

The syntax of complex sentences in Mandarin Chinese: A comprehensive overview and analyses

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1. Introduction

The aim of this article is to offer a comprehensive overview of complex sentences in Mandarin Chinese and to provide a formal account of their syntax and semantics. We will use the dichotomy ‘adverbial clause vs main clause’ in order to refer to the component parts of a complex sentence. This is artificial insofar as the complex sentence *qua* matrix clause in fact subsumes the adverbial clause as one of its constituents, as is evident when replacing the adverbial clause in e.g. *If he doesn’t come, I’ll go there on my own* by a simple adverbial NP such as *tomorrow*: [_{Matrix Cl} *Tomorrow, I’ll go there on my own.*]. But this terminological distinction allows us to refer to each clausal domain separately and to divide complex sentences into different subtypes according to the relative order of its component clauses: (i) ‘adverbial clause - main clause’, (ii) ‘main clause - adverbial clause’, (iii) ‘matrix subject - adverbial clause - main predicate’, i.e. the case where the adverbial clause appears below the matrix subject and above the matrix predicate.

As mentioned in the introduction to this special issue, an adverbial clause - like a nominal projection - can be optionally followed by a so-called “pause particle” (cf. Chao 1968: 81-82; 118). Gasde & Paul (1996) analyzed these pause particles as realizing the head of the functional projection Topic Phrase, hosting the topic XP in its specifier, resulting in the following structural configuration:

- (1) [_{TopP} [_{DP} Zhè gè rén] [_{Top'} [_{Top°} ne]
this CL person TOP
[_{TP} tā kěn bāngzhù rén]]]
3SG be.willing help people
‘This person, he is willing to help others.’
- (2) [_{TopP} [_{cond.cl.} Rúguǒ tā bù lái] [_{Top'} [_{Top°} ne]
if 3SG NEG come TOP
[_{TP} wǒ jiù zìjǐ qù]]]
1SG then self go
‘If he doesn’t come, then I’ll go on my own.’

However, an alternative analysis is possible, given the homophony between pause particles and sentence-final particles (SFPs). Since the latter are analyzed as complementizers in a head-final CP (cf. Paul 2014, Pan 2015a, 2017a, Pan & Paul 2016, Paul & Pan 2017), it is likewise feasible to parse *ne* in (1) and (2) as a complementizer, and the sentence-initial constituent as a CP:

- (1') [_{TopP} [_{CP} [_{DP} Zhè gè rén] [C ne]] [_{Top'} [_{Top°} Ø]
this CL person SFP
[_{TP} tā kěn bāngzhù rén]]]
3SG be.willing help people
‘This person, he is willing to help others.’

As to be demonstrated in detail, multiple parsings are available for each sequence, depending on the following factors: (i) presence/absence of a null subject; (ii) (non-) coindexation of the subjects in the adverbial and the main clause; and (iii) last - but not least - the still to be determined categorial status of conjunctions (complementizers vs adverbs). As far as we can see, the co-existence of these analytical possibilities has so far not been systematically pursued in the literature. Importantly, several parsings are shown to exist in parallel for the same surface string, irrespective of the categorial status adopted *in fine* for the conjunctions in the adverbial clause.

Section 5 examines the structure where the adverbial clause appears below the matrix subject: ‘Subject [[_{adv.cl}] [_{VP}]]’. Not all adverbial clause types are allowed in this position; while conditional and causal clauses as well as temporal adjuncts are acceptable here, this position is excluded for concessive and inferential clauses. In fact, looking beyond this article and incorporating results from Wei & Li (this volume, Part 1, sections 3.2 and 3.3), the acceptability *below* the matrix subject is one of the main criteria for identifying *central* adverbial clauses, as opposed to *peripheral* adverbial clauses (in the sense of Haegeman 2002). For matrix TP-internal adverbial clauses, we observe a further subdivision concerning their (un)acceptability in the position *below* auxiliaries. Causal and conditional clauses are allowed below auxiliaries, whereas the situation is more complex for the distribution of temporal adjuncts, which will turn out to depend on the categorial status (clause, DP, PP or PostP).

