the main clause (type 2), it is a marked situation. The markedness is determined by its restricted distribution, low text frequency, and different intonation (cf. Verstraete 2004: 833-835). (6) is an example of such usage: the initial *when* clause is marked by *especially* as a contrastive focus. The content of the main clause is discursively presupposed according to the preceding context. Furthermore, note that there is no comma after the initial *when* clause from the source, possibly denoting the lack of a pause and a prosodically integrated

status of the adverbial clause. The lack of a comma in the text is a marked case for S-initial adverbial clauses, given that they often need to be separated from main clauses when they are in the initial position.

- (6) It is better for me to go ahead slowly and carry everyone with me than to hurry along and cause dissension. Especially when I speak in public I must show that I love all my sheep, like a good shepherd. (ibid.: 834)

Another marked situation is when S-final adverbial clauses are outside the scope of scope-bearing elements in the main clause (Type 3 in (5)). Verstraete (2004) categorizes them as having the discourse-organizing function like S-initial ones, and there is an intonation boundary between the main and the adverbial clause. The boundary is marked by “#” in (7). In this example, the S-final temporal clause (underlined) is in a separate intonation unit and cannot serve as the focus of the question; that is, the question in the main clause is not about when interlocutors will go to the pub, but about whether or not they will do so.

- (7) Do you wanna ... erm go for a quick one # before it c\loses # . yeah # . before it c\loses # .  
(\: nuclear accent; #: boundary of intonation unit) (ibid.: 832)

While the S-final *before* clause in (7) does not have the local function, we believe that the claimed discourse-organizing function is weakened as compared to type 1. The reason is that, to serve as a bridge between the preceding discourse and the main clause, the most ideal position of the adverbial clause should be preceding the main clause. This function would be lessened in the S-final position. Therefore, the reason why this type of adverbial clauses occurs at the S-final position should not be viewed as to fulfill the discourse-organizing function. There must be some other reason that causes the adverbial clause to occur in the S-final position, despite its having the semantic function as discourse-transition (whose natural position should be S-initial). To understand what the cause is, it is necessary to investigate the discursive status of the preceding main clause, which has been more or less neglected in the analyses available in the literature so far. We will explicate this issue in section 4.2 after discussing similar cases in Chinese.

Finally, the pair in (8a-b) further demonstrates the correlation between scope-taking and intonation integration. (8a) (i.e., type 4), without the intonation break, can presuppose the event that “they found it” and ask whether the event happened after she had gone. This interpretation is not available for (8b) with a pause (i.e., type 3). The interpretation for (8b) is to ask whether “they found it,” and the final temporal clause functions as a separate specification of the temporal circumstances.

(8) a. Did they find it after she’d gone?

b. Did they find it, after she’d gone?

(Verstraete 2007: 122-123)

Type 3 is occasionally called “afterthought” (Verstraete 2004: 832; Quirk *et al.* 1985: 1076), which is a label taken at its literal meaning as something that is thought of or added later. The label does not intrinsically specify the information status (old or new) of the “afterthought” content.

## 2. The initial position as unmarked in Chinese

It is noted in the literature that the S-final position is marked for Chinese adverbial clauses because final adverbial clauses are “unplanned” utterances (Chao 1968: 133). Li & Thompson (1981: 651) introduced “backward-linking clause,” which has been analyzed as coordinate structure (cf. section 3.1 in Part 1, this issue), but they did not discuss final conditional clauses or temporal adjuncts. We agree with the observations in the literature, and provide two pieces of evidence to show that the S-initial position is unmarked and the S-final position, marked for adverbial clauses in Chinese.<sup>1</sup>

First, both discursive functions favor adverbial clauses in the S-initial position in Chinese. There are some grammatical conditions that are relevant to the choice of clause order. As discussed for English, the conditions can be defined through correlations between

<sup>1</sup> Another criterion for markedness concerns the occurrence of correlative adverbs in the main clause. We refer the readers to Pan & Paul (section 3.1.2, this issue) for this argument and examples; but also see our analysis in section 6 concerning the properties of one of these correlative adverbs.

syntactic scope (i.e., [+/- scope]) and discursive functions. Adverbials of the discourse-organizing function are [-scope], and the local ones are [+scope]. These conditions either favor or disfavor a certain order. If the correlation between clause order and the grammatical conditions is part of the grammar, judgment based on native speakers' intuitions should converge. If no such correlation exists and the choice of clause order is idiosyncratic or random, then under the conditions in question, native speakers would not have a preference, or their preference would vary.

We first look at the position of a conditional clause in the context of the discourse-organizing function. In (9), our consultants presented the consistent judgment that B1 was more natural than B2. The order of the conditional in the S-final position in B2 is not "ungrammatical." The consultants commented that it seemed that in B2, the speaker either had forgotten to say that conditional clause and added it at the end, or the content of the conditional was less important and could be omitted. This is similar to (8b) in English. Therefore, we categorize the word order in B1 as the same as type 1 in English, and B2 as type 3 in English. We also make the generalization that, under the discourse-organizing function, the S-initial position is unmarked and the S-final position is marked.

- (9) A: Wǒ yǐhuì kěnéng qù xuéxiào.<sup>2</sup>

I later possibly go school

'I may go to school later.'

B1: Rúguǒ nǐ yào chūmén, shùnbànǎ bǎ lājī dài-chūqù ba.

if you will go.out by.the.way BA trash take-out SFP

'Take the trash out on your way if you are going outside.'

B2: %Shùnbànǎ ba lājī dài chūqù ba, rúguǒ nǐ yào chūmén.

by.the.way BA trash take out SFP if you will go.outside

'If you are going out, take the trash out on your way.'

<sup>2</sup> The abbreviations used in the glosses are as follows: CL: classifier; DE: the "modification" or "association" marker between a noun (phrase) and a pre-nominal modifier; EXP: experiential aspect; PERF: perfective aspect marker; SFP: Sentence Final Particle; BA: *ba* in the so-called executive or disposal *ba* construction; ASP: verbal aspectual marker.

Next, we consider the clause order when the adverbial clause assumes the local function. Relevant examples have been discussed in Pan & Paul (section 2.1, this issue, example (4)).<sup>3</sup> An S-initial conditional clause can provide an answer to a *wh*-question. As an answer, the S-initial adverbial clause is the focus, while the main clause is presupposed. A difference between English and Chinese emerges: for the local function, the S-final position is unmarked for adverbial clauses in English, whereas the S-initial position is unmarked for Chinese.

As support for this generalization, we add (10) and (11) to show the contrast between English and Chinese. In (10), B1 is a natural continuation to A's utterance. In contrast, B2 with an initial conditional is judged to be odd.

(10) A: John likes to go jogging in the morning.

B1: Will he go if it rains?

B2: %If it rains, will he go?

In Chinese, B1 in (11) with an S-initial conditional is the natural clause order, while B2 with an S-final conditional is odd (regardless of the presence/absence of a pause).

(11) A: Lǐsì zǎoshang xǐhuan qù pǎobù.

Lisi morning like go jogging

'Lisi likes to go jogging in the morning.'

B1: Rúguǒ xià yǔ tā huì qù ma?

if rain he will go yes-no

'Will he go if it rains?'

B2: %Tā huì qù ma (,) rúguǒ xià yǔ?

he will go yes-no if rain

'If it rains, will he go?'

<sup>3</sup> The example (4a-b) from Pan & Paul (this issue) is as follows:

(4) a. Nǐ huì [zài shénme tiáojiàn xià] qù měiguó?

2SG will in what condition under go USA

'Under what conditions will you go to the USA?'

b. Guójiā gěi wǒ jiǎngxuéjīn dehuà wǒ huì qù měiguó.

state give 1SG scholarship if 1SG will go USA

'I will go to the USA, if the state gives me a scholarship.'



We summarize the four types of adverbial clauses in Chinese in (12) (cf. Part 1 for discussions on scope properties). The categorization of type 3 and type 4 will be justified in section 4 and 5, respectively. Note that there is no intonation break in (11) B1 between the S-initial adverbial clause and the main clause. As pointed out earlier, other factors also affect the presence/absence of the intonation break (or comma in written text); thus, it is to be taken as a tendency instead of being categorical.

(12) TABLE 2. Four types of adverbial clauses in Chinese

Type	Position	Scope	Intonation break	Discursive Functions	Remark
1	Initial	-	+	Discourse-organizing	Unmarked
2	Initial	+	-	Local	Unmarked
3	Final	-	-	Discourse-organizing	Marked
4	Final	+	+	Local	Marked

The second criterion to determine markedness is frequency. Generally, the more frequent variety of a structure is considered unmarked, and the less frequent one marked. Compared with the S-initial ones, S-final adverbial clauses have a lower text frequency in corpus data. In a corpus study by Wong (2006) in (13), the majority of temporal, conditional, and concessive clauses occur initially, while causal clauses occur more frequently in the final position.

(13) TABLE 3: distribution of adverbial clauses by word order (From Wong 2006: 239)

Position/type	Temporal	Conditional	Concessive	Casual <sup>4</sup>	Totals
Initial	65(84.4%)	50(82%)	9(81.8%)	29(22%)	151(55%)
Final	11(14.3%)	4(6.6%)	1(9.1%)	80(65%)	96(32%)
Fragment	1(1.3%)	7(11.5%)	1(9.1%)	16(13%)	25(14%)
Totals	77	61	11	123	272

The causal clause in (13) might seem to be an exception, but there are two explanations. First, S-final causal clauses can be coordinated

<sup>4</sup>The labels “causal clause” and “reason clause” refer to the same type of clauses introduced by the conjunction *yīnwèi* ‘because’.



To summarize, based on the two criteria, we conclude that in Chinese, the initial position is the unmarked position for both discourse-organizing and local discursive functions, while the final position is marked.

### 3. S-final adverbial clauses: reasoning, materials, and methodology

We have just seen that S-final adverbial clauses are marked according to the two criteria discussed. Being marked could be viewed as idiosyncratic language use, which seems to be the viewpoint hinted by the “afterthought” label (Chao 1968: 133; for English, see Verstraete 2004: 832; Quirk *et al.* 1985: 1076). Chao (1968: 134) further comments that if someone uses the marked order in speech, it sounds “foreign or learned.” We note that while an S-final adverbial clause is not favored in the context described in the intuition-based examples such as (11), it is by no means uninterpretable or ungrammatical. Moreover, in spontaneous utterances from corpora, S-final adverbial clauses are not only grammatical but also felicitous without causing any semantic or pragmatic abnormality. In other words, although S-final adverbial clauses are generally marked and may cause infelicitousness, when certain conditions are met their occurrence becomes acceptable. Although the conditions are discourse-related, and every context is a different context, it does not mean that there is nothing systematic across contexts. The goal in sections 4 and 5 will be to explicate the similar conditions among the contexts in which S-final adverbial clauses are felicitous and provide a formal account at the syntax-discourse interface.<sup>6</sup>

In addition, there is a long history of studies and ongoing discussions on right-dislocation and afterthought in the phrasal form, such as DP, PP, VP, AdjP, AdvP, and complement CP, across-linguistically (English: Ziv & Grosz 1994; German: Averintseva-Klisch 2005, Frey & Truckenbrodt 2015, Ott & de Vries 2016; Japanese: Sells 1999, Nakagawa *et al.* 2008; Korean: Park & Kim 2009, Ko 2014, 2015; Chinese: Lu 1980, Zhang & Fang 1996, Guo 1999, Cheung 2005, 2009, Luke 2012, Lee 2017, among others). These studies

<sup>6</sup> For final adverbial clauses to be felicitous under special conditions does not amount to being favored over initial adverbial clauses. When those special conditions are met, there is no prediction as to which order will be more frequent.

are built on the assumption that such phenomena are generated in a systematic way. However, to our knowledge, formal analyses have rarely discussed the discourse-pragmatic properties of phrasal right-adjunction and afterthought (except for Zhang & Fang 1996, Guo 1998, and Luke 2012 which focus on the pragmatics of such structures); nor have S-final adverbial clauses been investigated in depth. If we must assign a structure to type 3 adverbial clauses in English (final, marked, discourse-organizing), “right-adjunction at the CP-level” would be a highly plausible candidate. However, by presenting novel discoveries at the syntax-discourse interface in the next section, we argue that S-final adverbial clauses in Chinese can be more adequately analyzed by a derivation other than right-adjunction.

Because we are drawing generalizations at the interface of syntax, discourse, and prosody, we use corpus-based data. When the video or audio is available for the examples, we use transcription notations and F0 diagrams to illustrate the prosody of the utterances, with the links to the online sources listed in the appendix. When the example is from written texts such as the script of a play, we consult the intonation preference with northern Chinese native speakers.

When making generalizations across discourse contexts and target utterances, we combine the formal approach with discourse analysis methodology. Specifically, we employ the model of communication as continuous change of the common ground (CG) (cf. Chafe 1976; Stalnaker 2002; Krifka 2008), which is described in (16):

(16) Common ground (CG) includes

- (i) a set of propositions and discourse referents that are *known to* the interlocutors and continuously modified in communication (CG content), and
- (ii) information guiding the direction into which communication should develop (CG management).

To elaborate, CG content includes information and discourse referents that are taken as the background or presuppositions, which are known to the interlocutors but not necessarily agreed upon. As the CG content continuously changes, certain proposition in the CG content can be contradicted or corrected. For instance, in (17), after Maz’s turn, the CG content contains the information about Maz’s

belief that “we should fight against the First Order.” Being in the CG content, Maz’s belief is known to but not shared by Finn, who contradicts Maz’s belief in his turn with the utterance expressed by the underlined sentence.

(17) From the film script of *Star Wars: The Force Awakens*

Maz: Today, it is the First Order. Their shadow is spreading across the galaxy. We must face them. Fight them. All of us.

Finn: There is no fight against the First Order! Not one we can win. Look around. There's no chance we haven't been recognized already. I get you the First Order is on their way right—

CG is also relevant to the “communicative interests and goals of the participants” (Krifka 2008: 17) and concerns how the CG content develops in a given discourse. These aspects are called CG management. Specifically, the use of focus is divided into semantic use and pragmatic use in Krifka (2008). The semantic use of focus has truth-conditional impact and thus is relevant to CG content; the pragmatic uses of focus belong to CG management, which include highlighting the part of an answer in correspondence to a *wh*-question, correction, confirmation, and delimitation. To illustrate, take (17) above as an example again. The negation in Finn’s turn has the pragmatic use of focus in the type of “correction” (or “contradiction”). Finn contradicted Maz’s belief in order to guide the communication away from the point of “fighting against the First Order” and towards his interest as persuading others to give up and run away. In the following section, both CG content and CG management will be employed as analytical terms.

#### 4. Type 3 S-final adverbial clauses

Some of the S-final adverbial clauses in Chinese are similar to the English type 3 because: (a) the content of such adverbial clauses is given in the discourse context (i.e., they have a linguistic or non-linguistic antecedent), and (b) they have the typical discourse-organizing function when placed back into the S-initial position. Thus, we label them type 3, as has been indicated in Table 2 in (12).

To identify the condition that allows adverbial clauses to occur at the S-final position, we shift our attention to the larger context. In this section, we take a heuristic approach and present three case studies in 4.1. We analyze the similarity across those discourse contexts to explicate the reason why an adverbial clause appears at the S-final position. We will show that the similarity is the speaker's intention to emphasize the information expressed in the main clause.

The next question is why the speaker emphasizes the information. In 4.2, we propose that it is due to the unexpectedness of the information to the addressee from the speaker's perspective. We then propose a derivational analysis for this type of adverbial clauses. We claim that they are derived from the unmarked adverbial-main clause order (type 1) due to the leftward movement of the main clause across the adverbial clause. The movement is driven by a contrastive focus on the main clause. Crucially, contrastive focus is defined as a discourse-pragmatic feature based on Zimmermann (2008), which encodes the unpredictability of the information in discourse. This approach is favored against the alternative right-adjunction analysis because of its merits in accounting for all the empirical generalizations.

Section 4.3 further extends the analysis to right-dislocation constructions in Chinese (Cheung 2009) and argues that the trigger of the leftward movement is not information focus as in Cheung (2009) but contrastive focus as defined in our proposal.

### 4.1 The condition that allows type 3

The first example in (18) is extracted from a conversation in a novel, with the target turn in S1.

(18) (From the novel *Mìlàn*; CCL.)

*Zhanglin's dark eyes stared at her. They looked at each other for a few seconds. Then Zhanglin shook her head and said:*

ZI: Nǐ yīdìng yào zhǎo tā, wǒ yě bú huì lán nǐ.  
 you absolutely want go.for he I Attitude not will stop you  
 '(If) you absolutely want to go for him, then I will not stop you.'

*Su Xiaohui(=S) sneered,*

S1: Nǐ lán-dé.zhù wǒ ma, rúguǒ nǐ xiǎng lán?  
 you stop-be.able.to I yes-no if you want stop  
 ‘Are you able to stop me, if you want to stop (me)?’

S2: Wǒ-de fùmǔ dōu bú néng lán wǒ.  
 my parents even not can stop I  
 ‘Even my parents could not stop me.’

S3: Dāng nián jié.hūn shí, tāmen lán-de duō qǐjìn,  
 that year get.married time they stop so strongly  
 yǒu yòng ma?  
 have use yes-no  
 ‘They tried so hard to stop me when I got married that year.  
 Did that work?’

*Her tone was full of provocation beyond her own control.*

The first task is to identify the discursive function of the S-final conditional in line S1 (underlined). At first sight, the conditional does not seem to have a linguistic antecedent in the preceding discourse. However, according to the conditional clause and the attitude-denoting adverb *yě* used by the speaker Zhang in line Z1, the speaker *Su* can infer the CG content in (19). We can see that the proposition in (19b) is the antecedent of the conditional in S1.

(19) CG content (output) of line Z1

- a. Zhang<sub>i</sub> believes she<sub>i</sub> has the ability to stop Su.
- b. Zhang wants to stop Su.
- c. Zhang does not stop Su only because Su is strong-willed in going for the guy.

The second task is to analyze the discourse. We focus on the *yes-no* question, which can be taken as the corresponding “main clause” for the conditional clause. Given the subsequent utterances in line S2 and S3, the *yes-no* question ought to be interpreted as a rhetorical question. In line S2, Su maintained that “even her parents couldn’t stop her,” and “there was no use for her parents to try to stop her when she got

married years ago" (S3). Thus, the *yes-no* question "*can you stop me*" is not information-seeking but rhetorical. It is an emphasized form of Su's assertion that "*you can't stop me*." This assertion is a correction or contradiction to Zhang's belief, which is reflected in the CG content in (19a). The use of a rhetorical question conveys Su's strong emotion in emphasizing her point and contradicting Zhang's belief. Therefore, the expression in line S1 has the function of CG management of correction.

As for the intonation, our consultants gave similar descriptions that, according to the context, the potential complement *dé.zhù* 'be.able.to' following the verb *lán* 'stop' should be read as stressed. In regard to an intonation break, the consultants claimed that there could be a pause after the question, but it must be very short.

Briefly summarizing the discussion above, we have observed that the content in the main clause is emphasized by the speaker, as a contradiction or correction of the addressee's belief: the emphasis is in the form of a rhetorical question and the stress is on the potential complement of the verb.