Section 6 addresses the categorial identity of the numerous items subsumed under the traditional label *conjunction*, both in the adverbial and the main clause. More precisely, we need to decide whether so-called conjunctions are heads (prepositions, postpositions, complementizers) or adverbs (cf. Chao 1968:790). Note that up to section 6 we will provisionally use the a-theoretical label *conjunction* for the items at the beginning of an adverbial clause with a “conjunctive” meaning, unless the precise categorial status of a given conjunction is necessary for the discussion of other issues at hand. Checking the acceptability of object extraction from adverbial clauses for the different parsing possibilities obtained in section 4, the island effects observed throughout lead us to an analysis of the conjunctions occurring in the different types of adverbial clauses as *heads*, i.e. complementizers and adpositions. By contrast, the conjunctions in the main clause are analyzed as adverbs.

Finally, the conclusion in section 7 discusses the results obtained in this article from the perspective of the overall syntax of Chinese.

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2.1. Topic analysis

As mentioned in the introduction to this special issue, Haiman (1978) established an explicit parallel between conditionals and topics. Naturally, this parallel is not compatible with the notion that the topic is “what the sentence is about” (cf. Li & Thompson 1976). Haiman (1978) therefore adopts Chafe’s (1976: 50-51) notion of topic as “frame”: “Typically, it would seem, the topic sets a spatial, temporal, or individual framework within which the main predication holds. [...] In brief, ‘real’ topics (in topic-prominent languages) are not so much ‘what the sentence is about’ as ‘the frame within which the sentence holds.’” Implementing this conception of topic as frame to conditionals, Haiman (1993: 926) states that “[...]the conditional protasis, like many other subordinate clauses of circumstance, define a framework or set the scene within which the following sentence was either valid or felicitous.”

Unlike Chafe (1976) himself, however, Haiman (1978, 1993) combines this with the idea that a topic is always given and that given information always precedes new information, thus “deriving” Greenberg’s (1963) universal 14 stating that the protasis almost invariably precedes the apodosis. (For a more interesting way of deriving this universal, cf. Whitman 2008.)

As pointed out by von Stechow (1994: chapter 3), Haiman’s scenario, predicting that conditionals are only found in sentence-initial position, is straightforwardly challenged by Givón’s (1982) claim that the position of an *if* clause depends on its discourse status: a conditional clause in sentence-initial position is a topic and carries background material (i.e. old information), whereas in sentence-final position a conditional clause is foregrounded and carries new information. Accordingly, (3c) is unfelicitous as answer to (3a), because the conditional clause *if you give me the money* providing the requested new information occupies a position reserved for the background material (repeated from the preceding question):

- (3) a. Under what conditions will you buy this house?
 b. A2: I’ll buy this house [=old info], if you give me the money [= new info].
 c. A1: # If you give me the money, I’ll buy this house.

Given data of the type illustrated in (3), von Stechow (1994: 82) rejects Haiman’s claim that conditionals are topics (hence always given information under Haiman’s view); instead conditionals can be topical (i.e. conveying given information) or focal (i.e. conveying new information), and it is this difference which determines their sentence-initial or sentence-final position.

While this positional dichotomy might in general hold for English,¹ it certainly cannot be applied to Chinese, where a conditional clause in topic position can provide the answer to a

¹ The positional dichotomy is much less clear for another example pair by Givón (1982):

- (i) a. What will you do if I give you the money?
 b. If you give me the money, I’ll buy this house.
 c. #I’ll buy this house if you give me the money.

As pointed out by von Stechow (1994: 81), the answer in (ic) becomes acceptable when the focus is on the VP (signaled by stress on the object *house*) and the *if*-clause is de-accented. By contrast, the answer in (3c) above cannot be improved by similar means, indicating the existence of constraints on the position available for new information.

preceding question, hence convey new information. This very fact also highlights the necessity of distinguishing between new information, on the one hand, and focus, on the other:

- (4) a. Nǐ huì [zài shénme tiáojiàn xià] qù měiguó?
 2SG will in what condition under go USA
 ‘Under what conditions will you go 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.’

Note that a sentence-final position for the conditional clause in (4b) is unfelicitous, in contrast to English (cf. the translation of (4b)).² Visibly, in Chinese a conditional clause occupies the topic position independently of whether it conveys new or given information).