The second example (20) is from an interview. For ease of reading, we have translated the preceding utterances into English and present the target and its prior sentence.

- (20) *Background*: recently, there have been discussions on social media that people in Shandong province like to use "inverted sentences" (*dǎozhuāng jù*<sup>7</sup>) in conversation. The general opinion is that this style is different. A news program<sup>8</sup> in Shandong conducted a street interview, asking Shandong people themselves how they view the use of "inverted sentences" and what they think of the opinions online.

<sup>7</sup> Below is an example. This is the right-dislocation structure we mentioned in section 3.

(i) (Question: *where did Mary go just now?* Answer:)

Qù gōngyuán le, Mǎlì.  
go park SFP Mary  
'Mary went to the park.'

<sup>8</sup> The news program is called *Good Morning, Shandong*. This example is from the program aired on December 11, 2016.



*Preceding utterances:* “It is said that us people in Shandong like to use inverted sentences. It is not the case, I think. As for the style of talking, it varies with individuals, right? Anyway, I’ve been talking like this, for all these years.”<sup>9</sup>

L1 (+)qíshí hái ↑ (+) **tǐng méng** de, (+) tīng-qì.lái  
 in.fact Attitude very cute DE listen-ASP  
 ‘In fact it is very cute, it sounds.’

L2 >rúguǒ nín xíguàn-le dehuà<.  
 if you get.used-PERF if  
 ‘if you are used to it.’

Similar to the previous example, the S-final conditional in line L2 does not have a linguistic antecedent in the preceding discourse. It is an indirect link back to the immediately preceding sentence, which has the implications in (21). Either of the underlined sentences in (21) is the non-linguistic antecedent of the conditional clause, and the S-final conditional would have assumed the discourse-organizing function if it was in the S-initial position.

(21) CG content (output) after line L1:

“Anyway, I’ve been talking like this for all these years,

a. ...and I’m already used to it. (or)

b. ...and people around me are already used to it.

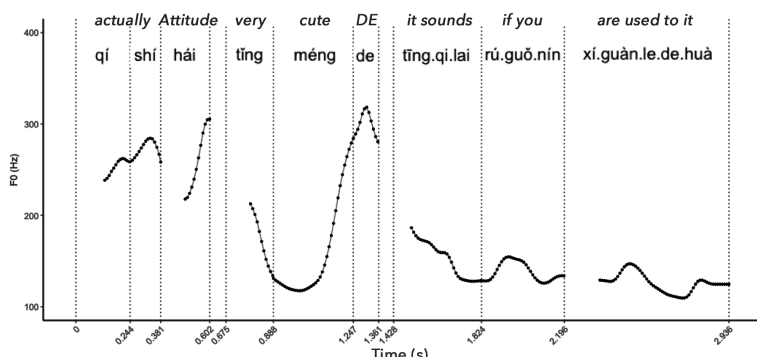
Now we turn to the discourse. The expression in the main clause is being emphasized by the speaker, just like the case in the previous example. The emphasis is reflected in the formal markings in both syntax and prosody. First, emphasis is reflected in the use of adverbs. The assertion is marked by the adverbs *qíshí* ‘actually’ and *hái*. The

<sup>9</sup> Transcription notations used:

(+)	a pause between 0.1 and 0.5 of a second	=	latch
(++)	a pause between 0.6 and 0.9 of a second.	—	abrupt cut-off
?	raising intonation in a question ((laugh))		comment about actions
.	sentence-final falling intonation	> <	increased speed
,	phrase-final intonation (more to come)	< >	decreased speed
↑	raising intonation	<b>Bold</b>	very emphatic stress
↓	falling intonation	[ ]	overlap talk/simultaneous utterances

adverbial meaning of *hái* is ‘still/also/even’; but here *hái* has none of these meanings. Rather, it is an attitude-denoting discourse particle, which expresses the speaker’s attitude that something turns out to be contrary to the perceived expectation.<sup>10</sup> In addition to the use of adverbs, we can observe the phonetic correlates of emphasis in the F0 diagram of line L1 and L2. In (22), the syllables of the attitude adverb *hái*, degree adverb *tǐng* ‘very’, and the adjective *méng* ‘cute’ in the main clause have longer duration compared to the syllables in the S-final adverbial clause. The adverbial clause has a low and falling pitch contour, and a faster tempo compared to the preceding main clause. The acoustic data also shows that there is no intonation break before the conditional.

(22) F0 diagram for line L1 and L2 in (21)



The prosody of the target line L1 and L2 in (21) is an exact instantiation of Chao’s (1968: 132) observation that some S-final adverbial clauses “tend to have the same likelihood of faster tempo as interpolation. ... (on interpolation) while an interpolation may come after a pause, it is more likely to come after a negative pause; that is, there is not only no pause, but the break is marked by a faster

<sup>10</sup> The attitude-denoting use of *hái* can be illustrated by (i) with two occurrences of *hái*. According to the context, the second *hái* has the meaning of ‘even’. The first *hái* cannot be translated as ‘even’ or ‘also’. It has the attitude-denoting use.

(i) *Preceding discourse*: “Actually these toys are exactly those that we played with in our childhood. We don’t have the opportunity to see the new toys nowadays, so we had to try to make them based on impressions.”

Méi xiǎng-dào hái tèbié shòu-huānyíng, érqiě hái shàng-le diànshì. (MLC)  
not think-PERF Attitude very get.popularity moreover even get.on-PERF TV

‘Unexpectedly, they turned out to be very popular. Moreover, they even got on TV.’

tempo, a *piu mosso* on the interpolated part.” We add the observation on the prosody of the main clause that the initial main clause has stronger prominence, correlating with its status of being emphasized.

The two examples above are S-final conditional clauses. We present one more example in (23) with an S-final temporal adjunct *de shíhòu* ‘...DE-time’ (cf. section 2 in Part 1) in line M5.

- (23) *Context*: Dong is the host of the talk show, and Ming is an outstanding high school student. One of her achievements is being the representative of China at an international Model U.N. event. In this segment, Ming mentioned that she organized the model U.N. in her city last summer. The host Dong is asking Ming about her experience.

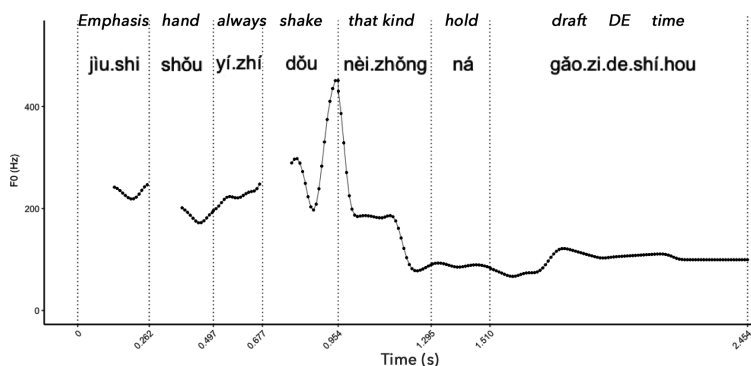
- D1 *When you were participating in the activity, were you nervous at first?*  
 M1 *At the beginning of this activity, it was in the school.*  
 M2 *In the school meeting, at the beginning, I was very nervous.*  
 M3 *because I must state my standpoint in front of all the people.*
- M4 >suǒyǐ< yī.kāishǐ jiù.shì hěn.jǐn.zhāng hěn.jǐn.zhāng  
 so at.the.beginning Emphasis very nervous very nervous  
 ‘So at the beginning (I was) indeed very nervous, very nervous.’
- M5 (++) jiù.shì shǒu yī.zhí dǒu  
 Emphasis hand all.the.time shake  
 nèi zhǒng >ná gǎozi de shíhòu<  
 that kind hold notes DE time  
 ‘my hands just couldn’t stop like shaking, when  
 I was holding the notes.’
- M6 (++)>suǒyǐ<hòu.lái jiànjiàn kěfú jiù hǎo-duō le.  
 so later gradually overcome then good-much SFP  
 ‘So later I gradually overcame it and then it was much better.’

The temporal adjunct has a linguistic antecedent in the discourse, which refers to the same temporal circumstance as in line M3. As for the content in the main clause, Ming mentioned that she was nervous once in line M2 (underlined), and twice in M4. Then in the target line M5, Ming continued to explain her nervousness using

“the shaking hands” as an illustration. The speaker’s emphasis on the point of being nervous is clear. However, it is not obvious why Ming chose to state that she was nervous for four times. We will come back to this point in the next section by examining the larger context according to our analysis.

Formal emphasis-marking can be seen in both syntax and prosody. First, the emphasis adverb *jùshì* is used to emphasize the shaking action expressed by the verb *dǒu* ‘shake’. Second, as shown in the F0 diagram in (24), the syllable *dǒu* has a longer duration and expanded pitch range, correlating with its emphasized status (cf. Wang and Xu 2006). Third, this syllable has a full third tone. A third tone in Chinese usually undergoes tone change and becomes low-falling before the first, second, and fourth tone in connected speech, and the rising tail usually occurs in the utterance-final position (Li & Thompson 1981: 8; Shih 1997: 82). The emphasis on the syllable is reflected in a full falling-rising third tone. On the other hand, the final temporal adjunct has a low contour and faster tempo, similar to the intonation contour of the final conditional clause in the previous example.

(24) F0 diagram of the line M5 in (23)



To summarize, when the marked order occurs in discourse, the main clause carries the information that the speaker emphasizes. The emphasis is formally reflected in syntactic markings such as clause types (e.g., a rhetorical question in the first example), and discourse particles (e.g., in the second and third examples), as well as in prosodic markings such as longer syllable duration and expanded pitch range. Therefore, it is reasonable to postulate that the marked word order

also serves to express the speaker's emphasis. Then the following questions arise regarding the notion of emphasis. What causes the speaker to emphasize the content in the main clause and what is the status of "emphasis" grammatically? The former question concerns how to diagnose the instances of emphasis in discourse, and the latter relates to creating emphasis as a formal linguistic notion.

## 4.2 Analysis for type 3

We propose that the "main-adverbial" order in type 3 is the result of syntactic displacement, which is among the devices of formal markings on emphasis cross-linguistically. Specifically, the marked word order is due to the leftward movement of the main clause from the unmarked "adverbial-main" order (i.e., type 1) triggered by the contrastive focus marking on the main clause. We divide the proposal into two parts for elaboration: the trigger part and the movement part. Finally, we compare our proposal with Cheung (2009) on "right-dislocation" in Chinese.

### 4.2.1 *Emphasis as contrastive focus*

We adopt Zimmermann's idea (2008) in order to draw the connection between emphasis and contrastive focus (also see Zimmermann & Onéa 2011). Because "emphasis," to be identified as a feature that triggers a syntactic operation, is necessarily related to discourse, we adopt the definition of contrastive focus under the discourse-pragmatic approach in (25).

- (25) Contrastive marking on a focus constituent  $\alpha$  expresses the speaker's assumption that the hearer will not consider the content  $\alpha$  or the speech act containing  $\alpha$  **likely to be(come) common ground**.

(Zimmermann 2008: 354; boldface in the source)

We assume the "common ground" used in the definition above to be defined as in (16). The definition of "contrastive marking on a focused constituent" thus is a pragmatic use of focus and CG management as described in section 3. In this definition, contrastive focus is not characterized by semantic features such as alternatives and exhaustiveness (cf. Szabolcsi 1981, Rooth 1992, É. Kiss 1998, among

others), which can be determined in the immediate linguistic context, i.e., a single sentence or a question-answer pair. Instead, contrastive focus encodes the contrast between the information  $\alpha$  expressed by the speaker and the assumed expectation state of the addressee from the speaker's perspective. If, according to the speaker, some information  $\alpha$  is likely to be unexpected by the hearer, the speaker marks the information  $\alpha$  as contrastive by formal means. The reason for such marking is pragmatic and related to CG management: the speaker intends to guide the conversation towards his/her own interest by ensuring a swift update of the common ground "in situations of (assumed) differences in the assumptions of speaker and hearer" (Zimmermann 2008: 357).

According to the definition in (25), contrastive marking can be assigned to speech acts such as assertion, question, request, and command. Thus, main clauses, with illocutionary act potentials, can carry the emphasis status. To identify contrastive foci, we need to consider not only the context, but also the background assumptions of speaker and hearer. We demonstrate this through the identification of the main clause as contrastively marked in the three examples above. In (18), from the two rhetorical questions in line S2 and S3, we know that Su, the speaker, holds the belief in (26a). Su implies from Zhang's utterance that Zhang holds the belief in (26b). Therefore, the speaker forms the assumption in (26c). Accordingly, the content of  $\alpha$ , i.e., the main clause, meets the requirement of being contrastively marked.

(26) a. Speaker's belief:

$\alpha$  = *No one can stop me.*

b. Hearer's belief in Speaker's mind:

*I can stop you if I want to.*

c. Speaker's assumption:

$\alpha$  is likely to be unexpected by the hearer.

In example (20), the speaker's belief is (27a). Because the context is a TV interview, the speaker construes the audience as the hearer. According to the background context, the speaker has the assumption that people think that using inverted sentences is different and attribute it specifically to Shandong speech, i.e., (27b). Due to the contrast between (a) and (b), the speaker arrives at the assumption in (27c).

## (27) a. Speaker's belief:

$\alpha$  = *The style of structural inversion in speech is very cute.*

## b. Hearer's belief in speaker's mind:

*Only Shandongese uses structural inversion in their speech, which is different and strange.*

## c. Speaker's assumption:

$\alpha$  *is likely to be unexpected by the hearer.*

In the third example in (23), the preceding discourse illustrates that the interviewee, Ming, is a high-achieving student who was the representative of China at an international Model U.N. event. She also organized the Model U.N. event in her city. Thus, when answering the question "are you nervous (when participating the Model U.N. activities)," Ming assumed that the hearer's (i.e., host's) expectation is that she should not be nervous. The speaker's belief in (28a) is in contrast with what the speaker assumed to be held by the hearer in (28b).

## (28) a. Speaker's belief:

$\alpha$  = *My hands were shaking due to nervousness.*

## b. Hearer's belief in speaker's mind:

*She is outstanding and confident, so it must be the case that she is not nervous.*

## c. Speaker's assumption:

$\alpha$  *is likely to be unexpected by the hearer.*

To summarize, we have shown that in all the examples, the speaker draws the assumption that the information she/he conveys is likely to be unexpected by the hearer. In order to direct the hearer's attention, and guide the development of the conversation in accordance with his/her interest, the speaker uses grammatical markings on  $\alpha$ . In Chinese, moving  $\alpha$  to the specifier of a licensing functional head at the syntax-discourse interface (DiscourseP) is one of such formal markings on contrastive focus.

### 4.2.2 *The leftward movement*

The previous section formalizes the concept of “emphasis.” As our claim is that the marked word order is triggered by emphasis, the question now is how the marked word order is derived, if it is a syntactic behavior. We first summarize the four generalizations of type 3 in (29). These are the generalizations that any analysis of type 3 adverbial clauses should capture.

- (29) a. Type 3 occurs when the content in the main clause is emphasized by the speaker.
- b. Type 3 contains given information and would have the discourse-organizing function if it were in the S-initial position.
- c. Type 3 is prosodically de-emphasized.
- d. Type 3 is similar to “right-dislocation” in Chinese in terms of triggering discourse contexts and prosodic features (to be presented in the next section).

For the unmarked “adverbial-main” word order, the adverbial clause is merged to the left of the main clause (type 1). It may be left-adjoined or in the Specifier of some functional projection in the main clause.<sup>11</sup> For type 3, two possibilities can be considered: (i) the adverbial clause is adjoined to the right of the main clause (*right-adjunction analysis*), or (ii) the main clause in the structure with the unmarked order is moved around the adverbial clause and fronted to the initial position (*derivational analysis*).<sup>12</sup> For both options, the trigger of the operation (i.e., right-adjunction of the adverbial clause or preposing of the main clause to the left) is the emphasis on the main clause.<sup>13</sup>

<sup>11</sup> That the adverbial clause might be in the Specifier position of a functional projection follows the general approach by Cinque (1999) and others for adverbs. Another candidate is the topic position, as in Gasde & Paul (1996) and Paul (2016).

<sup>12</sup> The third logical option — postposing of the adverbial clause — is not entertained, because of the lack of a trigger for movement, and the more general right-dislocation property: even non-constituents can appear in the “right-dislocated” position. See section 4.3 for details.

<sup>13</sup> Logically, there is the third option of base-generating the adverbial clause in the S-initial position and postposing it to the right-periphery. However, such a postposing option would not have motivations for the movement and encounter the same problems as the right-adjunction analysis.

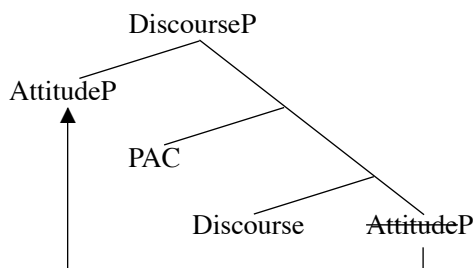


We will show that both analyses capture (29a-c), with different stipulations. However, the derivational analysis will be proven to be more adequate based on two arguments: (i) the assumption for the derivational analysis is better motivated, both empirically and theoretically; (ii) it also captures the similar “right-dislocation” phenomenon in (29d), which is not accommodated by the right-adjunction analysis.

We begin the discussion with (29a). For both analyses, (29a) serves as the trigger. The right-adjunction analysis needs to posit that right-adjunction is the marked structure in Chinese, which is available only with a specific trigger. In Chinese, adverbial modifiers are generally not right-adjoined (cf. Ernst 2002; also see Part 3 of this series). The said stipulation would mean a semantic or pragmatic factor triggering a particular way of structure-building, which is not a commonly adopted mechanism. By contrast, the derivational analysis would claim that the emphasis on the main clause causes movement of the main clause, resulting in the marked word order. The “emphasis,” if formalized as a feature, has a strong or EPP-like property to trigger the movement. For both analyses, (29b-c) can be taken as the comitative conditions that come with the trigger. That is, because it is the content of the main clause that is emphasized, the adverbial clause does not contain new or contrastively-marked information, and it is deaccented.

Next, we lay out the details of the derivational analysis and explain how its assumption, i.e., the EPP-like property of the trigger, is motivated. We follow the analysis for peripheral adverbial clauses in Part 1 and propose that type 1 adverbials are merged in the Specifier position of the DiscourseP of the main clause, which makes type 1 (=PACs) “speech act parasites” (Frey & Trukenbrodt 2015). Contrastive marking on the content expressed by the main clause is the trigger of movement. To implement the movement analysis, we use the Agree and Movement mechanism in Pesetsky & Torrego (2007). The main clause (AttitudeP) has the uninterpretable but valued discourse feature [*uDis*: emphasis] which needs to be checked off by a functional head (i.e., the licensing head). The functional head accordingly has interpretable but unvalued discourse features [*iDis*:\_]. This functional head is Discourse, not Focus, for the following reasons.