In fact, as extensively argued for in Paul (2015, ch. 6), it is in general impossible to associate the topic position in Chinese with a particular informational value, irrespective of whether the topic is a DP or a clause. (Also cf. Roberts 2004, Grewendorf 2015 among others for the semantic openness of the German topic position with respect to new vs given information.) While we do not want to repeat the relevant discussion here, let us simply point out a probable source for the incorrect assumption that a constituent in topic position is necessarily “given”. As soon as the topic is posited, introduced, it must be shared by speaker and hearer, precisely because it serves as frame for the sentence. This is especially clear in the case of conditional clauses: they introduce a new, hypothetical content, which the hearer is invited and expected to accept, in order to establish the link with the consequent.³ It is this quasi-immediate acceptance by the hearer that is then misinterpreted as indicating the “given” nature of the topic.

Leaving this semantic issue aside, it is important to note that Haiman’s (1978) main argument for the equation of conditional clauses with topics is morphosyntactic, i.e. based on the presence of identical “markers” for both topics and conditionals in a variety of languages, where these “markers” in turn are identical with interrogative markers.

As stated by Haiman (1978: 587, footnote 16) himself, Chao (1968) made a similar claim for Chinese.⁴ More precisely, Chao (1968: 81-82) observes that the so-called “pause particles” *a*, *ne*, *me*, and *ba* (which were subsequently analyzed as realizing the head of Topic Phrase by Gasde & Paul 1996) are also found as sentence-final particles in questions.⁵ The sentences (5) - (8) are all examples from Chao (1968: 81-82) with his translation; by contrast, transliteration, glosses and bracketing are ours. Each pair gives an example where the particle

The idea that conditional can be topic can actually be backed up by the current pragmatic/semantic analyses. Claims similar to that by Haiman (1978) that the conditional clause can be viewed as a topic are subsequently made by Stalnaker (2002) and Bhatt & Pancheva (2006). According to Stalnaker (2002), possible worlds are also presupposed knowledge; Bhatt & Pancheva (2006) have suggested that condition are definite descriptions of “possible worlds,” namely, “In the world(s) where P is true/given, then Q.”

² This statement is somewhat too strong insofar as some speakers accept as answer the equivalent of the English translation with the conditional clause in a sentence-final position. However, the basic contrast between English and Chinese remains valid and is confirmed by Wei & Li (this volume, Part 2, section 2). The syntactic constraints and semantic properties of a conditional clause in sentence-final position are discussed in section 3.1.2 below.

³ Our view thus differs from Haiman (1978) for whom conditional clause topics are already shared by hearer and speaker and serve as presuppositions of the sentence.

⁴ Thanks to Thomas Hun-tak Lee for drawing our attention to this point.

⁵ Of the four SFPs mentioned by Chao (1968), only *ma* is endowed with interrogative force (cf. (7b)). The other SFPs do not possess any intrinsic interrogative force, but are simply compatible with questions. Note that Chao makes a distinction between the pause particle *me* and the *yes-no* question marker *ma*.

follows the topic (the (a)-cases) and an example where the particle occurs in sentence-final position (the (b) cases)

- (5) a. [_{TOPP} [Zhè ge rén]_i [_{TOP} [_{TOP°} a],
 this CL person TOP
 [_{TP} t_i yīdìng shì ge hǎo rén]]].
 certainly be CL good person
 ‘This man (as for), must be a good man.’
- b. [_{CP} [_{TP} Tā shì nǎr de rén] a]?
 3SG be where SUB person SFP
 ‘Where is he from?’
 [Literally: ‘He is a [from] where person?’]
- (6) a. Tā zìjǐ de xiǎoháir ne,
 3SG self SUB child TOP
 yě bù dà tīng tā de huà.
 also NEG much listen 3SG SUB word
 ‘His own children (if it is a question of), do not listen to him much, either.’
- b. Xiǎoháir dōu shàng nǎr qu-le ne ?
 child all go.up where go-PERF SFP
 ‘Where have all the children gone to then?’
- (7) a. Tā cí zhí de yìsi me, yǐjīng dǎxiāo-le.
 3SG dismiss job SUB idea TOP already cancel-PERF
 ‘His idea of resigning (as for), has already been canceled.’
- b. Nǐ zhīdào tā yào cí zhí le ma?
 2SG know 3SG want dismiss job SFP SFP
 ‘Do you know that he is going to resign?’
- (8) a. Zhàngfu ba, zhǎo -bù -zháo shì;
 husband TOP search-NEG-find matter
 háizimen ba, yòu bù kěn niàn shū.
 children TOP again NEG want study book
 ‘The husband (if you consider him), can’t find a job;
 the children (if you consider them), won’t study, either.’
- b. Wǒmen wèn wèn tā de zhàngfu ba.
 1PL ask ask 3SG SUB husband SFP
 ‘Shall we ask her husband?’

Even though Chao (1968: 81) describes the (a) sentences as cases where the “subject” is followed by pause particles, it is evident from his paraphrase given for the different particles (e.g. ‘as for’ for *a* and *me*, ‘if you consider’ for *ba* etc.) that the subject has been topicalized, hence occupies SpecTopP within a framework adopting Rizzi’s (1997) split CP, as illustrated for (5a) above. This is important for a correct comprehension of the parallel Chao (1968: 118) establishes later on between pause particles after conditional clauses and pause particles after

“subjects”, which is accordingly to be understood as a parallel between conditional clauses and *topics*:⁶

- (9) a. Yàoshì xià-qǐ yǔ lái a, nà jiù zāogāo le
 if fall-start rain come TOP that then bad.luck SFP
 ‘If it should start to rain, that would be a mess.’
- b. Yàoshì xià-qǐ yǔ lái ne, nà yě bù yàojǐn
 if fall-start rain come TOP that also NEG important
 ‘If it is (a question of) starting to rain, that won’t matter.’
- c. Yàoshì xià-qǐ yǔ lái me, ràng wǒ kàn zěnmē bàn
 if fall-start rain come TOP let 1SG see how do
 ‘If it starts to rain (hesitation), let me see what we shall do.’
- d. Yàoshì xiàqǐ yǔ lái ba, zánmen jiù zuò chē ba
 if fall-start rain come TOP 1PL then sit car SFP
 ‘If it is (the alternative of) starting to rain, we will take a car.’
 (Examples (9a-d) from Chao (1968: 118; his translations;
 our transliteration and glosses)

Accordingly, Chinese can be said to be on a par with the languages discussed by Haiman (1978, 1993) where topics and conditionals are morphosyntactically marked in the same way, and where these markers are the same as those used in questions.

As we will see in section 2.2 immediately below, it is precisely this homophony between particles analyzed as Topic heads and sentence-final particles (SFPs) analyzed as complementizers that gives rise to an alternative scenario for complex sentences.

2.2. Analyses of adjunction structures in generative grammar

Leaving the topic head scenario aside for a moment, this section discusses the alternative analysis alluded to above for complex sentences of the form ‘adverbial clause - main clause’. Analyzing the particles co-occurring with adverbial clauses as SFPs, i.e. as C-elements in a head-final CP, an adverbial clause (projecting up to CP in the presence of a SFP) is now seen as *adjoined* to the main clause TP.

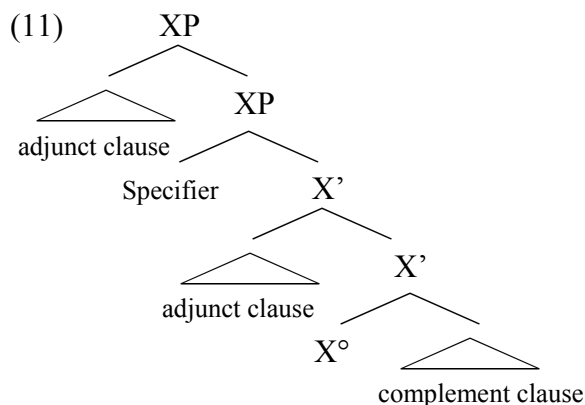
- (10) [main clause TP [adv.clause CP TP [C° SFP]] [main clause TP]]

Some general discussion of adjunction seems necessary before proceeding to a more detailed analysis.

2.2.1 A uniform analysis across categories and adjunction sites

Since Chomsky (1981), i.e. *Lectures on government and binding*, it is possible to make a distinction between several types of clauses. A complement clause occupies the same position as an “ordinary”, non-clausal complement. A clause modifying an NP, such as a relative clause, occupies the same position as an adjectival modifier. An adverbial clause, such as a causal, conditional or temporal clause, occupies the same syntactic position as an adverb. A complement clause is the sister of X°. Since modifiers are analyzed as adjuncts, an adverbial clause can be adjoined either to X’ or to the maximal projection XP, as illustrated in (11).