(30)



First, the movement targets the initial position of a sentence. Assume the Linear Correspondence Axiom of Kayne (1994), the landing site of the movement should be the Specifier of the highest projection. In our analysis, the highest projection is DiscourseP, not FocusP. Second, in various languages, FocusP hosts presentational or identificational foci that are characterized on the basis of semantic features, such as exhaustiveness. In Chinese, FocusP in the left periphery is reserved for identificational focus marked by the copular *shì* ‘be’ (cf. Pan 2015). The FocusP is relevant to the semantic use of Focus. In contrast, the [emphasis] feature encoding the contrastive focus belongs to the pragmatic use of focus. As these two uses of focus are differentiated, the functional projection that hosts the foci should also be distinguished.

If movement is required to check off [*uDis*: emphasis], it amounts to saying that this feature carries an EPP-like requirement in syntax, which is the unavoidable stipulation we mentioned earlier. However, we claim that this stipulation is well-motivated for locality reasons. We observe that the grammatical markings that can realize emphasis linguistically all do this in a “local” way. Suppose an XP is intended to be emphasized (i.e., carries [*uDis*: emphasis]). Phonological markings, such as pitch accent and lengthening, directly operate on the XP or part of the XP; morphological markings affix to the XP; repetition makes a copy of the XP; clefts structurally displace the XP. Licensing by a functional head requires a local Spec-head relation, hence movement.

There is potentially an argument against a derivational analysis concerning the occurrence of a correlative adverb in the main clause when the adverbial clause is S-final. A response to this potential challenge will be in section 6 where the analyses for both types of S-final adverbial clauses are presented. We will show that the analysis of the occurrence of *jiù* is not only accounted for by our analysis, but further argues against the right-adjunction analysis.

### 4.3 Right-dislocation (RD) in Chinese

In this section we compare our analysis with Cheung (2009). Although both analyses make a head-initial assumption on sentence final particles (SFPs) and adopt a feature-driven movement, we show three empirical challenges to Cheung's analysis. We further demonstrate how these challenges are resolved in our analysis, which captures the functional motivation of the right-dislocation structure.

#### 4.3.1 RD in Cheung's (2009) analysis

Cheung (2009) studies the right-dislocation (RD) construction in Mandarin Chinese and Cantonese. A Mandarin Chinese example is in (31a), with the canonical order in (31b). A comma is used in (31a) to separate the "right dislocated" part from the preceding part. We put quotation marks on "right dislocated" part because that part is not moved to the right edge in either analysis. As observed in Chao (1968: 133) and Lu (1980), there is usually no pause at the comma position; the "right-dislocated" part is uttered in a faster tempo compared to the preceding part and has a falling contour (cf. Li & Wei 2017 for the F0 diagrams). RDs share the prosodic features of the type 3 adverbial clauses we have seen (cf. the two F0 diagrams in (22) and (24) in section 4.1).

- (31) a. Yī-tái diànnǎo ya, tā mǎi-le.  
           one- CL laptop SFP he buy-PERF  
           'A laptop SFP, he bought.'
- b. Tā mǎi-le yī-tái diànnǎo ya.  
           he buy-PERF one-CL laptop SFP  
           'He bought a laptop SFP.'

The peculiarity of such an RD construction is that the "right-dislocated" part is to the right of the SFP, and need not be a constituent in phrase structure. In (31a), the "right-dislocated" part is the subject and the verb, which follow the SFP *ya*. In Cheung (2009), the surface word order in (31a) is derived from the raising of the object DP around the SFP, the head in a head-initial functional projection (ForceP), to the Specifier of a higher focus position (FocusP), as shown by the bracketing in (32). The raising is triggered by the informational focus feature on the object DP.

(32) [<sub>FocusP</sub> O<sub>i</sub> Focus [<sub>FP</sub> SFP [<sub>IP</sub> S [<sub>VP</sub> V [<sub>i</sub> Θ<sub>i</sub>]]]

With reservations to be explained shortly, we agree with Cheung's judgment that RD sentences can be answers to *wh*-questions such as 'what did he buy,' and the object DP is the information focus. However, we would like to present three empirical observations which are not expected under Cheung's analysis that assumes informational focus to be the trigger of movement.

### 4.3.2 Three empirical challenges

In Chinese, to answer an information question like (33a), (33b) with SVO order is felicitous without an SFP. (33b) does not have the intuition of incompleteness (cf. Tsai 2008). Different from the example in Cheung (2009: 199), we do not end the question in (33a) with any SFP, in order to make it attitude-neutral. Again, the question sentence can "stand-alone" without any "incomplete feeling." By contrast, (33c), in which the object is fronted, was judged to be infelicitous. When instructed to try their best to make (33c) acceptable with the given lexical items, some native speakers suggested that it might be improved if the fronted DP object was accented, but continued to comment that there was no good reason to stress the fronted object DP in this context, and even so it was still somehow odd as an answer to (33a). By contrast, when the SFP *ne*, which puts the speaker's subjective emphasis marking on a declarative sentence, is supplied as in (33d), the native speakers all found the example to be improved and acceptable.<sup>14</sup>

(33) Question:

- a. Zhāngsān mǎi-le shénme?  
 Zhangsan buy-PERF what  
 'What did Zhangsan buy?'

<sup>14</sup> Cheung's (2009) analysis is supposed to apply to Mandarin and Cantonese equally. Similar contrasts are replicated with Cantonese examples below.

- (i) a. Keoi maai-zo matje?  
 he buy-PERF what  
 b. Keoi maai-zo jat-bou dinnou.  
 he buy -PERF one-CL laptop  
 c. %Jat-bou dinnou keoi maai-zo.  
 one-CL laptop he buy-PERF  
 d. Jat-bou dinnou lo! keoi maai-zo.  
 one-CL laptop SFP he buy-PERF

Answer:

b. Tā mǎi-le yī-tái diànnǎo.  
 he buy-PERF one-CL laptop  
 ‘He bought a laptop.’

c. %[Yī-tái diànnǎo] tā mǎi-le ti.  
 one-CL laptop he buy-PERF  
 ‘A laptop, he bought’

d. [Yī-tái diànnǎo] ne tā mǎi-le.  
 one-CL laptop SFP he buy-PERF  
 ‘A laptop SFP, he bought’

These cases reveal a crucial difference in the felicitousness of (33c) and (33d) as answers to an information question. On the surface, it seems that the reason for the contrast lies in the presence/absence of the SFP. Cheung (2009) correctly points out the importance of SFPs in RDs. However, the key assumption on SFPs in Cheung’s analysis is for them to be the head of the head-initial ForceP, and when the sentence does not contain an SFP, it is assumed that there is a silent SFP (Cheung 2009: 201, ft.6). Therefore, under Cheung’s analysis, (33c) would also have an SFP, and thus should be as good as (33d), contrary to the judgment just presented. This is the first empirical challenge.

Second, Lu (1980) and Zhang & Fang (1996) observed that, compared to declarative sentences, RDs occur more frequently in interrogative, imperative, negation, and exclamative sentences, which casts doubt on the function of RDs as answers to information-seeking *wh* questions.<sup>15</sup> Moreover, these examples of RDs correspond to speech acts such as asking a question (34a), making a request (34b), or giving an order (34c). These examples can be out-of-the-blue utterances. If information focus is diagnosed by question/answer pairs as suggested in Cheung (2009: 203), it is difficult to assign the status of informational focus to the displaced parts.

- (34) a. Suān bú suān, zhè lí? (Lu 1980: 29)  
 sour not sour this pear  
 ‘Is the pear sour?’

<sup>15</sup> Although there is no corpus count to show this contrast quantitatively, Lu (1980) consulted with 25 Beijing Mandarin speakers, and Zhang & Fang’s (1996) generalization is based on corpus studies.

- b. kàn      diànyǐng qù, wǒmen. (ibid.)  
 watch movie go we  
 ‘Let’s go and watch a movie.’
- c. Zǒu kuài diǎnr, nǐ-men!  
 walk fast a.little you-PL  
 ‘Walk faster, you guys!’

The third observation concerns the use of an RD in (33d) in that context. Although it is judged to be acceptable by our informants, four out of five native speakers wondered why someone would use the displaced form in (33d) as an answer to the question in (33a), whereas (33b), i.e., the one with SVO order, is perfectly fine. We share the native speakers’ comment and find (33d) to be an “overstatement,” i.e., a pragmatically marked response to (33a).

These empirical observations raise two issues, which are two sides of the same coin. First, the informational focus status of an XP does not justify its movement in the variety of Chinese studied here.<sup>16</sup> There must be “something more” that triggers the occurrence of an RD structure. An obvious option is the presence of an overt SFP as in (33d) or special speech acts as in (34). However, this option is just a restatement of the contrast. A further question would be what property of an overt SFP and the special speech act is it that triggers the movement? The second issue is that, in the question-answer context where the question is attitude-neutral, the RD structure in (33d) is considered to be pragmatically marked.

### 4.3.3 *Our analysis*

As shown in our analysis of type 3 adverbial clauses in 4.2, the “something more” is the discourse-pragmatic use of focus. Chinese native speakers’ judgments and comments are in line with the theoretical and experimental studies suggesting that “focus” movement is sensitive to more than alternativeness or exhaustiveness. For instance,

<sup>16</sup> This assumption seems to go against studies that employ (information) focus-driven movement to derive ellipsis-related structures, such as gapping in Ai (2014) and fragment answer in T.-C. Wei (2016). These analyses both employ object movement driven by a focus feature plus TP/IP deletion at PF. Specifically, in T.-C. Wei (2016), the feature that triggers the movement is postulated as  $[E[\iota\text{Foc}^*]]$ , and  $[E]$  triggers subsequent PF-deletion (cf. Merchant 2001, 2005). Without the E feature, the overt spell-out of the moved structure is judged to be infelicitous.

Frey (2010) argues for an A'-movement to the left periphery driven by emphasis in German. Skopeteas and Fanselow's (2011) experimental study shows that in German, Spanish, and Greek (but not Hungarian), the fronting of an object with informational or identificational focus depends on the property of the context, and is further sensitive to discourse factors, such as the predictability of the information. In Chinese, studies by Gao (1994), Paul (2005), Badan & Del Gobbo (2011) point out that Chinese does not have focalization strategies to the Left Periphery. Therefore, we propose that in Chinese, the trigger of movement is not informational focus, but the contrastive focus as defined in (25). Specifically, the contrastive focus status of an expression  $\alpha$  is determined by discourse. The expression  $\alpha$  is contrastively marked if the speaker considers content  $\alpha$  or the speech act containing  $\alpha$  likely to be unpredicted by the addressee.

To illustrate, A's question in (35) is a rhetorical question, expressing A's assertion that "*Zhangsan can't afford anything.*" In this context, the pragmatic oddness with the RD in answer B1 disappears. Moreover, B2, the preferred SVO order in (33), becomes pragmatically marked, because in this context, B2 conveys a sense that the speaker of B2 seems nonchalant about the conversation.

(35) Context: A and B know that Zhangsan went shopping.

A: Zhāngsān nàme qióng, tā qù guàngjiē néng mǎi shénme a?  
 Zhangsan that.kind poor he go shopping can buy what SFP  
 'Zhangsan is so poor. What could he possibly afford going shopping?'

B1: [Yī-tái diànnǎo] ne tā mǎi-le. (= (33d))  
 one- CL laptop SFP he buy-PERF  
 'A laptop, he bought'

B2. Tā mǎi-le yī-tái diànnǎo. (= (33b))  
 he buy-PERF one-CL laptop  
 'He bought a laptop.'

To explain the contrast, we use the diagnostic of contrastive focus in section 4.2. The contrastive focus is on the expression  $\alpha$ , as in (36). The speaker assumes that the information  $\alpha$  is unlikely to be expected by the hearer and thus contrastively marks  $\alpha$ . The contrastive focus on the object is determined by its discourse-related predictability. If

the speaker B is not interested in the conversation, he would make no effort to swiftly update the “common ground” by using formal markings on emphasis.

(36) a. Speaker (=B)’s belief:

*$\alpha$  = Zhangsan bought a laptop.*

b. Hearer(=A)’s belief in speaker’s mind:

*Zhangsan is so poor and he can’t buy anything.*

c. Speaker’s assumption:

*$\alpha$  is likely to be unexpected by the hearer.*

In contrast, if the question by A is an attitude-neutral information question such as “*what did Zhangsan buy*,” then without an additional background assumption, speaker B will not arrive at the assumption in (36b), and consequently (36c) will not exist. If speaker B has chosen to use syntactic reordering instead of the unmarked SVO order, it indicates that the speaker has certain background assumptions which, crucially, are not in the CG content of the on-going discourse available to the bystanders. The background assumptions might be based on information beyond the current discourse. For instance, speaker B has background information that the addressee A believes Zhangsan detests modern technology, laptops particularly. Then the answer “a laptop” is unlikely to be expected by the hearer. As has been stated, such background is not available to an outsider of the conversation. Therefore, using object fronting leads to the impression of an overstatement (i.e., unnecessary emphasis).

So far, we have addressed the question of how our proposal accommodates the third challenge, i.e., the pragmatic appropriateness. The first two challenges on the seeming obligatoriness of an SFP or some other speech act are also addressed by the definition of contrastive focus. Some SFPs are the marking of emphasis triggered by contrastive focus. While (33c), repeated as (37a), is still judged to be odd in the context below, with an adverb emphasizing the amount in (37b), the sentence becomes acceptable to some informants. As for the speech act, the definition of contrastive focus allows a speech act to receive contrastive marking, as long as the speaker assumes that the addressee will not consider the speech act containing  $\alpha$  likely to be predicted by the addressee.



(37) Context: “Zhangsan is so poor. What could he possibly afford going shopping?”

- a. %[Yī-tái diànnǎo] tā mǎi-le. (= (33c))  
 one-CL laptop he buy-PERF  
 ‘A laptop, he bought’
- b. [Zhěngzhěng shí-tái diànnǎo] tā mǎi-le.  
 fully ten-CL laptop he buy-PERF  
 ‘Fully 10 laptop, he bought’

The table in (38) summarizes the difference between our proposal and Cheung’s (2009). Our proposal not only accounts for the three empirical observations regarding RDs in Chinese, but also identifies the functional motivation of RD structures.

(38) TABLE 6: Differences between our analysis and Cheung (2009)

	Our proposal	Cheung 2009
Trigger of movement	Contrastive focus (Zimmermann 2008; cf. section 4.2.1)	Informational focus (É.Kiss 1998)
Landing site	Specifier of DiscourseP	Specifier of FocusP

#### 4.4. Section summary

To conclude our analysis on type 3 S-final adverbial clauses, we go back to the question raised initially in this article: are the marked S-final adverbial clauses in Chinese systematic or idiosyncratic? At this point, we can answer that at least one of them—type 3—is systematic. They are not a purely syntactic phenomenon because their occurrences are restricted by discourse conditions. However, they are not random instances of language use because of the correlations between discourse conditions and formal properties captured in our proposal.

## 5. Type 4 adverbial clauses

The analysis we just proposed is for the S-final adverbial clause that assumes the discourse-organizing function (type 3). On the other hand, some S-final adverbial clauses in Chinese can be categorized as having the local discursive function, similar to type 4 in English. To identify an S-final adverbial clause as having the “local” function, we use two criteria: first, the adverbial clause specifies the circumstance of the state of affairs in the main clause; second, the adverbial clause does not have a discourse antecedent. This type does not have the prosodic properties of type 3 as shown in section 4.1; instead, they have sentential stress, and the preceding “main clause” has a concluding intonation. The term “main clause” is a misnomer, because the preceding clause is actually an independent clause. The final adverbial clause is an “afterthought” or a “fragment” which is intended to be interpreted within the scope of the preceding clause (i.e., having the preceding clause as the main clause). These properties will be clarified in this section and we will claim that the “afterthought” property is the other condition that makes the marked order acceptable, aside from the condition presented in the previous section.

### 5.1 The condition that allows type 4

We use an example to spell out the “afterthought” property of type 4 adverbial clauses. The following discourse is from a talk show. The key turn X3 in (39) contains an “S-final” adverbial clause. We put quotation marks on “S-final” because the positional relation is final only if the preceding clause is taken as the main clause. However, because the conditional clause is separated from the preceding clause, as indicated by the speaker’s laugh for 0.6 second, the adverbial clause is more like a fragment or afterthought as mentioned.

(39) (From MLC; the show was aired on July 5th, 2013)

Xu (=X) is the host of the talk show, and Li (=L), a play writer and director is the guest.

X1 *So what can people get from watching Li Guoxiu’s play?*

X2 *This is also the question that the woman who was considering to spend 500 yuan on the ticket wanted to ask you, right?*

- L1 Duì (+) wǒ zài zhège hǎoxiàng shì yīnggāi shì  
right I at this probably be should be  
'Right. I was on, probably.'
- L2 yī jiǔ bā bā nián ba yī yuè èr shí qī hào.  
1988 year SFP January 27th  
'January 27th, 1988.'
- L3 (+)Nǐ bú néng gēn mójiézuò liáotiān a.  
you not can with Capricorn chat SFP  
'You can't chat with a Capricorn person.'
- L4 (+)yīnwèi wǒmen dōu jì nián.yuè.rì de. ((laugh++))  
because we all remember date DE  
'because us Capricorn people have a good memory about date.'
- L5 wǒ zài yī yuè èr shí qī hào nà [tiān]—  
I at January 27th that day  
'I was on January 27th—'
- X3 [Yě] jì chóu duì ma? ((laugh))(++)  
also remember grudge right yes-no  
[rúguǒ dézuì -le nǐ] dehuà.  
if offend-PERF you if  
'(Capricorn people) also hold grudges, right? If someone has  
offended you.'
- L5 [Eh: >cuò cuò cuò<]. (++)  
eh wrong wrong wrong  
'Wrong'.
- L6 mójiézuò shì jì zhàng bú jì chóu.  
Capricorn be remember debt not remember grudge  
'Capricorn people remember debts but do not hold grudges.'

In the preceding discourse, the host Xu was asking the guest Li to talk about what his play would bring to the audience. She then followed up with the comment that the question was also asked by a woman in an incident before. In line L1, Li started to tell the incident by first recalling the exact date. After two fillers ('probably be',

‘should be’), he recalled the exact date, and made a joking comment about himself in line L2 and L3. He returned to the topic, stating the event date in line L4, but was cut off by Xu with a follow-up banter in line X3.

Xu asked the question because she had the assumption in (40a). (40a) is assumed by Xu, because the content has not occurred in the preceding discourse (i.e., the interview till that time point), so it is not in the CG content before Xu’s turn in line X3. (40b) is factual information and is in the CG content. Based on the fact in (40b), Xu drew the inference in (40c), which is reflected in her question that “*do you also hold grudges*” in line X3. The fact that (40c) is Xu’s inference but not shared by Li is illustrated in Li’s negative answer with emphasis in line L5.

- (40) a. The woman was impolite and offensive. (Xu’s assumption)
- b. Li can recall the exact date when he encountered the woman.  
(Fact)
- c. He might have been holding a grudge against the woman.  
(Xu’s inference)

In the target turn X3, because of the laugh, we can infer that the *yes-no* question was originally uttered as a “stand-alone” question. The host added a condition to specify that Capricorn people (including the guest) hold grudges under circumstance where someone has offended them. This add-on condition makes holding grudges seem more or less acceptable. Thus, although the question is originally uttered independently, the conditional is added and intended to be interpreted within the scope of the question. As indicated by the transcription, the conditional clause in line X3 overlaps with the utterance in line L5. The laughter after the question in X3 indicates that the “main” clause and the conditional are in separate intonation units. In addition, the final conditional clause does not have a faster tempo, and the final conditional clause has a normal intonation contour with the word *dézui* ‘offend’ carrying the stress. The phonetic correlates reveal that type 4 is different from type 3 in all the formal properties.