⁶ Chao (1968: 113) contrasts the possibility of a pause (indicated by particles) after conditional clauses and topicalized subjects with the impossibility of a pause between a verb and its clausal complement.



The general schema presented in (11) can be applied to different categories, such as NP/DP (cf. (12)) or v P/TP (cf. (13)). From this perspective, a relative clause modifying a nominal projection and an adverbial clause modifying a verbal projection occupy the same type of position, i.e. an adjunct position.

- (12) a. Complement clause of a noun
The $[N' [N^{\circ}$ rumor $[CP$ that Bill is going to study abroad]] is surprising.
- b. Restrictive relative clause: adjunct to N'
The $[N' [N^{\circ}$ rumor]] $[CP$ that I heard] is surprising.
- c. Appositive relative clause: adjunct to NP
 $[NP [NP$ The rumor], $[CP$ which has nothing to do with me anyway]], is surprising.
- (13) a. Complement clause of a verb
I $[v' [v^{\circ}$ heard $[CP$ that Bill is going to study abroad]]].
- b. Adverbial clause as adjunct to V' ⁷
He intends to $[v' [v^{\circ}$ leave home]] $[CP$ when I arrive]].
- c. Adverbial clause as adjunct to TP
 $[TP [CP$ When I arrived at home], $[TP$ my mom was cooking]].

This uniform analysis of different types of adjunct clauses (modifying either nominal or verbal projections) can be maintained even under *Bare Phrase Structure* in the Minimalist Program (cf. Chomsky 1993, 1995 and subsequent works), given that an XP can have several specifiers or adjuncts. This general schema can be directly applied to Chinese.

- (14) Complement clause of a verb:
Wǒ $[v' [v^{\circ}$ zhīdào] $[CP$ Zhāngsān yào qù Fǎguó niàn shū]].
1SG know Zhangsan will go France study book
'I know that Zhangsan will go to study in France.'

- (15) Adverbial clause as adjunct to V' or v'
a. Wǒ $[vP [CP$ yīnwèi *pro* shēng bìng le]

⁷ We abstract away here from the later introduction of v P.

1SG because produce illness SFP
 [v' qù-bù-liǎo xuéxiào].
 go-Neg-able school
 'I cannot go to school, because I am ill.'

b. Wǒ [vP [CP jiùsuàn dāi zài jiā lǐ]
 1SG even.if stay at home in
 [v' yě [v' bù [v' xiǎng qù tā jiā]]]].
 also not want go his home
 'I'd rather stay at home [though in general I don't like it] than go to his place.'

(16) Adverbial clause as adjunct to TP:

[TP [Jìshǐ Zhāngsān lái], [TP wǒ yě bù huì jiàn tā]].
 even.if Zhangsan come 1SG also not will meet 3SG
 'Even if Zhangsan comes, I will not meet him.'

In earlier versions of Generative Grammar, an adjoined position and a specifier position were clearly different: while adjunction was recursive and allowed for multiple adjoined positions, there was only one specifier position closing off the projection. By contrast, in the *Minimalist Program* since *Bare Phrase Structure*, adjunction must be achieved by *Merge* as well. When XP is merged with YP, Bare Phrase Structure does no longer allow to see whether XP should be analyzed as a specifier or as an adjunct, due to the bottom-to-top fashion of building the structure. This also leads to a labeling problem for the pair {XP,YP}.⁸ Furthermore, in contrast to X-bar theory, multiple specifiers associated with a single head are possible under Bare Phrase Structure, which at least on the surface resembles multiple adjunction and in this respect certainly does not make it easier to distinguish an adjoined position from a specifier position. We do not intend to elaborate on this complex issue here.

2.2.2. Particles: Topic heads or SFPs?

In the previous section, we started out by analyzing adverbial clauses as sentential topics, which on a par with nominal topics occupy SpecTopP whose head is optionally realized by the so-called “pause particles”, analyzed as topic heads. We also pointed out that Chao (1968) had already put forward the formal parallel between these “pause particles” and SFPs used in different types of questions.

Based on the analysis of SFPs as complementizers in a three-layered head-final split CP: Clow < ForceP < AttP (cf. Paul 2014, Pan 2015a, Pan & Paul 2016, Paul & Pan 2017), an adverbial clause followed by a particle can therefore in principle also be assumed to represent a CP. Importantly, under this “SFP-scenario”, the particle *qua* C takes the adverbial clause TP to its left as its complement and hence forms a constituent with it. This sharply contrasts with the “topic head scenario” where the particle *qua* Top° selects the main clause TP (or another TopP) to its right as complement.

Since these two analytic possibilities, due to the homophony of Top° and C, will constitute the backdrop for the remainder of the article, we briefly discuss the *pro*'s and *con*'s for each scenario.

⁸ Kayne (1994) treats specifiers as adjoined for spell out purposes. Chomsky (2000) has proposed a different kind of merge for adjunctions, i.e. *pair merge* instead of *set merge*. Adjunction as unprobed merge and the resulting problem for labeling are new problems arising within the MP (cf. Chametzky 2008, Cecchetto & Donati 2015, Ginsburg 2016 among others).

Within the topic head scenario, it might be difficult to explain why the presence of particles is never obligatory in topic structures. This contrasts with the topic head in languages such as Japanese where its co-occurrence with a topic phrase is always required.⁹ The simple fact that particles like *ne* or *ba* are compatible with topic phrases does not necessarily endow them with the nature of topic heads. Nearly the entire range of SFPs, i.e. *a*, *ne*, *ba*, *ma*, *eh*, *beh* etc., can follow a topic phrase. Under the Topic analysis, topic head and SFPs qua Cs are viewed as homophones; however, under the adjunct analysis, there are only SFPs which can select different XPs as complements, crucially including non-clausal projections such as topic DPs (cf. (17) below).

- (17) [TopP[AttP [DP Zhè běn shū]_i [Att° {ne / a / ba / ma}]],
 this Cl book SFP
 [Top° [Top° ∅] [TP t_i xiě de hái bùcuò]].
 write DE still not.bad
 ‘As for this book, it is well written.’

In the SFP scenario represented in (17), the particles *a*, *ba* and *ma* in e.g. are analyzed as SFPs occupying the head position of the highest projection in the three-layered splitCP, i.e. AttitudeP. This AttP takes a DP complement; accordingly, it is the AttP that functions as topic, not the DP. The entire sentence itself is a TopicP whose head is *not* realized.

When a topic phrase is followed by a particle, an additional semantic effect associated with that particle is observed, resulting in a slightly different interpretation of the topic depending on the particle at hand (cf. the translation of (5a) - (8a) above where Chao (1968) spells out the discourse effect of the different topic markers). Under the SFP scenario, this semantic effect can be straightforwardly captured by the fact that the SFPs *qua* C select the preceding phrase as complement; as a result, SFPs do not “mark” an XP as topic, but provide this XP with additional semantics. Note, though, that the semantic effect induced by the presence of a particle can in principle also be accounted for within the topic head scenario; the particle *qua* Top° is likewise endowed with the feature(s) giving rise to the particular semantics observed for each individual particle, thus contributing to the interpretation of the XP in its specifier (i.e. SpecTopP.).

As observed by Wei & Li (this volume), Part 1, section 3.2.3), there is a tonal difference between the topic head *ne* and the SFP *ne*. However, this contrast might also result from prosodic rules holding for a Chinese sentence in general, the more so as SFPs do not possess intrinsic tones.

Finally, for a sub-group of speakers, these particles are compatible with an *ex-situ* focus clefted XP as in (18) (cf. Pan 2017a);

- (18) [FocP [AttP [TP Shì Zhāngsān de tàidù] {ne/ba/a/beh/la}],
 be Zhangsan SUB attitude SFP
 [Foc° [Foc° ∅] [TP lǎobǎn hěn bù xǐhuān]].
 boss very Neg like
 ‘It is Zhangsan’s attitude that the boss does not like.’

These cases cannot be analyzed within the topic head scenario, given that a topic head cannot select a focused XP as its complement. By contrast, within the SFP scenario, the particles realize the head of AttP and take the TP *shi Zhangsan de taidu* ‘be Zhangsan’s attitude’ as complement. The AttP as a whole is located in the specifier position of FocP.