Another piece of evidence for the “local” function of some S-final adverbial clauses comes from the ‘—’ used in written texts (dash in written Chinese has double the length of the em dash in English).

The examples of type 4 adverbial clauses we obtain from the text use a dash to separate the final adverbial clause from the preceding clause, such as (41).

- (41) Zài nín yīshēng de yánjiū gōngzuò zhōng,  
 at you whole.life DE research work inside  
 ‘Among the research works in your whole life,

nín rènwéi nǎxiē shì zuì zhǔyào de gòngxiàn  
 you think which be most primary DE contribution  
 which contributions do you think are the primary ones

—rúguǒ xiāng.bǐ zhī.xià yǒuxiē gèng wéi zhòngyào dehuà? (CCL)  
 if compare under some more be important if  
 if some are more important than others under comparison?’

According to the *General Rules of Punctuation* (GB/T15834, 2011), the first use of a dash (i.e., *pòzhéhào*) is to mark the content following the dash as an explanation or supplement to the preceding text (phrase or sentence). One of the examples in the document is (42). The final concessive-conditional is marked with a dash, indicating that the clause is supposed to be understood as a supplement to the preceding text. Specifically, in (42), only part of the preceding clause (underlined part) is the associate of the add-on conditional-concessive clause. The sentence is not to be interpreted as (a) in (43), but as in (b).

- (42) Wǒ zhème yìzhí jiānchí fènfā dúshū  
 I such all.the.time persist exert.hardwork study  
 ‘I persist on studying hard all the time like this’

yě xiǎng jiè cǐ huànrǎng dì.mèi \_\_\_\_\_ men  
 also want use this arouse younger.sibling PL  
rè’ài shēnghuó de xīwàng  
 passion life DE hope

‘(I) also want to use this to arouse my younger sibling’s hope for the passion in life’

—wúlùn huánjìng duōme kùnnán. (GB/T15834, 2011: 8)  
 no.matter situation how difficult  
 ‘no matter how difficult the situation is.’

- (43) a. No matter how difficult the situation is, I want to use this to arouse my younger siblings' hope for the passion in life.
- b. I want to use this to arouse [my younger siblings' hope for the passion in life no matter how difficult the situation is].

To summarize, the S-final adverbial clause in this case is separated from the preceding clause. The preceding clause should not be called "main" clause, because when generated it is not intended to be the main clause of a complex sentence, although it is interpreted as the main clause of the following adverbial clause. The adverbial clause has the local function and has independent stress indicating a focus element.

## 5.2 Analysis for type 4

We turn now to the question raised earlier whether type 4 S-final adverbial clauses (afterthought) are systematic. On the one hand, their afterthought property hints that they are related to language performance. On the other hand, because type 4 adverbials exhibit discursive functions and correlated grammatical features and are systematically different from type 3 as listed in (44), they require formal accounts.

(44) Type 4 is different from type 3 in that:

- a. type 4 adverbials have different discursive functions;
- b. the preceding clause is emphasized with type 3, but not necessarily with type 4;
- c. type 3 adverbials have a faster tempo, no sentence stress, and low contour, none of which is observed with type 4.

We summarize the generalizations regarding type 4 in (45), which any analysis of type 4 adverbials should capture.

- (45) a. The preceding clause is an independent sentence when type 4 occurs.

- b. Type 4 is connected to the preceding clause in interpretation as if it is a type 2 (S-initial, unmarked, local function).
- c. Type 4 is generally a marked clause order, acceptable as an “afterthought.”
- d. The differences between type 4 and type 3 are as listed in (44)c.

Before presenting our analysis, we mention an intuition-based description in Chao (1968). Recall in section 4.1, that the prosodic features of the second and third example shown in (22) and (24) are instantiations of Chao (1968:132) in (46).

- (46) a. “while an interpolation may come after a pause, it is more likely to come after a negative pause; that is, there is not only no pause, but the break is marked by a faster tempo, a *piu mosso* on the interpolated part.” (132)
- b. “If an unplanned part is added to a sentence which has already been completed, then it is an afterthought form. Afterthought forms have the same likelihood of faster tempo as interpolations and for the same reasons. But what goes on before an afterthought can stand as a complete sentence without it.” (132)

The quotation in (46) indicates that the “afterthought” in Chao (1968) is equivalent to our type 3 in terms of formal properties. This is an unfortunate mismatch of terminology, because we labeled our type 4 as “afterthought.” The quotation in (47) below further emphasizes the prosodic characteristics of the “afterthought” in Chao (1968), which is type 3 in our analysis.

- (47) (116, on final reason clauses) “As an afterthought, the consequent clause is spoken with a concluding intonation /./ and the afterthought clause fails to be a separate sentence only by the *piu mosso* tempo in its first few words, characteristic of afterthought expressions.”

We can infer from Chao's claim that without the prosodic features, main clause and afterthought adverbial clause would be parsed as two separate sentences. Notice that the type 4 pattern we have just identified does not have the prosodic features of type 3, as summarized in (44c). We shall keep the descriptive label type 3 and type 4. However, we shall refer to the condition in which type 4 occurs as "afterthought" because of the analysis we are presenting below.

We propose that the bi-sentential plus PF-deletion analysis proposed for phrasal afterthought in German (cf. Frey and Truckenbrodt 2015; Ott & de Vries 2016, among others), can be extended to our type 4 adverbial clauses. Phrasal afterthought also exists in Chinese. For instance, the modifying phrase in (48) is not in the canonical order in Chinese. The unmarked position for the adjective is noted with the index. The preceding clause is an independent sentence because it has a concluding intonation. Moreover, the afterthought phrase can receive stress. According to the bi-sentential analysis, (48) has the underlying structure in (49). Because the afterthought part is underlyingly an independent clause, it can have an SFP, such as the *ne* in (50). This particle indicates the speaker's attitude of taking the woolen material as something worth emphasizing, perhaps due to its price.

- (48) Wǒ mǎi-le [<sub>A</sub> dǐng màozi], [<sub>A</sub> nizi-de]. (Lu 1980: 31<sup>17</sup>)  
 I buy-PERF CL hat woolen  
 'I bought a hat, woolen.'

- (49) [<sub>CP1</sub> Wǒ mǎi-le dǐng màozi], [<sub>CP2</sub> pro shì nizi-de]<sup>18</sup>  
 I buy-PERF CL hat be woolen  
 'I bought a hat; (it is) woolen.'

- (50) Wǒ mǎi-le [<sub>A</sub> dǐng màozi], [<sub>A</sub> nizi-de ne].  
 I buy-PERF CL hat woolen SFP

<sup>17</sup> Lu (1980) comments that the example is not a case of dislocation sentence (i.e., "right-dislocation," cf. section 4.3) but a complex sentence. Lu's intuition is in line with the bi-sentential structure.

<sup>18</sup> This CP2 structure includes a *pro* and an elided copula. This is the *pro* analysis in the literature on right-dislocation and afterthought (cf. Ko 2014 for a comprehensive review of different bi-sentential approaches to afterthought). Here we use the *pro* analysis as illustration because the leftward movement of the modifying phrase results in an unacceptable sentence as below:

(i) \*Nizi-dei, wǒ mǎi-le dǐng màozi  
 woolen I buy-PERF CL hat



We claim that the bi-sentential structure is a plausible analysis for type 4 final adverbial clauses, because it accounts for all the points in (45). First, it acknowledges the independent status of the preceding clause because the preceding clause and the adverbial are generated as two separate sentences. Second, because the second part containing the adverbial clause has a full-fledged structure with the preceding clause as its main clause (deleted), it explains how the afterthought is interpreted as if it is connected with the preceding sentence. Third, the afterthought condition indicates that the adverbial clause is to be interpreted within the scope of the preceding clause. The bi-sentential analysis offers the mechanism for achieving this via coordination and PF-deletion; the marked order is possible under such a condition. Fourth, because the bi-sentential analysis contrasts with the movement analysis we proposed in section 4.2, the differences between type 3 and type 4 are also accounted for. That is, type 4 adverbial clauses can be analyzed as having the structure and derivation as: [CP1 CP2], where CP1 is what has been labeled as the main clause. CP2 is a complex sentence, containing the adverbial clause in the S-initial position followed by the main clause identical to CP1. The main clause in CP2 undergoes deletion.<sup>19</sup> Accordingly, the type 4 adverbial clause actually should not be “S-final” adverbial clauses, as they are in the S-initial position. Nonetheless, we will continue to refer to type 4 adverbial clauses as S-final adverbial clauses because, on the surface, it appears that they follow the main clause.

Finally, we make three more comments comparing different analyses. First, a right-adjunction structure cannot be adopted for type 4 adverbial clauses because it goes against the independent status of the first clause, i.e., (45)a. Moreover, it cannot capture the fact that an SFP is possible with both the “adverbial” and “main” clause, as noted in (98) in Part 1, repeated below:

- (51) wǒmen hái shì zǒu ba, suīrán yǒu rén bù gāoxìng ne!  
 we still go SFP although have people not happy SFP  
 ‘Let’s still go, although there are people unhappy (about it).’

<sup>19</sup> The bi-sentential analysis can be extended to multiple structures, because more than one afterthought is allowed, as in the example below:

(i) (From the novel *Bianjibu de Gushi* “Stories of the Editorial Board” by Wang Shuo; CCL):

Zuotīān wǎnshàng wǒ kànjiàn nǐ le, [zài Xidan], [hé yī ge nǎnde].  
 yesterday evening I see you SFP at Xidan with one CL man  
 ‘Yesterday evening I saw you, at Xidan, with a man.’

Second, we would like to dismiss the alternative according to which the type 4 bi-sentential plus deletion analysis can be adopted for type 3 to obtain a uniform analysis on S-final adverbial clauses. The different generalizations observed regarding type 3 and type 4 preclude a uniform analysis, one of the differences being the emphasis on the main clause in the type 3 cases. The bi-sentential analysis cannot account for this point, which is the key motivation in our proposal.

Third, we introduced in Part 1 (section 3.4.1.1) the idea that some S-final reason and concessive clauses are root sentences. In (52a), the S-final reason clause explains why the speaker has made the preceding assertion. Relocating the reason clause to the S-initial position in (52b) leads to an odd interpretation. The contrast indicates that the S-final reason clause in (52a) does not have an underlying S-initial position as in (52b).

- (52) a. Mǎlì bú zài zhèlǐ, yīnwèi wǒ méi kànjiàn tā. (=92) in Part 1)  
 Mary not at here because I not see her  
 ‘Mary is not here, because I don’t see her.’

- b. #Yīnwèi wǒ méi kànjiàn tā, Mǎlì bú zài zhèlǐ.  
 because I not see her Mary not at here  
 ‘Because I don’t see her, Mary is not here.’

The S-final reason clause in (52a) is coordinated with the preceding clause, but it is not type 4 because it cannot occur in the S-initial position at all. It does not involve deletion of the main clause in the second conjunct sentence, as we have proposed for type 4. This is probably due to the fact that reason clauses can be predicates:

- (53) Mǎlì kěndìng bú zài zhèlǐ, (nà (= wǒ zhème shuō) shì)  
 Mary certainly not at here that I so say be  
 yīnwèi wǒ méi kànjiàn tā.  
 because I not see her  
 ‘Mary is certainly not here, (that is) because I don’t see her.’

### 5.3 A seemingly mixed example

In this section, we present a case that, on first sight, has mixed properties of type 3 and 4. Such a seemingly mixed case might appear to undermine the claim that differentiates between the two types

of adverbial clauses. However, we argue that our analysis actually justifies the categorization of the example as type 4. It is exactly due to the formal analysis and methodology that makes it possible to identify the category of this example. An example illustrating such a case is (54), which is a segment taken from a talk show.

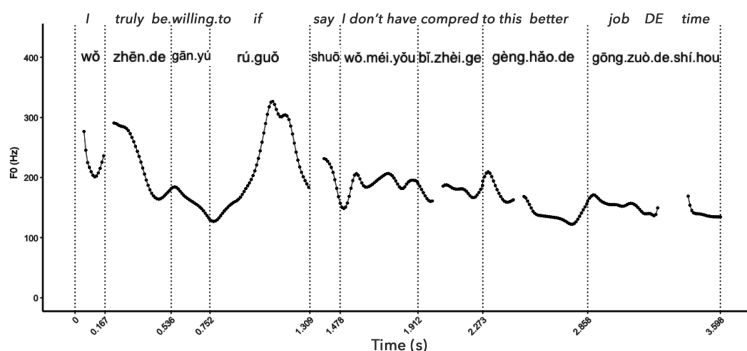
- (54) *Context: Ning is a famous actress and the guest in Xu's talk show. Ning is talking about her job as an animation painter that was well-paid, but the work was very demanding and arduous. She took the job before becoming an actress because she did not have other better choices at that time. Before Xu's question in X1, Ning just stated how arduous and exhausting the job was with 10 sentences. Then the interviewer Xu asks:*

- X1 Nèi shíhou nǐ xiǎngshòu ma?  
 that time you enjoy yes-no  
 'At that time, did you enjoy it?'
- X2 (+) huòzhě shuō nǐ(++) gānyú  
 or say you be.willing.to  
 zhèyàng (++) [kǔ-hā.hā.de huà ma?]  
 so arduously paint yes-no  
 'Or were you willing to paint so arduously?'
- N1 [Wǒ gānyú] (+) wǒ wǒ zhēnde gānyú  
 I be.willing.to I I truly be.willing.to  
 'I'm willing to. I truly am willing to (do so)'
- N2 rú:guǒ shuō wǒ méi yǒu bǐ  
 if say I not have compare  
 zhè-ge gèng.hǎo de (+)gōngzuò de shíhou.  
 this-CL better DE job DE time  
 'if (you mean) a time when I don't have a better job.'

At first, the conditional in line N2 seems to be of type 3 because it checks all the relevant generalizations we have made on type 3. The final conditional clause 'if you mean a time when I don't have a better job' is linked to 'at that time' in line X1. Thus, it has a discourse antecedent, and can be categorized as having the discourse-organizing function. The preceding main clause also demonstrates

the emphasis-related properties. First, the answer ‘*be willing to*’ in line N1 is repeated twice. Second, as shown in the diagram in (55), the adverb *zhēnde* ‘truly’ is prominent, while the conditional clause has a falling intonation contour.

(55) F0 diagrams of the utterance in line N1 and N2



To check the contrastive marking on the main clause, we use the methodology we applied in section 4.2, and obtain (56), which gives rise to the contrastive status of the main clause.

(56) a. Speaker's belief:

$\alpha$ =*I was really willing to do so.*

b. Hearer's belief in speaker's mind:

*You might not be willing to do so as you stated how arduously and unpleasant the job is.*

c. Speaker's assumption:

$\alpha$  is likely to be unexpected by the hearer.

However, there is a crucial oddity with this example. As shown in the diagram, the two syllables of the conjunction *rúguǒ* ‘if’ are significantly lengthened. Also, the speaker had a hand motion gesture overlapped with the utterance of *rúguǒ* (see video link in appendix). None of the type 3 adverbials have these markings of emphasis on the conjunction word.

We categorize the example as an instance of type 4 and assign it the bi-sentential structure for two reasons. First, the adverbial clause carries a contrastive focus, which is not compatible with the derivation of type 3, which only allows the main clause to be contrastively marked. In this example, the emphasis on the conjunction word indicates that the conditional is meant to specify the state of affairs in the main clause: the speaker was willing to take the unpleasant job only if she could not find any better job. That is, the speaker contrasted her situation then with her situation now, and implied that she would not be willing to take the painting job now, as she currently had better choices. Secondly, as shown in (55), the two syllables of the conditional conjunction *rúguǒ* ‘if’ is lengthened, which is opposite of the *piu mosso* tempo (cf. (46)). This indicates that the two clauses belong to separate stress domains, hence intonation units.

## 6. Potential challenges for the derivational analysis

The analyses for the two types of S-final adverbial clauses presented in sections 4 and 5 are derivational, because neither of the two types is base-generated as right-adjunction to the preceding clause—one involving the raising of the main clause and the other, deletion of the main clause. In this section, we address possible challenges from the right-adjunction analysis mentioned at the end of section 4.2. We first review the potential arguments from the right-adjunction analysis and present some new empirical observations regarding this issue. The new observation allows us to locate the testing ground for the two approaches. Then we establish a key premise for our argument, concerning the identity of the adverb *jiù* ‘then’. Finally, we illustrate how our analyses on S-final adverbial clauses account for the challenge.

### 6.1 New empirical observation

In complex sentences, the main clause usually has a correlative adverb co-occurring with the adverbial clause (cf. section 3.1 of Part 1). For the conditional clause *rúguǒ* ‘if’, the correlative adverb is *jiù* ‘then’. It is claimed that when the conditional occurs at the S-final position, the occurrence of *jiù* ‘then’ is unacceptable in the main clause. See the three examples in (57) from previous studies.

(57) Schematic representation: \*[…*jiù*…] [rúguǒ…]

- a. Wǒ (\**jiù*) bù cānjiā huì le,  
 I then not attend meeting SFP  
 if he come if  
 rúguǒ tā lái dehuà. (Paul 2015: 294)  
 ‘I won’t attend the meeting, if he comes.’
- b. Nǐ (\**jiù*) bú bì qù,  
 you then not need go  
 rúguǒ shíjiān bú gòu. (Tang 1990: 120)  
 if time not enough  
 ‘you do not need to go if the time is not enough’
- c. Zhāngsān (\**jiù*) xiǎng qù hǎibiān,  
 Zhangsan then want go seaside  
 rúguǒ tiānqì hǎo. (Paul 2016: 193)  
 if weather good  
 ‘(\*Then) Zhangsan (\*then) wants to go to the seaside, if the weather is good.’

If all the examples that instantiate the schematic representation in (57) are judged to be unacceptable, it would cast doubt on a derivational analysis, which either dislocates the conditional to the right of the main clause or moves the main clause to the left of the conditional (cf. Gasde & Paul: 289; Paul 2015: 294). It is because, when the conditional clause is in the S-initial position, the occurrence of *jiù* is acceptable, as in (57). If (57b) is derived from (58) via movement (of either the main or adverbial clause), regardless of the timing of the movement (i.e., in syntax or at PF), *jiù* should be retained in the derived sentence, and its occurrence should be possible, contra (57b).

- (58) Rúguǒ shíjiān bú gòu, nǐ *jiù* bú bì qù. (cf. (57b))  
 if time not enough you then not need go  
 ‘if time is not enough, you do not need to go.’

In contrast, a base-generated right-adjunction approach may rely on the constraint in (59) to explain the unacceptability of *jiù* in (57b). Note that (58) is a restatement of the schematic representation in (57).