⁹ Note, though, that the topic head *wa* is optional in spoken Japanese.

2.3. Comparison between Topic analysis and Adjunct analysis

An analysis of the particle (here *ne*) as head-final C (cf. (19a)) or as head of TopP (cf. (19b)) has far-reaching consequences for the overall structure of the complex sentence as a whole, as shown in the comparison between (19a) and (19b) below:

- (19) a. [TP_{main cl.} [AttP. [TP Rúguǒ tā bù lái] [Att° ne]]
 if 3SG NEG come SFP
 [TP_{main cl.} wǒ jiù zìjǐ qù]]
 1SG then self go
 ‘If he doesn’t come, then I’ll go on my own.’
- b. [TopP [cond.cl. Rúguǒ tā bù lái]
 if 3SG NEG come
 [Top° [Top° ne] [TP_{main cl.} wǒ jiù zìjǐ qù]]
 TOP 1SG then self go
 ‘If he doesn’t come, then I’ll go on my own.’

In the “topic head scenario” (19b), *ne* and the conditional clause do not form a constituent, given that *ne* as Topic° selects the main clause TP as complement. By contrast, in the “SFP scenario” (19a), the adverbial clause does form a constituent with SFP. More precisely, the conditional clause is analyzed as an AttP and occupies the adjunct position of the matrix TP.

The *rationale*, i.e. underlying motivation for the SFP scenario is to maintain the traditional conception of the topic as “what the sentence is about” and as exclusively conveying given information (cf. Li & Thompson 1976); this conception excludes topic status for XPs which do not imply a restrictive nominal set, such as clauses and manner adverbs.¹⁰ A natural implication of this analysis is that not all of the elements on the left of the subject are to be analyzed as topics. For instance, the same NP *míngtiān* ‘tomorrow’ is analyzed as an *aboutness* topic in (20a), but as a temporal adverb modifying the entire event ‘I will go to school’ in (20b) and hence adjoined to TP:

- (20) a. [TopP Míngtiān, [TP tiānqì búcuò]].
 tomorrow weather good
 ‘Tomorrow, the weather is not bad.’
- b. [TP Míngtiān, [TP wǒ yào qù xuéxiào]].
 tomorrow 1SG will go school
 ‘I will go to school tomorrow.’

If *míngtiān* ‘tomorrow’ in (20a) were an adverb modifying the sentence *tiānqì búcuò* ‘the weather is fine’, we would expect that *míngtiān* ‘tomorrow’ could also occur to the right of the subject, i.e. in the canonical adverb position. However, (21a) shows that this is not the case. By contrast, *míngtiān* ‘tomorrow’ in (20b) can also be present in a post-subject position, as shown in (21b), which confirms the adverbial status of *míngtiān* ‘tomorrow’ here.

- (21) a. ??[TP Tiānqì míngtiān búcuò]].
 whether tomorrow not.bad

¹⁰ Quantificational phrases except for non-specific indefinites, are thus acceptable as topics.

(‘The weather is not bad tomorrow.’)

- b. [TP Wǒ míngtiān yào qù xuéxiào].
 1SG tomorrow will go school
 ‘I will go to school tomorrow.’

(21a) is unacceptable under the parsing shown here with *míngtiān* ‘tomorrow’ as adverb adjoined to the verbal projection and with *tiānqì* as subject. However, when it is *míngtiān* that is understood as the subject of the predicate *bùcuò* ‘not bad’ and when accordingly *tiānqì* ‘weather’ is construed as topic (separated by a pause), then the sentence becomes acceptable.