However, the constraint in (59) seems plausible, considering how the function of *jiù* in conditional complex clauses is explained as in (60) in the grammar books (cf. Lü et al., 1980: 317; Li & Thompson 1981: 683; among others).

- (59) The pair *rúguǒ...jiù* ‘if...then’ is restricted by directionality: *jiù* ‘then’ is acceptable only following *rúguǒ* ‘if’.
- (60) The adverb *jiù* (‘then’) is used after a conditional clause conjunction such as *rúguǒ* to introduce a natural development or reach the conclusion of the previous statement.

The proponent of a derivational analysis may try to dismiss this doubt by assuming that (i) movement takes place in PF, and (ii) the constraint in (59) is a PF filter. Since the derivation leads to the offending surface string *jiù...rúguǒ* ‘then...if’, *jiù* must be deleted. We will not adopt this approach, because: (i) in our analysis of type 3 S-final adverbial clauses, movement occurs in syntax, and most importantly, (ii) the constraint in (59) is empirically false and the statement in (60) is inadequate.

(59) is empirically inadequate, because not all examples instantiating the schematic representation in (57) are judged to be unacceptable. Our informants all accepted (57a) without any manipulation of context or prosody. Five out of eight informants accepted (57b) and (57c). They commented that to make the sentence natural, in (57b), there should be stress on the subject ‘you’ or the verb phrase ‘not need to go’, and in (57c), stress should be on *jiù* or the object ‘seaside’. Furthermore, although the judgment on the latter two examples required some manipulation of context and prosody, and not everyone accepted it at the first try, when we added a sentence final particle like *le*, *ba*, or *bei*, to the main clause, as in (59), the examples were judged to be acceptable by all our informants.

- (61) Nǐ jiù bú bì qù le/ba/bei,  
       you then not need go SFP  
       *rúguǒ shíjiān bú gòu.* (cf. (57b))  
       if time not enough  
       ‘you do not need to go if the time is not enough’

Note that (57a), which is judged to be acceptable, also has an SFP *le*. The empirical observation so far is summarized in (62).

(62) For all the examples that instantiate the schema “[...*jiù* ‘then’ ...] [*rúguō* ‘if’ ...]”, the presence of *jiù* is possible in the first clause when:

- a. there is an SFP in the first clause, or
- b. some constituent in the first clause receives stress (i.e., is being emphasized).

The observation in (62) holds for all the intuition-based examples we have constructed and the corpus data we have collected. Therefore, all the ‘\*’ marked examples in previous literature are all acceptable (or at least to some degree) when either of the two conditions in (62) is met. The fine-grained conditions on the occurrence of *jiù* given in (62) are not expected under the symmetrical left/right-adjunction analysis. With symmetrical adjunction, if the constraint in (59) is adopted/abandoned, the occurrence of *jiù* should be impossible/possible across-the-board. Both situations are not in line with empirical observations. Therefore, (62) will be a challenge to the symmetrical adjunction analysis and will argue for the derivational analysis, as far as the derivational analysis can provide a convincing explanation for (62).

Based on the discussion above, accounting for the occurrence of *jiù* becomes the testing ground for the two approaches. To facilitate the discussion, we need to reframe the question on the occurrence of *jiù* in terms of the identity of *jiù*. Recall that *jiù* in (58) is called a correlative adverb, defined as in (60). One may question if the *jiù* in the acceptable instances with added mechanisms (SFP and/or stress) might be different, i.e., not a correlative *jiù*. If it is a different one, the generalization still holds that the correlative *jiù* cannot occur in the marked clause order.

To justify their argument, the proponents of symmetrical adjunction must show that the *jiù* in the marked word order is not the correlative *jiù*. That is, the empirical observations in (62) are still valid, but they are simply due to a different *jiù*. The correlative *jiù* still cannot occur with the marked clause order.



To argue for the derivational analysis, we first establish the following premise. We dismiss the term “correlative adverb” for *jiù* by illustrating that the occurrences of *jiù* in conditional complex sentences (marked or unmarked order alike) are the same, which is a contrastive-marking adverb. As a contrastive marker, *jiù* must be associated with some constituent in the sentence. The associate of *jiù* can be a phrase or even a whole subordinate clause. The associate is emphasized and contrastively marked. *Jiù* and its associate obey a locality constraint: they must be in the same structure which is no larger than a root clause.<sup>20</sup> Once this premise is proved, our derivational analysis on S-final adverbial clauses shows that problematic examples either fail to meet the locality constraint of *jiù* (type 4: bi-sentential structure), or cannot be derived in the first place (type 3: contrastive focus-driven movement of the main clause). The two conditions in (61) are the mechanisms that ensure the associate of the contrastive marker *jiù* to be in the required structural domain of *jiù*.

## 6.2 The premise: *jiù* as contrastivity-marking adverb

In this section, we establish the premise as briefly outlined above. The description of *jiù* as a “correlative adverb” in (59) is descriptively accurate, but explanatorily inadequate. It only describes the syntactic distribution of the correlative *jiù*, which is based on observations of the unmarked word order. It is tautological but sufficient for a given descriptive grammar. However, (59) does not help to further understand the properties of *jiù* because it does not include the semantics of *jiù*, nor the pragmatic and prosodic characteristics of the clauses in which *jiù* occurs. It seems unlikely that *jiù* has no semantic effects in conditional complex sentences. Translating it as ‘then’ is a common practice but not exactly accurate. There is another ‘then’, i.e., *nàme*, which is a pro-form similar to the English then (cf. section 3.1, Part 1). Obviously, *jiù* is not a pro-form, because it is synchronically an adverb with the meaning of ‘only’, ‘just’, ‘already’, and ‘exactly’. In fact, in the conditional complex sentence, *jiù* is a contrastive marker that can be associated with different constituents as long as the locality condition is obeyed. That is, treating *jiù* as a contrastivity-marking adverb reveals why it can have this correlative function. The claim is substantiated below.

<sup>20</sup> In section 3.4 of Part 1, we differentiate types of clauses according to their sizes. A “root sentence” is one that has a DiscourseP and a “root clause,” an AttitudeP.

As a contrastive marker, the associate of *jiù* receives stress (cf. Pan 2016). In Chinese, stress is realized in the form of longer syllable duration and/or expanded pitch range (cf. Wang & Xu, 2006). In the following examples, we provide the contexts in English for ease of reading, the word with stress is marked in boldface, and we do not gloss *jiù*.

In (63), the contrastive associate of *jiù* is the subject; the subject has stress, but not *jiù* (cf. Lü et al., 1980: 316). In this context, the first-person subject is contrasted with *John* in the preceding discourse. All our informants utter the example with a full third tone on the syllable *wǒ* 'I' in this given context.

(63) 'They don't give us money. John may still go.'

Dàn **wǒ** jiù bú huì qù.

but I not will go

'But I will not go.'

In (64), the associate of *jiù* is the content expressed in the VP following *jiù*. The content of 'not going' is emphasized and contrasted with the speaker's previous decision that he is going. The two syllables in the VP *bú.qù* 'not.go' receive stress.

(64) A: 'Are you still going to the movie with us?'

B: 'I'm so tired today.'

Wǎnshàng jiù **bú qù** le.

evening not go SFP

'I will not be going this evening.'

In (65), the addressee A strongly suggests that B go, but speaker B emphasizes the point that he is not going. The emphasis is on the proposition expressed by the clause. In this case, it is the contrastive marker *jiù* that is stressed, and the associate is the clause.

(65) A: 'Just stop working and go with us!'

B: Wǒ **jiù** bú qù!

I not go

'I'm not going!'

The associate can also be a modifying VP. In (65), VP1 is a temporal modifier of VP2. The function of *jiù* in (66) is to indicate that something will happen in a very short time (cf. Lü et al., 1980: 316).

(66) A: 'Why are you still here? Go do your homework!'

B: [<sub>VP1</sub> **kàn.wán** zhè jí] jiù [<sub>VP2</sub> qù]  
 watch-finish this episode go  
 '(I will) go (to do my homework) as soon as I finish  
 watching this episode.'

In (67), B1's response has no temporal adverbs like 'immediately' or 'at once' (cf. B2). The semantics of "something will happen very shortly" and the time reference in this case are achieved by emphasizing the proposition. Accordingly, the stress is on *jiù* (cf. (65)). If there is a temporal adverbial as in B2, the temporal adverb is stressed, and the stress on *jiù* is optional.

(67) A: 'Hurry up! We're leaving.'

B1: Wǒ **jiù** lái!  
 I come  
 'I'm coming!'

B2: Wǒ **mǎshàng** jiù lái!  
 I immediately come  
 'I'll come immediately.'

Another example of a VP modifier being emphasized is (68). The rainy occasion is contrasted with usual occasions; *xiàiyǔ* 'rain' receives contrastive marking and is stressed.

(68) 'I usually go jogging in the morning.'

Dàn wǒ [<sub>VP1</sub> **xiàiyǔ**] jiù [<sub>VP2</sub> bú qù].  
 but I rain not go  
 'But I won't go if it rains.'

In all the examples we have seen so far, *jiù* and its associate are in the same clause. We take this as the locality constraint on *jiù* and

its associate. This locality condition is plausible, as we have argued in section 4.2.2 that contrastivity-marking mechanisms are local. With this in mind, now observe that the VP1 in (68) is a conditional modifier. VP1 can be fronted to the initial position and the conjunction *rúguǒ* ‘if’ can be added, as in (69). The context remains the same in (69), so the VP1 is still the contrastive associate of *jiù*, and the stress is on the fronted VP1.

(69) ‘I usually go jogging in the morning.’

Dàn (rúguǒ) [<sub>VP1</sub> **xiàiyǔ**], wǒ jiù [<sub>VP2</sub> bú qù].  
 but if rain I not go  
 ‘But I won’t go if it rains.’

It is an important observation that *jiù*, as a contrastive marker, can be associated with an S-initial conditional clause. The association relation in (69) seems to have crossed a clausal boundary and violated the locality constraint just proposed. However, the conditional clause in (69) is a type 2 adverbial clause: it is within the scope of the main clause and has the local function. We have pointed out in section 2 that type 2 adverbial clauses are central adverbial clauses (see section 3.3 in Part 1). As central adverbial clauses, they do not have a ForceP, so they are not root clauses. Therefore the conditional clause and the main clause in (69) are in one root clause, and the locality constraint is respected.

We turn to the observations in (62), repeated as (70) below. The *jiù* in (70) is also a contrastivity-marking adverb, just as the one in (69). However, unlike (69), *jiù* in the examples below are not associated with any element in the conditional clause, but with some constituent in the main clause.

(70) For all the examples that instantiate the schema “[...*jiù* ‘then’ ...] [*rúguǒ* ‘if’ ...]”, the presence of *jiù* is possible in the first clause when:

- a. there is an SFP in the first clause, or
- b. some constituent in the first clause receives stress (i.e., is being emphasized).

(71) a. Wǒ jiù bù cānjiā huìyì le,  
I not attend meeting SFP  
rúguǒ tā lái dehuà.  
if he come if (=57a)  
'I won't attend the meeting, if he comes.'

b. Nǐ jiù bú bì qù le/ba/bei,  
you not need go SFP  
rúguǒ shíjiān bú gòu.  
if time not enough (=61)  
'you do not need to go if the time is not enough'

The second condition (70b) is more straightforward. When there is no SFP, and the example is presented out of context and without intonation cues, some informants were not able to establish the association between *jiù* and certain constituent in the main clause. However, when context and intonation cues are supplied, the examples were all judged to be acceptable. For instance, the example in (57b) becomes acceptable in (72) with the given context and stress. 'John' is contrasted with the subject of the main clause 'you', which is the associate of *jiù*.

(72) 'John has to go even if he doesn't have time, but you have a different case.'

Nǐ jiù bú bì qù, rúguǒ shíjiān bú gòu.  
you then not need go if time not enough  
'you do not need to go if the time is not enough.'

So far, we have established our premise that the *jiù* in a conditional complex sentence is a contrastivity-marking adverb. In the unmarked word order, the initial conditional clause can be the associate of *jiù* provided that it is type 2; in the marked word order, the occurrence of *jiù* is also possible as long as the associate is in the same locality domain as *jiù*. This analysis of *jiù* also allows us to gain a better understanding of what *jiù*'s "correlative" use in discourse is and how it is achieved. As a contrastive marker, *jiù* is either associated with the condition or some constituent in the main clause.

### 6.3 Analysis

We now turn to the truly unacceptable case. (73) contrasts minimally with (69): they have the same context, the same association relation between *jiù* and the condition-expressing VP, and the same stress on the contrastively-marked constituent; the only difference is the clause order. (73) has been judged to be unacceptable with this context and intonation set-up.

(73) Wǒ zǎoshang tōngcháng qù pǎobù.  
 I morning usually go jogging  
 'I usually go jogging in the morning.'

Dàn wǒ (\*jiù) bú qù, rúguǒ xiàyǔ.  
 but I not go if rain  
 'but I won't go if it rains.'

The unacceptability of *jiù* in (73) is accounted for under our analysis of S-final adverbials. Suppose the conditional in (73) is type 4. Recall that type 4 is an afterthought and analyzed as having bi-sentential structures. Therefore, the preceding clause is an independent sentence. Due to the locality constraint, *jiù* cannot be associated with the VP *xiàyǔ* 'rain' in the final conditional clause.<sup>21</sup> What if the final conditional clause in (73) is type 3, which is derived by the movement of the main clause? The empirical generalizations on

<sup>21</sup> The structure for a type 4 analysis in this case is in (i): (the subscripts encode the association between *jiù* and the contrastively marked constituent XP).

(i) [CP1...<sub>jiù</sub>...], [CP2 [conditional...XP<sub>i</sub>...]] [CP1...<sub>jiù</sub>...]

The *jiù* in the first CP1 is not in the same domain with its associate. The deleted second CP1 may contain a legitimate *jiù*; but it does not alter the fact that the *jiù* in the first CP1 is in a root clause different from CP2 containing the associated conditional.

type 3 in (29a-c) are repeated in (74). (74a) indicates that the S-final adverbial clause cannot be contrastively marked. (74c) indicates that the main clause must be emphasized. To derive a type 3, the trigger is the contrastive marking on the main clause but not the adverbial clause or some constituent in the adverbial clause. According to the analysis, (73) cannot be of type 3.

- (74) a. Type 3 has the discourse-organizing function and contain given information.
- b. Type 3 is marked (as opposed to type 1) but becomes acceptable when (c) is satisfied.
- c. The content in the main clause is emphasized by the speaker.

To summarize, the true unacceptable example (73) is schematized as in (75b); (75a) is the possible case, instantiated by example (69). The boldface indicates stress. The asymmetry in (74) is captured under our derivational analysis with the premise that *jiù* is a contrastivity-marking adverb in complex sentences. This premise ties the semantic contributions of *jiù* in complex sentences with its properties in non-complex-sentence environment.

- (75) a. ok: [*rúguǒ* ‘if’ ...**X**Pi...][...*jiù*<sub>i</sub> ‘then’ ...]
- b. \*[...*jiù*<sub>i</sub> ‘then’ ...] [*rúguǒ* ‘if’ ...**X**Pi...]

Now we turn to the symmetrical left/right-adjunction analysis. Its potential challenge to our analysis probably is to take down the premise and claim that the *jiù* in the unmarked cases is different from the one in marked cases. Note that claiming *jiù* is a ‘correlative’ adverb in unmarked cases but not the marked cases is not a valid argument, because the tautological description in either (59) or (60) does not explain the real properties of *jiù*, as opposed to what has been established in our premise.

If the premise cannot be falsified, the symmetrical adjunction analysis cannot account for the asymmetry in (75). However, right-adjunction can still be retained under one condition. In Pan & Paul (section 1, this issue), one analysis for S-initial adverbial clauses is that they are in the Specifier of TopicP. Therefore, “the complex

sentence qua matrix clause in fact subsumes the adverbial clause as one of its constituents.” To account for the observed contrast, one has to claim that the initial conditional and the main clause are in one root clause, and the locality of *jiù* is respected. Meanwhile, S-final adverbial clauses are right-adjoined at the CP level of the preceding clause. (75b) has two root clauses so that the association relation violates the locality condition. This alternative must share our premise on *jiù* regarding the locality constraint we have proposed. Finally, even if the puzzle of *jiù* is explained under both approaches, the right-adjunction proposal still faces the problems presented in section 4.2.2.

## 7. Conclusion

This article (Part 2) began with the correlation between the discursive function of adverbial clauses and their formal properties. Section 1 reviewed the positional preference according to discursive functions in English discussed in the literature: S-initial adverbial clauses are unmarked for the discourse-organizing function, and the S-final ones are unmarked for the local function. The discursive function is correlated with the attachment site in syntax. S-initial adverbial clauses are CP-level adjunctions while S-final ones are vP-level adjunctions in English. Assuming the correlation between the discursive function and syntactic scope to hold cross-linguistically, we employ this set of conditions and determine that under both discursive functions, S-initial adverbial clauses are unmarked, while the S-final ones are marked in Chinese. The conclusion drawn from the intuition-based judgment is corroborated with the text frequency in corpus.

While S-final adverbial clauses have a lower text frequency and are judged to be infelicitous under typical discursive functions, their occurrence is systematic. We have uncovered two conditions under which the marked S-final adverbial clauses are allowed. The first one for type 3 is when the main clause is marked as contrastive focus in the discourse and thus moved to the initial position. In this case, the adverbial clause starts in the initial position with the discourse-organizing function. It carries background information. The main clause is marked as contrastive, and the adverbial clause ends up in the S-final position. The second condition is “afterthought” for type 4, where the main clause and the adverbial clause are in two separate



sentences. The adverbial clause constitutes an independent stress domain and can carry contrastive focus. We have pointed out the connection between phrasal right-dislocation in Chinese and type 3 adverbial clauses and suggested that our analysis can better account for the syntax-discourse related properties of right-dislocation. We have also proposed that the bi-sentential analysis on phrasal afterthought can be extended to type 4 adverbial clauses.

Finally, we present our response to potential challenges from the right-adjunction analysis. With some new empirical observations and a better understanding of the correlative adverb *jiù*, our analysis not only accounts for the unacceptability case, but also provides an explanation for the new observations.

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## Appendix

### Corpora:

1. Media Language Corpus (MLC): <http://ling.cuc.edu.cn/RawPu>  
Center for Chinese Linguistics Corpus. (CCL): [http://ccl.pku.edu.cn:8080/ccl\\_corpus/Corpus](http://ccl.pku.edu.cn:8080/ccl_corpus/Corpus) of Contemporary American English (COCA): <https://corpus.byu.edu/coca/>

*Video links of the examples used in section 4 and 5:*

2. *Good Morning Shandong news*. Video link: <https://v.qq.com/x/cover/ivqgx05s79tmkbq/p00229icl51.html>
3. Ming Jie Interview: Video link: <http://video.tudou.com/v/XMT-k3MDYyODQ4OA==.html> (Segment: 00:25:05-00:26:24).
4. Li Guoxiu Interview: Video link: <https://www.youtube.com/watch?v=XVck4sF0yk> (Segment: 00:19:50-00:20:15).
5. Ning Jing Interview: Video link: <https://www.youtube.com/watch?v=Xhijkt03sf8> (Segment: 00:13:05-00:13:48).

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# Adverbial Clauses in Mandarin Chinese

## Part 3: Postverbal purpose clauses: Complementation vs. Adjunction

WEI HALEY WEI & YEN-HUI AUDREY LI  
*University of Southern California*

### 1. Introduction

The adverbial clauses in Part 1 and 2 in this issue take sentence-initial or pre-verbal positions as the unmarked word order. The cases where adverbial clauses appear in the sentence-final position are marked. This third part of our study focuses on the constructions whose only possible position is postverbal or sentence-final, i.e., purpose, rationale, and result clauses. They take the form of (i) verb phrases, (ii) verb phrases preceded by the marker *lái* ‘come, to’,<sup>1</sup> (iii) a series of expressions containing the morpheme *yǐ* ‘to’ (generally of the form *yǐ*+V), and (iv) clauses containing the morpheme *hǎo* ‘good, in order that’. We will show that the first two, verb phrases with or without *lái*, written as (*lái*) hereafter, are essentially the same (*contra* Liao & Lin, to appear). Section 2 and 3 introduce the main properties of (*lái*) and *yǐ* series purpose clauses. Section 4 presents a complement analysis for (*lái*) purpose clauses. The *yǐ* series will be compared with *hǎo* purpose clause in section 5; and a right-adjunction structure will be proposed. Section 6 concludes with consequences and implications.

### 2. The *yǐ* ‘to’ and *lái* ‘come’ purpose clauses

In contemporary Chinese, a series of functional words as in (1a-d) expresses purposes, results, or rationales; they are generally analyzed as conjunction words in descriptive grammars (e.g., Lü *et al.* 1980).

<sup>1</sup> *Lái* has multiple functions and meanings. As a verb, it means ‘come’; as a directional complement, it points the direction toward the speaker. In the case when it starts a purpose clause, it can simply be translated as ‘to’. *Lái* can be replaced by *qù* ‘go’; the two express different directions as with the contrast between ‘come’ and ‘go’. Because the purposive *lái* VP and *qù* VP behave alike syntactically, *qù* VP expressions will not be included in the discussion.

- (1) a. *yǐ*: so as to
- b. *yǐ.biàn*: so as to / so that (*biàn*: to make ...convenient)
- c. *yǐ.zhì*: so that/with the result that (*zhì*: to cause)
- d. *yǐ.miǎn*: lest (*miǎn*: to exempt)

*Yǐ* as a conjunction word is used in the formal register and not in colloquial speech. (2) is an example of *yǐ* introducing a purpose clause.

- (2) *Fùshàng biāoqiān, yǐ shì qūbié.*<sup>2</sup>  
 attach label to indicate difference  
 'Attach the labels to indicate the differences.'

Moreover, the clause introduced by *yǐ* cannot have an overt subject. (3) is unacceptable with an overt subject in the *yǐ* clause.

- (3) *Zhèngfǔ yīnggāi fāzhǎn gōnggòng jiāotōng,*  
 government should develop public transportation  
*yǐ (\*chéngshì) jiǎnshǎo yōngdǔ.*  
 to city reduce traffic.jam  
 'The government should develop public transportation to  
 reduce traffic jam.'

In contrast, the conjunction in the form of *yǐ*+V as in (1)b-d can introduce a clause with an overt subject. Accordingly, (3) becomes acceptable when *yǐ* is replaced with *yǐ.biàn*. Such adverbial clauses can express either purpose, rationale as in (4)a and (4)b, or result (4)c, depending on the meaning of the verb combined with *yǐ*. That is, semantically the *yǐ*+V clauses are close to the purpose, rationale or result clauses in English (Faraci 1974; Whelpton 1995). In all the examples with *yǐ*+V, there can be a pause before the *yǐ* clause, indicated by the comma in the examples.

<sup>2</sup> The abbreviations used in the glosses are as follows: CL: classifier; DE: the "modification" or "association" marker between a noun (phrase) and a pre-nominal modifier; EXP: experiential aspect; PERF: perfective aspect marker; SFP: Sentence Final Particle; BA: *bǎ* in *bǎ* construction.

- (4) a. Lǎoshī bǎ huàndēngpiàn fàngdà, yǐbiàn  
 teacher Bǎ slide zoom so.that  
 [<sub>CP</sub> tóngxué-men dōu néng kàn qīngchǔ].<sup>3</sup>  
 student-PL all can see clear  
 ‘The teacher zoomed the slides so that the students could all see clearly.’
- b. Qǐng bǎ huàndēngpiàn fàngdà yīdiǎnr, yǐmiǎn  
 please Bǎ slide zoom a.little lest  
 [<sub>CP</sub> hòumiàn de tóngxué kàn bú qīngchǔ].  
 back DE student see not clear  
 ‘Please zoom the slides lest the students in the back can’t see clearly.’
- c. Huàndēngpiàn zìtǐ tài xiǎo, yǐzhì  
 slide font too small with.the.result.that  
 [<sub>CP</sub> hòumiàn de tóngxué kàn bú qīngchǔ].  
 back DE student see not clear  
 ‘The font of the slides is so small that the students in the back can’t see clearly.’

A difference between *yǐ.biàn* ‘so.that’ and *yǐ.zhì/yǐ.miǎn* ‘so.that/lest’ is that the former requires the *yǐ.biàn* clause to be followed by an activity predicate; but such a constraint does not exist with *yǐ.zhì/yǐ.miǎn* clauses. This constraint stems from their meaning difference, as shown by the paraphrases in English in (5).

- (5) a. *yǐ.biàn*: so as to make (someone doing something) convenient
- b. *yǐ.zhì*: so as to reach the result of...
- c. *yǐ.miǎn*: so as to avoid...

Except for the semantic differences, they behave alike syntactically. Therefore, we will present examples with *yǐ.biàn*, and not list all of them. Moreover, we will conveniently refer to the *yǐ*+V constructions as *yǐ*+V purposives, with the understanding that purposives only describe *yǐ.biàn* clauses more accurately.

<sup>3</sup> Because functional projections relevant to clause sizes in our study are DiscourseP, ForceP, IP, PredP, and vP. Until the exact clausal size of the complement of *yǐ*+V is determined, we use CP as a place-holding label.

Another type of clauses that obligatorily follows the main predicate is the purpose clause that is introduced either by *lái* ‘to’ (6)a, or is simply a VP without *lái* as in (6)b (referred to as the bare purposive for convenience). In regard to word order, *lái* is positioned between two verb phrases. In both bare and *lái* purposives, the first verb phrase is the means or manner to achieve the purpose expressed by the second verb phrase. There is no pause before or after *lái*. Generally, the meaning of the sentence is not affected by the absence of *lái*.<sup>4</sup>

- (6) a. Nǐmen yīnggāi jìn yīqiè lìliàng [*lái* wánchéng jìhuà].  
       you.PL should try all effort to finish plan  
       ‘You should try all the effort to finish the plan.’
- b. Wǒmen kāi gè liánhuānhuì [huānyíng xīn tóngxué].  
       we hold CL party welcome new student  
       ‘Let’s hold a party to welcome the new students’

## 2.1 Differences between *yǐ*+V and *lái* clauses

In this section we discuss the differences between purpose clauses introduced by *yǐ*+V and those by *lái*. The *lái* purposive and the closely related bare purposive (the omission of *lái*) will be treated as one group because they show the same properties according to the syntactic tests. The tests converge on the observation that *lái* and bare purposives should be in a position c-commanded by the object of the main clause; a *yǐ*+V clause is higher than the negation of the main clause in general, but we find that for some speakers, it can be lower in the sentence structure like *lái* clauses. In the examples, we use ‘(*lái*)’ to show that both *lái* and bare purposives are acceptable. With further evidence illustrated in section 3, we analyze *lái* and bare purposives as complement of the verb of the main clause.<sup>5</sup>

### 2.1.1 Presence/absence of an overt subject

An overt subject is not possible in a *lái* clause but can occur in the *yǐ*+V construction. In (7)a, because an overt subject appears in the

<sup>4</sup> But see Xiaokun Lu (2006) and Quansheng Zhang (2011), among others, for the argument on the focus use of *lái*.

<sup>5</sup> Liao and Lin (to appear) discuss the properties of bare and *lái* purposes and argue that bare purposives are adjuncts, in contrast to *lái* purposives as V-complements. We will discuss the challenges facing their proposal in section 3.

purpose clause (bracketed), *lái* or bare purposives are unacceptable, while the *yǐ.biàn* ‘so that’ clause is acceptable.

- (7) Zhāng xiānshēng mǎi-le chē yǐbiàn / \*lái  
 Zhang mister buy-PERF car so.that to  
 [tā tàitai sòng xiǎohái shàng xué].  
 his wife take kid go school  
 ‘Mr. Zhang bought a car so that his wife can take the kid to school’

### 2.1.2 Scope of negation

The scope interaction between *yǐ.biàn* clauses and negation is complicated. Schematically, the sentence can be represented as below.

- (8) Subj<sub>1</sub> NEG VP<sub>1</sub>, *yǐ.biàn* (subj<sub>2</sub>) VP<sub>2</sub>

When there is a pause at the position of the comma in (8), it is most natural to interpret the event expressed by the *yǐ.biàn* clause as the purpose of Subj<sub>1</sub>, not realizing the event expressed by VP<sub>1</sub>. That is, the *yǐ.biàn* clause is outside the scope of negation. Example (9) is from Paul 2016 (her example (40)), crediting the observation to Qiu Yiqin).

- (9) [<sub>Subj1</sub> Zhào Guó] méi yǒu [<sub>VP1</sub> shōumǎi Qí Guó], yǐbiàn  
 Zhao state not have bribe Qi state so.that  
 [<sub>VP2</sub> dǎ Lǚ Guó].  
 attack Lu state  
*yǐbiàn* > negation: ‘In order to attack Lu, Zhao did not bribe Qi.’

Paul (2016) also notes that when there is no pause at the comma position, it is possible to have the reading according to which the *yǐ.biàn* clause is lower than the main verb and its object (conveniently referred to as VP<sub>1</sub>; see (8)). When negation scopes over [VP<sub>1</sub> + *yǐbiàn* VP<sub>2</sub>], the negation can be associated with the entire [VP<sub>1</sub> + *yǐbiàn* VP<sub>2</sub>], as in (10), or a part within [VP<sub>1</sub> + *yǐbiàn* VP<sub>2</sub>]. This reflects the general properties of the association with focus. The different readings can be distinguished by intonation. To obtain the reading in (10), our observation is that stress is on the negation *méi.yǒu* ‘have not’, but ‘VP<sub>1</sub> + *yǐbiàn* VP<sub>2</sub>’ does not receive any stress. No pause can exist between the main object and *yǐ.biàn*.

- (10) Zhào Guó méi yǒu  $[[_{VP_1}$  shōumǎi Qí Guó]  $yǐbiàn$   
 Zhao state not have bribe Qi state so.that  
 $[_{VP_2}$  dǎ Lǚ Guó]]].  
 attack Lu state  
 negation >  $[VP_1 + yǐbiàn]$  ‘It is not the case that the Zhao  
 bribed Qi in order to attack Lu.’ (Zhao didn’t intend to attack  
 Lu).<sup>6</sup>

In contrast, the *lái* purpose clause must take narrow scope with respect to the negation in the main predicate. That is, in contrast to the *yǐ+V* series, which allows scope ambiguity as illustrated in (9) and (10), the *lái* purposive only has the reading of negation taking wide scope:

- (11) Zhào Guó méi yǒu shōumǎi Qí Guó  $[lái$  dǎ Lǚ Guó].  
 Zhao state not have bribe Qi state to attack Lu state  
 negation >  $[VP_1 + lái]$   
 i. ‘It is not the case that the Zhao bribed  
 Qi to attack Lu.’ (Zhao didn’t intend to attack Lu)  
 \**lái* > negation  
 ii. \*‘In order to attack Lu, Zhao did not bribe Qi.’

### 2.1.3 Bound variable reading

For a *lái* purposive, a quantificational object in the main clause can bind a pronoun in the *lái* clause: in (12a), the pronoun *tā* ‘he’ in the *lái* clause can be bound by the object *rèn hé yuángōng* ‘any employee’. This bound variable reading test shows that a *lái* clause is c-commanded by the object in the main clause. For *yǐ+V* clauses, when they scope over negation, the bound variable reading is impossible. For those who accept examples with *yǐ.biàn* clauses taking scope within negation as in (10), they also find it possible to have binding from the object position into the *yǐ.biàn* clause. The example in (12b) illustrates binding of the object in the *yǐ.biàn* clause by the object.

<sup>6</sup>According to our consultations with native speakers, not everyone can accept this reading; however, this reading is still possible for some native speakers.

- (12) a. Gōngsī bú huì [jiǎnglì *rèn hé yuángōng*<sub>i</sub>  
 company not will award any employee  
 [lái bāng *tā*<sub>i</sub>-de hái zǐ fù xué fèi]].  
 to help his child pay tuition  
 ‘The company will not award any employee to help to pay  
 for his child’s tuition.’
- b. Gōngsī bú huì [jiǎnglì *rèn hé yuángōng*<sub>i</sub>  
 company not will award any employee  
 [yǐ biàn bāng *tā*<sub>i</sub>-de hái zǐ fù xué fèi]].  
 so.as.to help his child pay tuition  
 ‘The company will not award any employee so as to help to  
 pay for his child’s tuition.’

This shows that *yǐ.biàn* purpose clauses can be ambiguous structurally (for the speakers that accept (13b) and (10)): i.e., they can be lower in the sentence structure like *lái* clauses or higher than the negation of the main clause. The examples below further illustrate the similarity between *lái* and *yǐ.biàn* clauses in the possibility of binding into the purpose clause by the indirect object of the main clause:

- (13) a. Gōngsī dǎsuàn [gěi shéi<sub>i</sub> xīn shǒujī  
 company plan give who new cell.phone  
 [lái ràng *tā*<sub>i</sub> tóng kè hù lián luò]]?  
 to let him with clients contact  
 ‘Who(x), the company plans to give x a new cell phone to  
 let him contact clients?’
- b. Gōngsī dǎsuàn [gěi shéi<sub>i</sub> xīn shǒujī  
 company plan give who new cell.phone  
 [yǐ biàn *tā*<sub>i</sub> tóng kè hù lián luò]]?  
 so.as.to him with clients contact  
 ‘Who(x), the company plans to give x a new cell phone so  
 that he can contact clients?’

#### 2.1.4 Object fronting

Object fronting is possible in the purpose clause introduced by *yǐ+V* as in (14a). In contrast, *lái* is always followed by a verb. As in (14b), object fronting is not allowed.

- (14) a. Lǎoshī bǎ huàndēngpiàn fàngdà, yǐbiàn  
 teacher BĀ slide zoom so.that  
 [túpian<sub>i</sub> tóngxué-men dōu néng kàn qīngchǔ t<sub>i</sub>].  
 picture student -PL all can see clear  
 ‘The teacher zoomed the slideshow so that, the pictures, the  
 students can all see clearly.’
- b. \*Nǐmen yīnggāi jìn yīqiè lìliàng  
 you.PL should try all effort  
 [lái zhè-ge jìhuà<sub>i</sub> wánchéng t<sub>i</sub>]  
 to this-CL plan finish  
 ‘You should try all the effort to finish the plan.’

## 2.2 Clause size and attachment height

The empirical observations are summarized in (15) and (16), which show that *yǐ*+V and *lái* purposives need to be distinguished.

### (15) *lái* purposives

- a. are within the scope of the main clause negation;
- b. are within the c-command domain of the object of the main verb, and
- c. disallow an overt subject or object fronting; i.e., *lái* must be followed by a verb.

### (16) *yǐ*+V purposives

- a. can but need not be c-commanded by the main clause negation and the main object, and
- b. allow overt subjects and object fronting.

Accordingly, *yǐ*+V expressions must be able to take a higher position than *lái* purposives. In addition, due to the fact that *lái* must be followed by a verb (15c), but not the *yǐ*+V series, the question that arises is whether they differ in the size of projections. The answer depends on how *yǐ*+V expressions are to be analyzed. Recall that *yǐ* alone must be followed by a verb as in (1)a, and the *yǐ*+V series contain a V themselves. In this sense, the *yǐ* in *yǐ*+V expressions seems



to be equivalent to *lái* in what follows them. That is, *yǐ*+V expressions are on a par with *lái* plus the following verb. This predicts that, for *lái* purposives, it should also be possible to allow an overt subject and object fronting in the clausal complement to the verb following *lái*. This is true, as shown in (17), which contains the verb *quèbǎo* ‘ensure’ taking a clausal complement.

- (17) Lǎoshī bǎ huàndēngpiàn fàngdà, *lái quèbǎo* [túpian<sub>i</sub>,  
teacher BÀ slide zoom to ensure picture  
tóngxué-men dōu néng kàn qīngchǔ t<sub>i</sub>].  
student -PL all can see clear  
‘The teacher zoomed the slides to ensure that, the pictures, the  
students can all see clearly.’

In addition, the *yǐ* in (2), which is used in the formal register, is replaced by *lái* when expressed colloquially in (18).<sup>7</sup>

- (18) Fùshàng biāoqiān, *lái* biǎoshì qūbié.  
attach label to indicate difference  
‘Attach the labels to indicate the differences.’

Even though both *lái* and *yǐ* are followed by a verb, the two are not identical. As summarized in (15), *lái* must be in the scope of the matrix negation when there is one. However, *yǐ* can take scope either inside or outside the main clause negation, in both modern written Chinese and old Chinese.<sup>8</sup> We illustrate the two possibilities with the following examples of old Chinese. In (19), we gloss the underlined sentences with the *yǐ* structure. The *yǐ* phrase (19a) is inside the scope of the negation, and it is outside the scope of negation in (19b).

- (19) a. 子产于是乎知礼<sup>o</sup>礼, 无毁人以自成也<sup>o</sup> (左传·昭公十二年)  
Lǐ, wú [huǐ rén [yǐ zì chéng]] yě  
ethics not destroy people to self succeed SFP  
‘Ethics are not to take down others in order to make oneself  
successful.’

(*Zuǒzhuàn*; late 4th century BC)

<sup>7</sup> *Yǐ* as a purposive conjunction ‘in order to’ has been attested since the seventh century BC (see Djamouri 2009).

<sup>8</sup> Old Chinese remnants in Modern Chinese are often used in the formal register.

- b. 君将以亲易怨,实无礼以速寇,而未有其备°(左传·昭公五年)

Shí [wú lǐ] [yǐ sù kòu].

indeed not ethics to accelerate enemy

‘Violate all propriety to accelerate the approach of the enemy’.

(*Zuǒzhàn*; late 4th century BC)

Wang (2009) shows that the expression *yǐ.biàn* in the period before the Western Han Dynasty (206 BC–AD 24) consisted of the conjunction word *yǐ* followed by the verb *biàn* ‘make convenient’. The complement of *biàn* was generally a noun phrase. After the Ming Dynasty (AD 1368–1644), *yǐ.biàn* rarely took a noun phrase as complement, which can be taken as evidence that *yǐ.biàn* has grammaticalized to become a conjunction. The meaning of *biàn* ‘make convenient’ is no longer obligatorily present in the current conjunction use of *yǐ.biàn*. Adopting Wang’s account of the grammaticalization process, we can claim that the *yǐ*+V series have been lexicalized as conjunction words. This is supported by the fact that *yǐ* and the V cannot be separated by anything, but *lái* can be separated from the V by an adverb:

- (20) tā yào rènzhēn gōngzuò lái hǎohaode zhàogù jiāting.

he will diligently work to well care family

‘He will work diligently to care for his family well.’

The non-separability of *yǐ* and V shows that *yǐ*+V expressions have been grammaticalized into lexical items. They take a larger projection than a verb phrase as their complement—a projection that allows an overt subject and object fronting. We will return to the structure and derivation of the *yǐ*+V series, in comparison with *hǎo* purposives in section 5, because the structural analysis for bare and *lái* purposives in section 3 will be relevant to the discussion there.

### 3. Properties of *lái* purposives and bare purposives

In this section we focus on the properties of bare and *lái* purposives.<sup>9</sup> We will argue that they both behave like complements of the main predicate structurally, *contra* Liao & Lin’s (to appear) proposal

<sup>9</sup> Both bare and *lái* purposives are among the so-called *serial verb constructions* (cf. Li & Thompson 1973; Paul 2008, among many others). As pointed out in Paul (2008), the serial verb construction is a cover term for different constructions. We take the examples in the literature where the VP2 in VP1–VP2 construction expresses

that the *lái* purposive is a non-finite CP complement of the main predicate while the bare purposive is a V'-level CP adjunct. Section 3.1 illustrates the similarities of the two constructions, section 3.2 points out the problems of Liao & Lin's analysis, and section 3.3 addresses the key empirical argument from Liao & Lin and proposes a more accurate generalization.

### 3.1 Similarities of *lái* purposives and bare purposives

We have seen in section 2 that *lái* purposives have the three properties in (21a-c). To these, we add one more property in (21d).

- (21) a. The subject of the purposive must be empty.  
 b. The negation in the main clause has scope over the purposive.  
 c. The object of the main verb can bind a noun phrase in the purposive.  
 d. The purposive can contain a *wh*-adjunct.

In all the relevant examples, *lái* can be missing, making the construction a bare purposive. That is, the examples in (11), (12a), (13a), and (14b) can all have *lái* deleted and the acceptability judgment remains the same. These cases demonstrate the similarities between *lái* and bare purposives with respect to (21a-c). (21d) can be illustrated by the minimal pairs in (22) and (23), which show the acceptability with an adjunct *wh* inside the purposives with or without *lái*. That is, (22a) is as acceptable as (22b); and (23a) is as acceptable as (23b). The native speakers we consulted with do not quite agree on the acceptability of these sentences, depending on how easy or how natural it is to ask about the purpose of some activity in a certain manner under the circumstances described by the sentences. However, importantly, they do not find contrasts between *lái* and bare purposives.

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the purpose of VP1 as bare purposive; the presence of *lái* is acceptable, as in (i):

- (i) wǒmen kāi huì (*lái*) tāolùn nèi-gè wèntí.  
 we hold meeting discuss that-CL problem  
 'We'll hold a meeting to discuss that problem.'

(based on Paul 2008, example (12))

- (22) a. Zhāngsān mǎi shū [lái zěnyàng qǔyuè Lǐsì]?  
 Zhangsan buy book to how please Lisi  
 ‘How (x) Zhangsan bought books to please Lisi x?’
- b. Zhāngsān mǎi shū [zěnyàng qǔyuè Lǐsì]?  
 Zhangsan buy book how please Lisi  
 ‘How (x) Zhangsan bought books to please Lisi x?’
- (23) a. Zhāngsān mǎi nà-běn xiǎoshuō [lái zěnyàng dú]?  
 Zhangsan buy that-CL novel to how read  
 ‘How (x) Zhangsan bought that novel to read x?’
- b. Zhāngsān mǎi nà -běn xiǎoshuō [zěnyàng dú]?  
 Zhangsan buy that- CL novel how read  
 ‘How (x) Zhangsan bought that novel to read x’

It is reasonable to conclude that purposive clauses with *lái* (*lái* purposive) and those without *lái* (bare purposives) have identical behavior.

### 3.2 The adjunction analysis for the bare purposive and its problems

Liao and Lin suggest that *lai* purposives and bare purposives are different, based on the following observation: *lái* and bare purposives differ in the possibility of making acceptable *bǎ* sentences. (24a) shows that a bare verb is not acceptable as the predicate in the *bǎ* construction. (24b) shows that *lái* purposives, not bare purposives, make the *bǎ* construction possible, because, according to Liao & Lin’s analysis, the *lai* purposive is a secondary predicate and takes the complement position of the main verb, and thus it provides a telic bound to the predicate of the *bǎ* construction. In contrast, bare purposives do not have such a function as in (24c) and (24d) cited from Liao & Lin (to appear). Therefore, a bare purposive is analyzed as an adjunct CP left adjoined to V’.

- (24) a. \*Zhāngsān bǎ nà-běn shū mǎi.  
 Zhangsan BA that-CL book buy  
 ‘(Intended) Zhangsan bought that book.’

- b. Zhāngsān bǎ nà-běn shū mǎi [lái dú].  
 Zhangsan BA that-CL book buy to read  
 'Zhangsan bought that book to read.'
- c. Zhāngsān bǎ nà -běn shū mǎi-le ??(lái) dú.  
 Zhangsan BA that-CL book buy-PERF to read  
 'Zhangsan bought that novel to read.'
- d. Zhāngsān bǎ nà -zhī gǒu língyǎng \*(lái) fàngshēng.  
 Zhangsan BA that-CL dog adopt to release  
 'Zhangsan adopted the dog to release to the wild.'

Liao and Lin further claim that the bare purposive must be left-adjoined to V' so that a bare purposive precedes a *lái* purposive when they co-occur.<sup>10</sup>

- (25) a. Zhāngsān mǎi-le yì -běn xiǎoshuō [dú] [lái quyue Lǐsì].  
 Zhangsan buy-PERF one-CL novel read to please Lisi  
 'Zhangsan bought a novel to read so as to please Lisi.'
- b. \*Zhāngsān mǎi-le yì -běn xiǎoshuō [lái quyue Lǐsì] [dú].  
 Zhangsan buy-PERF one-CL novel to please Lisi read

However, analyzing a bare purposive as a V'-left-adjoined CP adjunct raises the following questions. First, in order to derive the fact that the object of the verb must precede the bare purposive and the bare purposive must occur postverbally, Liao and Lin have to stipulate that the object of the verb, regardless of its definiteness, must be raised to the Spec of VP or base-generated there, and that the verb must be moved to a higher projection despite the fact that the verb does not take any complement as its sister. There is no discussion on the rationale that such movement requires. In addition, even though the bare purposive is proposed to be left-adjoined to V', it is never possible to linearize a bare purposive preverbally, which goes against the fact that an adjunct in Chinese typically occurs in

<sup>10</sup> We only find (25a) marginally acceptable with a pause after *dú* 'read'. Its acceptability is questionable because a pause is usually not possible before or after *lai* as we noted in section 2.

the preverbal position.

In section 4.2 of Liao and Lin, they briefly discuss a potential counterexample; purposives containing a *gěi* ‘for, to’ phrase like the ones in (26) are possible in a *bǎ* construction. They claim that the *gěi* phrase is not an adjunct bare purposive but complement of the verb *mǎi* ‘buy’, like the *lái* purposive. More specifically, they claim that the word *gěi* is a grammaticalized verb, and only “regular non-grammaticalized verbs” are allowed in the bare purposive construction. Liao and Lin do not discuss why this restriction exists.

- (26) Zhāngsān bǎ nà -gè hànǎo mǎi [*gěi tā chī*].  
 Zhangsan BA that- CL hamburger buy give.to him eat  
 ‘Zhangsan bought that hamburger for him to eat.’

Liao and Lin’s argument for the distinction between the bare and *lái* purposives is built on their acceptance in *bǎ* sentences—only the latter is acceptable. They claim that complements of verbs, not adjuncts, can help make good *bǎ* sentences. However, a *bǎ* sentence can be made acceptable with the help of a preverbal adjunct, which contradicts the rationale for Liao and Lin’s claim that bare purposives are adjuncts because they do not help make good *bǎ* sentences. Li (2006, 2017) reviewed the relevant literature and listed the examples in (27a-f) showing that preverbal adjuncts (underlined) can also make good *bǎ* sentences.

- (27) a. Bié bǎ qiú luàn-rēng.  
 don’t BA ball disorderly-throw  
 ‘Don’t throw balls around.’  
 b. Qǐng bǎ zhuōzi wǎng tā nàbiānr tuī.  
 please BA table towards him there push  
 ‘Please push the table towards him.’  
 c. Bǎ tā hǎo.hao-de zhàogù, tā jiù huì zhǎng-de-hǎo.  
 BA it good -DE care it then will grow -DE-well  
 ‘Take good care of it and it will grow well.’  
 d. Nǐ bù bǎ wèntí zìxì-de yánjiū,  
 you not BA problem carefully study  
 zěn hui zhǎo-chū dá’àn?  
 how will find -out answer  
 ‘If you don’t study the problem carefully, how can you find

an answer?’

- e. Tā bǎ jiǔ bù-tíng-de hē. (Chao 1968: 348)  
 he BA wine not-stop-DE drink  
 ‘He drank without stop.’

- f. Wǒ bǎ tā yī tuī, tā jiù dǎo-le.  
 I BA he one push it then fall-PERF  
 ‘He fell as soon as I pushed him.’

Therefore, it is doubtful that unacceptable *bǎ* sentences can be used to argue for the adjunct status of the bare purposive or for the need to distinguish *lái* and bare purposives.

### 3.3 A more accurate generalization with bare purposive

That bare purposives do not make good *bǎ* sentences cannot be because they fail to provide a telic bound to the predicate of a *bǎ* construction, as claimed by Liao and Lin, but because the main verb is not followed by an overt object. In *bǎ* constructions, the object of the main verb is to its left preceded by *bǎ*, as schematized in (28b). The object can be dislocated from its canonical postverbal position in (28a) by other means such as topicalization, relativization, or the object can simply be null (argument ellipsis). It is important to point out that a bare purposive is not acceptable in all these cases, as schematized in (28c-f).

(28) The schematic contrast:

- a. ok: S V O [bare purposive]  
 b. \*: S *bǎ* O V [bare purposive] (*bǎ* construction)  
 c. \*: O<sub>i</sub>, S V t<sub>i</sub> [bare purposive] (external topicalization)  
 d. \*: S O<sub>i</sub> V t<sub>i</sub> [bare purposive] (internal topicalization)  
 e. \*: [S V t<sub>i</sub> [bare purposive]] -de O<sub>i</sub> (relativization)  
 f. \*: S V *e* [bare purposive] (argument ellipsis)

The examples instantiating (28c-f) are given below, all of which require *lái* to be present. The blank represents the original position

of the object in each example.

(29) External topicalization, (28c)

- a. Nà-běn xiǎoshuō, Zhāngsān mǎi \_\_\_\_ \*(lái) dú.  
     that-CL novel      Zhangsan buy                      read  
     ‘That novel, Zhangsan bought (to) read.’

Internal topicalization, (28d)

- b. Zhāngsān nà-běn xiǎoshuō mǎi \_\_\_\_ \*(lái) dú.  
     Zhangsan that-CL novel      buy                      read  
     ‘Zhangsan, that novel, bought (to) read.’

Relativization, (28e)

- c. Zhāngsān mǎi \_\_\_\_ \*(lái) dú    de nà-běn xiǎoshuō  
     Zhangsan buy                      read    DE that-CL novel  
     ‘the novel that Zhangsan bought (to) read.’

Argument ellipsis, (28f)

- d. Zhāngsān xiǎng mǎi yì-běn shū    sòng rén;  
     Zhangsan want buy one-CL book    give people  
     Lǐsì xiǎng mǎi \_\_\_\_ \*(lái) dú  
     Lisi want buy                      read  
     ‘Zhangsan wants to buy a book to give to people; Lisi wants  
     to buy (a book) (to) read.’

All the examples above show that the unacceptability with an empty object is not specific to the *bǎ* construction. We propose a more accurate generalization below:

- (30) The object of the main verb needs to be overt in the construction with a bare purposive.

The generalization in (30) leads to the prediction that a *bǎ* sentence can be acceptable if the main object is overt in a structure with a bare purposive. This prediction is born out, as demonstrated by the acceptability of (31).

- (31) Nǐ yīnggāi bǎ miànbāo [qiē piàn [chī]].  
     you should BA bread      cut slice eat  
     ‘You should cut bread into slices to eat.’



To conclude, bare purposives and *lái* purposives have identical properties, except that the object of the main clause in the sentence containing a bare purposive must be overt. The exception will be shown to be accommodated by a more general constraint applying to control structures as well.

#### 4. Analyses of *lái* and bare purposives

We propose that a bare purposive and a *lái* purposive are identical structurally in their relation to the main verb—both are complements to the verb. What distinguishes the two is the presence vs. absence of a projection containing *lái*, which can be taken as a verb or as the highest functional head of a predicate projection (voiceP, Kratzer 1995; or PredP, Bowers 1993). To determine the appropriate structures for *lái* and bare purposives, let us compare them with closely related infinitival complements to control verbs. Below we discuss the properties of control complements and the purposives.

##### 4.1 Two types of control complement: *vP* and *IP*

In Huang (2017), infinitival complements are distinguished by two types: *IP* complement and *vP* complement. A *vP* complement occurs with verbs like *kāishǐ* ‘begin’, *jìxù* ‘continue’, *tíngzhǐ* ‘stop’, and *chángshì* ‘try’. It has the following six properties.

*i.* The subject must be a PRO, due to the lack of a Case licenser.

- (32) Zhāngsān jìxù [PRO/\*tā diàochá zhè-ge ànjàn]  
       Zhangsan continue he investigate this case  
       ‘Zhangsan continued to investigate this case.’

*ii.* The lowering of the experiential marker *-guò* is possible, as demonstrated by the interpretation of the example in (33); even though *-guò* follows the embedded verb, the main verb also has the experiential aspect interpretation.

- (33) Zhāngsān chángshì [chī-guò nà -zhǒng shuǐguǒ].  
       Zhangsan tried eat-EXP that-kind fruit

‘Zhangsan has tried eating that kind of fruits.’

iii. Topicalization in the control clause is not allowed; topicalization to the matrix clause is possible.

- (34) a. Zhāngsān nà-zhǒng shuǐguǒ<sub>i</sub> chángshì [chī-guò t<sub>i</sub>].  
 Zhangsan that-kind fruit tried eat-EXP  
 ‘Zhangsan has tried eating that kind of fruits.’  
 (topicalization to the matrix clause)

- b. \*Zhāngsān chángshì [nà -zhǒng shuǐguǒ<sub>i</sub> chī-guò t<sub>i</sub>].  
 Zhangsan tried that-kind fruits eat-EXP  
 (topicalization in the control clause)

iv. The preposing of *lián* ‘even’ phrases is not possible in the control clause, either.

- (35) a. Zhāngsān lián nà-ge ànjiàn<sub>i</sub> dōu [tíngzhǐ diàochá -le t<sub>i</sub>].  
 Zhangsan even that-CL case all stop investigate-PERF  
 ‘Zhangsan has even stopped the investigation.’

- b. \*Zhāngsān tíngzhǐ [lián nà-ge ànjiàn<sub>i</sub> dōu diàochá -le t<sub>i</sub>].  
 Zhangsan stop even that-CL case all investigate-PERF

v. Embedded tense is not available.

- (36) \*Zhāngsān jìxù [PRO míngtiān diàochá zhè-ge ànjiàn]  
 Zhangsan continue tomorrow investigate this case  
 ‘Zhangsan continued to investigate this case tomorrow.’

vi. Embedded modals are not possible, either.

- (37) Tāmen kāishǐ (\*yào/huì) [diàochá zhè-ge ànjiàn].  
 they begin will investigate this case  
 ‘They begin to investigate this case.’

For those with an IP projection<sup>11</sup> (for control verbs like *zhǔnbèi* ‘prepare’, *dǎsuàn* ‘plan’), according to Huang, they differ from the

<sup>11</sup> Or more precisely, a WollP: as quoted in Huang (2017), Wurmbrand (2014) proposes that such predicates C-select an IP that contains future modality but no tense — A WollP (an IP without T, hence no Case assigner for the embedded subject).

vP type in allowing an independent embedded future tense and an internal modal *yào* ‘will’, internal topicalization, and *lián* ‘even’ preposing, but disallowing the lowering of the experiential marker *guò*.<sup>12</sup>

- (38) Independent embedded future:

Zhāngsān zhǔnbèi [míngtiān chū.guó].

Zhangsan prepare tomorrow go.abroad

‘Zhangsan prepared to go abroad to tomorrow.’

- (39) Allow internal modal *yào* ‘will’:

Zhāngsān jìhuà [yào chū.guó xuéxí].

Zhangsan plan will go.abroad study

‘Zhangsan plans to go abroad for study.’

- (40) No Experiential Lowering:

\*?Zhāngsān jìhuà [xuǎn-guò nà-mén kè].

Zhangsan plan [elect-EXP that-CL course]

Intended: ‘Zhangsan has planned to elect that course.’

- (41) Topicalization in the control clause:

Zhāngsān jìhuà [nà-mén kè míngnián zài xuǎn].

Zhangsan plan [that-CL course next-year then elect]

‘Zhangsan plans [that course, to elect next year]’

- (42) *lián*-preposing in the control clause:

Zhāngsān dǎsuàn [lián zhè-mén kè dōu bù xuǎn]

Zhangsan plan [even this-CL course all not elect]

‘Zhangsan plans [even this course, not to elect].’

## 4.2 Bare and *lái* purposives as vP control complements

Importantly, bare and *lái* purposives behave like Huang’s vP type complements to control verbs, not the IP type. First of all, the aspect marker *guò* in such purposives can be related to the matrix verb (also see Li 1985, 1990 for such behavior of *guò*):

<sup>12</sup> Huang notes that the properties listed basically all follow from their clause sizes quite straightforwardly. However, he states the following qualifications: there is considerable variation among some members of his type II (IP (WOLLP) type), depending on the verbs and speakers.

- (43) a. Wǒ méi yǒu mǎi hànǎo [(lái) chī-guò].  
 I not have buy hamburger to eat-EXP  
 ‘I have never bought hamburgers (to) eat, (because I don’t like hamburgers).’
- b. Wǒ méi yǒu mǎi shū [(lái) qǔyuè-guò rènhé péngyǒu].  
 I not have buy book to please-EXP any friend  
 ‘I have never bought books (to) please any friends.’

Embedded modals are not possible before or after *lái*, or without *lái*.

- (44) a. \*Wǒ mǎi hànǎo [(lái) yào/huì (lái) chī].  
 I buy hamburger to will to eat
- b. \*Wǒ mǎi shū (lái) huì/yào [(lái) qǔyuè péngyǒu].  
 I buy book to will to please friend

Topicalization is only possible to the matrix clause, not in the purposive clause.

- (45) a. Wǒmen zhè-ge jìhuà<sub>i</sub> huì jìn yīqiè lìliàng [(lái) wánchéng *t<sub>i</sub>*].  
 we this-CL plan will try all effort to finish  
 ‘We, the plan, will try all the effort (to) finish.’
- b. \*Wǒmen huì jìn yīqiè lìliàng (lái) zhè-ge jìhuà<sub>i</sub> [(lái) wánchéng *t<sub>i</sub>*].  
 we will try all effort to this-CL plan to finish
- (46) a. Zhāngsān zhè-ge yǐzi<sub>i</sub> huì mǎi yī-běn shū [(lái) diàn-gāo *t<sub>i</sub>*].  
 Zhangsan this-CL chair will buy one-CL book to pad-high  
 ‘Zhangsan will buy a book to pad this chair high.’
- b. \*Zhāngsān huì mǎi yī-běn shū [(lái) zhè-ge yǐzi<sub>i</sub> (lái) diàn-gāo *t<sub>i</sub>*].  
 Zhangsan will buy one-CL book to this-CL chair to pad-high

The same is true with the preposed *lián* object.

- (47) a. Wǒmen lián zhè-ge jìhuà<sub>i</sub> dōu huì jìn  
 we even this-CL plan all will try  
 yīqiè lìliàng [(lái) wánchéng *t<sub>i</sub>*].  
 all effort to finish

‘We will try all efforts to finish even this project.’

- b. \*Wǒmen huì jìn yīqiè lìliàng [(lái) lián zhè-ge jìhuà<sub>i</sub>  
 we will try all effort to even this-CL plan  
 (lái) dōu wánchéng  $t_i$ ].  
 to all finish

- (48) a. Zhāngsān lián zhè-ge yǐzi dōu huì mǎi yī-běn shū  
 Zhangsan even this-CL chair all will buy one-CL book  
 (lái) diàn-gāo.

to pad -high

‘Zhangsan will buy a book to pad high even this chair.’

- b. \*Zhāngsān huì mǎi yī-běn shū (lái) lián zhè-ge yǐzi  
 Zhangsan will buy one-CL book to even this- CL chair  
 (lái) dōu diàn-gāo.  
 to all pad -high

In addition, both *lái* and bare purposives can contain a *bǎ*-phrase (49a) (with *bǎ* occupying the position of *v* or a higher *bǎ* projection dominating *vP*; cf. Sybesma 1999, Li 2006) and they allow predicate modifiers such as manner, temporal and locative expressions (49b).

- (49) a. Wǒ yào mǎi-ge hànǎo  
 I want buy-CL hamburger  
 (lái) bǎ tā zài yì xiǎoshí nèi chī.diào .  
 to BA it at one hour in eat.finish

‘I want to buy a hamburger to eat (it) up in an hour.’

- b. Wǒ yào mǎi-ge hànǎo  
 I want buy-CL hamburger  
 (lái) zài jiā -lǐ màn.man-de chī.  
 to at home-in slowly eat

‘I want to buy a hamburger to eat slowly at home.’

However, higher adverbials are not possible as in (50). This is similar to the impossibility of auxiliaries and modals as mentioned in (44).

- (50) \*Wǒ mǎi hànǎo (lái) *yě / cáì / ou’er* chī.  
 I buy hamburger also/then/occasionally eat

\*‘I want to buy a hamburger to *also/then/occasionally* eat.’

All in all, the facts above indicate that bare and *lái* purposives are like *vP* complements to control verbs. It is then expected that a negative polarity item is licensed by a matrix negation in such cases, because they are c-commanded by the higher negation.

- (51) Wǒ bù / méi.yǒu yào mǎi-ge hànǎo  
 I not/not .have want buy-CL hamburger  
 [(*lái*) zài shénme/rènhe dìfang/shíjiān chī].  
 to at what/any place/time eat  
 ‘I do/did not want to buy a hamburger to eat anywhere/at any time.’

Moreover, control structures share with bare and *lái* purposives the properties regarding the (un)acceptability of an empty object following the main verb. (52) is a control example with the optional occurrence of *lái*. When the object of the control verb is A- or A'-moved as in (53), the appearance of *lái* is obligatory to make the sentence acceptable, just as *lái* is needed for purposives.

- (52) Wǒ bī/quàn Zhāngsān (*lái*) bāng wǒ máng.  
 I force/persuade Zhangsan to help me busy  
 ‘I forced/persuaded Zhangsan to help me.’

- (53) a. Internal or external topicalization of the matrix object  
 (Zhāngsān<sub>i</sub>) wǒ (Zhāngsān<sub>i</sub>) bī/quàn t<sub>i</sub>  
 Zhangsan I Zhangsan force/persuade  
 \*(*lái*) bāng wǒ máng.  
 to help me busy  
 ‘(Zhangsan<sub>i</sub>) I, (Zhangsan<sub>i</sub>) forced/persuaded (him<sub>i</sub>) to help me.’

- b. Relativization of the matrix object  
 [Wǒ bī/quàn t<sub>i</sub>  
 I force/persuade  
 \*(*lái*) bāng wǒ máng] de nà-ge rén<sub>i</sub>  
 help me busy DE that-CL person  
 ‘the person that I forced/persuaded (him<sub>i</sub>) to help me’

## c. Passivization of the matrix object

Zhāngsān<sub>i</sub> bèi wǒ bī/quàn t<sub>i</sub>  
 Zhangsan PASS me force/persuade  
 \*(lái) bāng wǒ máng.  
 to help me busy  
 'Zhangsan was forced/persuaded by me to help me.'

d. Matrix object as the *bǎ* object

Wǒ bǎ Zhāngsān<sub>i</sub> bī/quàn t<sub>i</sub>  
 I BA Zhangsan force/persuade  
 \*(lái) bāng wǒ máng.  
 to help me busy  
 'I forced/persuaded Zhangsan to help me'

In addition, as expected, the absence of an overt object requires *lái*:

(53) e. Matrix object as the *bǎ* object

Wǒ bī/quàn t<sub>i</sub> \*(lái) bāng wǒ máng.  
 I force/persuade to help me busy  
 'I forced/persuaded (Zhangsan<sub>i</sub>) to help me'

Based on the comparison above, we claim that the structures of bare and *lái* purposives are similar to those for *vP* control structures. We now turn to the structures of these purposives.

4.3 Structures of bare and *lái* purposives

Just like control complements, bare and *lái* purposives are first merged with the verb. Then, the projection of the verb of the main clause and the purposive merge with the object of the main clause, allowing the object to c-command a noun phrase in the purposive. The verb has to move to the higher VP shell in order to assign Case to its object.

(54) [<sub>VP</sub> ... V [<sub>VP</sub> DP [ V [<sub>αP</sub> *lái*/Bare Purposive]]]]

The question is what *αP* is in (54). Because only verb phrases and modifiers to verb phrases can appear in bare purposives and because they behave like *vP* complements to control verbs, we claim that the

projection of bare purposives are *v*P<sub>s</sub>. Regarding the *lái* purposive, *lái* was originated as a full verb, ‘come’. It has become grammaticalized and possibly taken up the position of a higher head projection, such as the higher head of the layers of verbal projections—a Predicate projection for instance (see, for instance, Bowers 1993). Crucially, it does not go as high up as an IP so that its properties can be captured: behaving like a bare purposive and a *v*P control complement and unlike an IP control complement as described in section 4.1 and 4.2. Therefore, we propose the  $\alpha$ P to be a *v*P for the bare purposive and a PredP for the *lái* purposive. The structures capture all the properties listed in (21) and the similarities with control *v*P complements.

Nonetheless, two questions remain: why must the main object position be occupied by a lexical item; and why must a bare purposive precede a *lái* purposive when both occur, as in (25a). For the first question, the fact that even a null object, or an A- or A'-trace does not help indicates that this is an issue of spell out, i.e., lexicalization of the relevant nodes. Tang (2002) proposes that *lái* is needed to break apart two adjacent verbs. This can be a good direction to pursue. Note that the following two sentences clearly contrast in acceptability. The one with *wǎnshàng* ‘evening’ appearing between the two verbs seems to be much more acceptable:

- (55) a. \*Hàn**bǎo**<sub>i</sub>, wǒ xiǎng mǎi t<sub>i</sub> chī.  
           hamburger I want buy eat  
           ‘Hamburgers, I want to buy (to) eat.’
- b. Hàn**bǎo**<sub>i</sub>, wǒ xiǎng mǎi t<sub>i</sub> wǎnshàng chī.  
           hamburger I want buy evening eat  
           ‘Hamburgers, I want to buy (to) eat in the evening.’

For the second question—a bare purposive required to precede a *lái* purposive—we speculate that the one without morphological markings (absence of *lái*) needs to be closer to the head as compared to another that has morphological markings (presence of *lái*). However, we leave this issue for further research.



## 5. Structures of *yǐ*+V and *hǎo* purposives

### 5.1 The size of *yǐ*+V

The empirical observations with *yǐ*+V made in section 2.2 are repeated below.

(56) Clauses introduced by *yǐ*+V

- a. can but need not be c-commanded by the main clause negation and the main object, and
- b. allow overt subjects and argument fronting.

Compared with bare or *lái* purposives, *yǐ*+V purposives take a larger structure in order to allow an overt subject and argument fronting. This means that the projection should be larger than a *vP* or a *PredP*. The remaining options are *IP* and *ForceP*. The latter can be ruled out because no information at the level of *ForceP* is possible in the *yǐ*+V clause. For instance, the *yes-no* question marker *ma* must take the entire sentence within its scope, not just the *yǐ*+V clause, as illustrated in (57).

- (57) Gōngsī méi yǒu zhème zuò [*yǐbiàn* liú.zhù Lǐsì] ma?  
 company not have so do so.that make.stay Lisi yes-no  
 ‘Is it the case that the company did not do this so as to keep Lisi?’

Other sentence final particles behave alike. If they occur in the final position, they must be related to the entire clause, not just to the *yǐ*+V clause or the main clause. Therefore, a *yǐ*+V clause is an *IP*. When it is c-commanded by the matrix negation and object, its external syntax, i.e., the attachment site, is essentially the same as *lái* purposives.

We will focus on the structure that places the *yǐ*+V clause outside the scope of negation. Note that when a *yǐ*+V clause is outside the scope of negation, it should still be lower than the subject of the main clause, because when its subject is null, the null subject must be coindexed with the subject in the main clause. For instance, the null subject (*pro*) in the *yǐ.miǎn* clause in (58) is controlled by the main subject *nǐ* ‘you’, leading to semantic abnormality and syntactic

violation of Binding Principle B.

- (58) Nǐ yīnggāi zǒu màn yīdiǎnr  
 you should walk slow a.bit  
 [yǐmiǎn \*pro<sub>i</sub> / wǒmen) gǎn -bú -shàng nǐ].  
 lest we catch-not-up you  
 ‘You should walk a bit slower, lest we could not catch up with you.’

It seems that a straightforward analysis would be for the *yǐ*+V clause to be an IP adjoined to a projection between the subject and negation in the main clause. More evidence for this structure is available by comparisons with the *hǎo* ‘good’ purposive (cf. Liao & Lin, to appear).

## 5.2 Comparison with the *hǎo* purposive

When *hǎo* ‘good’ occurs in purposives, it is paraphrased as “be in order to; (so that one) can” (Lü *et al*, 1980: 258). Liao and Lin, in their studies of *hǎo* purposives, bare, and *lái* purposives, propose that (i) a *hǎo* purposive is a CP forming a conjunction structure with the preceding clause, and (ii) the morpheme *hǎo* is located in the (higher) Mood Evaluative Phrase in the Split CP structure as proposed by Cinque (1999). Their claim is built on the observation that the subject argument of the *hǎo* clause, unlike the *lái* purposive, can be lexically realized. If it is lexically realized, the subject precedes *hǎo* when it is a definite/specific DP, as in (59b); when the subject is non-specific indefinite, it follows *hǎo*, as in (59c) ((59a-c) below are Liao and Lin’s (19a-c)):

- (59) a. Zhāngsān<sub>i</sub> mǎi-le yì-běn xiǎoshuō [e<sub>i</sub>]  
 Zhangsan buy-PERF one-CL novel  
 hǎo qǔyuè Lìsì. (null subject)  
 HAO please Lisi  
 ‘Zhangsan bought a novel so as to please Lisi.’  
 b. Zhāngsān bān-kāi zhuōzi, Lìsì  
 Zhangsan move-away table Lisi  
 hǎo tuō dìbǎn. (definite DP subject)  
 HAO mop floor  
 ‘Zhangsan moves the table away, so that Lisi can mop the floor.’

- c. Zhāngsān bān-kāi      zhuōzi,  
 Zhangsan move-away table  
 hǎo yǒu -ge-rén      tuō dìbǎn. (indefinite DP subject)  
 HAO some-CL-person mop floor

In addition, an overt conjunctive adverb *ránhòu* can appear before the *hǎo* clause (Liao and Lin, example (26b)).

- (60) Zhāngsān kǎn shù, ránhòu hǎo gài fángzi  
 Zhangsan chop tree then HAO build house  
 ‘Zhangsan chopped the trees, so that he could build a house.’

A null subject of the *hǎo* clause does not need to refer to the subject argument of the pre-*hǎo* clause; it can refer to a salient nominal in the context or assume a generic reference, as in Liao and Lin’s (24a), repeated below.

- (61) Hú jiébīng le, (wǒmen) hǎo liū bīng  
 lake freeze SFP we HAO skate ice  
 ‘The lake is frozen, so that [we] can skate.’

Other related properties are that the *hǎo* clause can occur independently, not related to the main clause, and that it is outside the scope of negation.

If we compare the *yǐ*+V purposive with the *hǎo* purposive, several differences should be noted. First, unlike the possibility of an overt conjunctive adverb *ránhòu* appearing before the *hǎo* clause, this is not possible with the *yǐ*+V purposive:

- (62) Zhāngsān kǎn shù, (\*ránhòu) yǐbiàn gài fángzi  
 Zhangsan chop tree then so.as.to build house  
 ‘Zhangsan chopped trees, so that he could build houses.’

Secondly, a null subject in a *yǐ*+V purposive must be coindexed with the main subject. Replacing *hǎo* in (61) with a null subject in the rationale clause by *yǐ.biàn* results in unacceptability:

- (63) \*Hú jiébīng le, e yǐbiàn liū bīng  
 lake freeze SFP so.as.to skate ice

‘\*The lake is frozen, so as to skate.’

Thirdly, a sentence-final particle has scope over only the *hǎo* clause. In (64) the content of the preceding clause is presupposed and not in the scope of the *yes-no* question.

- (64) [Zhāngsān bān -kāi -le zhuōzi],  
 Zhangsan move-away-PERF table  
 [Lǐsì hǎo tuō dìbǎn ma]?  
 Lisi HAO mop floor yes-no  
 ‘Zhangsan moves the table away. So, can Lisi mop the floor?’

These differences suggest that a *yǐ*+V purposive is not a separate CP, forming a conjunction structure with another CP, like a *hǎo* purposive.

Still another logical option is to pursue conjunction structures further: what are conjoined are two verb phrases or predicate phrases instead of two CPs, illustrated by the bracketing in the following example (from (62)):

- (65) Zhāngsān [[kǎn shù] [yǐbiàn gài fángzi]].  
 Zhangsan chop tree so.as.to build house  
 ‘Zhangsan chopped trees to build houses.’

However, this option can be ruled out by the fact that the first verb phrase behaves like the main verb phrase, and the *yǐbiàn* phrase, like an adjunct. For instance, an A-not-A question is possible with the former, but not the latter:

- (66) a. Zhāngsān kǎn -bu -kǎn shù yǐbiàn gài fángzi?  
 Zhangsan chop-not-chop tree so.as.to build house  
 ‘Will Zhangsan chop trees to build houses?’  
 b. \*Zhāngsān kǎn shù yǐbiàn gài -bu -gài fángzi?  
 Zhangsan chop tree so.as.to build-not-build house

An aspect marker is possible with the first verb, but not with the verb following *yǐbiàn*:

- (67) a. Zhāngsān kǎn-le shù yǐbiàn gài fángzi.  
 Zhangsan chop-Perf. tree so.as.to build house

‘Zhangsan chopped trees to build houses.’

- b. \*Zhāngsān kǎn shù yǐbiàn gài -le fángzi.  
 Zhangsan chop tree so.as.to build-Perf. house

Topicalization of the object is possible from after the first verb, not from after the *yǐ.biàn* verb:

- (68) a. Shù, Zhāngsān kǎn-le yǐbiàn gài fángzi.  
 tree Zhangsan chop-PERF so.as.to build house  
 ‘Zhangsan chopped trees to build houses.’

- b. \*Fángzi, Zhāngsān kǎn-le shù yǐbiàn gài.  
 house Zhangsan chop-PERF tree so.as.to build

Therefore, together with the properties shown in (57–58) and those in section 2.1, we conclude that a *yǐ+V* purposive can be right-adjoined to a position lower than the main subject but higher than negation.

## 6. Summary

Part 3 has focused on the properties of adverbial clauses that obligatorily follow the main clause or predicate. Clauses in such positions express the meaning of purpose, rationale, or result. One group is the series introduced by *yǐ+V*. The other group contains the purposive introduced by *lái* ‘to come’ and the bare purposive (i.e., without *lái*). Our claim is that *lái* and bare purposives in general behave alike syntactically. They are identical except that the object following the verb of the main clause needs not be overt in the *lái* purposive but must be overt in the bare purposive. This contrast is not specific to bare and *lái* purposives but also holds for control structures; when a control verb has no overt object, *lái* must occur. Furthermore, based on their similar behavior as the *vP* control structure, we propose that *lái* and bare purposives are complements to the main verb in the same way a *vP* complement is sister to a control verb selecting a *vP*.

The *yǐ+V* clauses can be in the scope of negation, like bare and *lái* clauses. They also have the option of occupying a higher position—above the predicate of the main clause but c-commanded by the subject. They can have scope over the main clause negation.

However, they are not bound by the main object, but must be bound by the main subject when the subject of the *yǐ*+V clause is an empty pronoun. We suggest that right-adjunction is a straightforward analysis that captures all the properties of this construction. The proposed structure is further supported by the comparison between *yǐ*+V clauses and *hǎo* purposives.

One might propose an alternative that complies with the LCA and that subsequent movement operations take place to derive the correct word order. That is, one might suggest that the *yǐ*+V clause is generated in the preverbal position and some movement operations apply to re-arrange the word order (cf. the sentence-final adverbial clauses in Part 2). However, the movement to generate sentence-final adverbial clauses in Part 2 is motivated by the markedness asymmetry. The base-generated structure is unmarked, while the one derived by movement is marked, triggered by an emphasis feature. In the case with *yǐ*+V purposives, the supposed left-adjunction base-structure is never linearized as such. Therefore, we will not pursue this alternative for lack of support and propose instead a right-adjunction structure for this construction. We are aware that the right adjunction analysis proposed for *yǐ*+V clauses is not compatible with the LCA, which was adopted in Part 2 of our study. This is a tension that requires further study.<sup>13</sup>

<sup>13</sup> We refer to Whelpton (2000) on the comparison of four different analyses to English Telic infinitival 'only to', where the conclusion is that the right-adjunction analysis accommodates the properties of this structure without alternating the standard assumptions about movement and extended projections.

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