There is, however, one potential problem for this SFP analysis. As pointed out by Pan (2015a), Attitude-related particles, conveying strong subjective opinion and judgement of the speaker, are confined to root contexts and therefore cannot appear in embedded clauses, i.e. in a domain where speaker/hearer-related dimensions such as subjectivity cannot be encoded:¹¹

- (22) [Zhāngsān zhǐ qù-guò Fǎguó
 Zhangsan only go-Exp France
 {*a/ *ba3/ *ne}] de shuōfǎ bù kěxìn.
 Attitude SUB claim NEG reliable
 ‘The claim that Zhangsan only went to France is not reliable.’
 (Pan 2015a: 856, (69b))

The contrast between (19a) and (22) suggests that the ban on SFPs realizing AttitudeP in non-root clauses only holds for properly embedded clauses, such as relative clauses, noun complement clauses and sentential subjects. The dichotomy root vs non-root does not seem to be applicable to adverbial clauses preceding the main clause, irrespective of whether this clause is analyzed as adjoined to the matrix clause or analyzed as a sentential topic. In both configurations, while the adverbial clause certainly cannot count as root clause, at the same time its high position with respect to the main clause makes its characterization as non-root implausible. The topic position as well as adjunction to the matrix clause seem to be of a third kind in addition to the root vs non-root asymmetry.

To summarize, for adverbial clauses in sentence-initial position, both the SFP analysis and the topic head analysis have their respective (dis)advantages. The data themselves do not always permit us to prefer one analysis over the other. In addition, the choice between the two analyses also depends on the conception of *topic* one wants to adhere to. As a consequence, in the remainder of the article, both options will be maintained as analytical possibilities.

3. Adverbial clauses preceding the main clause in their default order

This section presents the central part of the article. It examines in detail all the adverbial clauses whose default order is the sentence-initial position: conditionals (§3.1), causal clauses (§3.2), inferential clauses (§3.3), concessive clauses (§3.4) and temporal adjuncts (§3.5).

The term “default order” is important here because as is well-known, these five types of adverbials can also follow the main clause. However, a close examination of the associated

¹¹ Unlike Attitude and Force heads, low Cs such as *le* and *láizhe* are acceptable in embedded contexts:

- (i) [DP [C_{lowP} [TP Gāngcái dǎ diànhuà] láizhe]
 just strike phone LOWC
 de rén] dàodǐ shì shéi?
 SUB person in.fact be who
 ‘Who on earth is the person that called just now?’

semantic differences and syntactic constraints holding in the sentence-final position shows that this is not simply a “reversed” order, and that no derivational relationship exists between the two orders.

Adverbial clauses whose default order is the sentence-final position, i.e. purposive clauses (headed by *yìbiàn* ‘so that’) and resultative clauses (headed by *yǐzhì* ‘so that’) as well as purposive clauses headed by *wèile* ‘so that, for...to’, are not included here; they are extensively discussed in the study by Wei & Li (this volume, Part 1, section 2.1.2; Part 3).

For the adverbial clauses examined in section 3.1 through section 3.5, it is rather evident how to implement the two available analyses, i.e. the topic head scenario and the SFP scenario and we will not spell them out explicitly. By contrast, when presenting the more complicated cases with more than one adverbial clause in section 3.7, we will illustrate in detail both scenarios.

3.1 Conditionals

3.1.1. Different types of conditionals

3.1.1.1. Hypotheticals (counterfactuals and necessary conditions)

3.1.1.2. Relevance conditionals

3.1.1.3. Factual conditionals

3.1.2. Conditionals in sentence-final position

3.1.3. Bare conditionals

3.1.4. The analysis of conditionals in English

As in other languages, in Chinese as well conditionals can be subdivided into hypothetical, relevance and factual conditionals (cf. Bhatt & Pancheva 2006 for detailed discussion). The default position for all types of conditional clauses is the sentence-initial position, i.e. preceding the consequent (main) clause. When occurring in sentence-final position, the conditional clause has the effect of adding an explanation. After briefly evoking the existence of bare conditionals, we compare the result of our study of conditionals in Chinese with standard analyses proposed for conditionals in English.

3.1.1. Different types of conditionals

3.1.1.1. Hypotheticals (counterfactuals and necessary conditions)

Given that we have already seen examples of “ordinary” hypotheticals, below we provide examples with counterfactuals in order to illustrate hypotheticals, the more so as back in the eighties their very existence in Chinese was subject of a controversy, initiated by Bloom (1981). (For the background of this incorrect assumption, cf. Yong Qian 2016; also cf. Qiu Haiying 2000).¹² This is no longer the case today, as evidenced by recent studies, where the existence of counterfactuals in Chinese is taken for granted (cf. among others Lin Jo-wang (2016) and references therein).

- (23) Rúguǒ dàifu qiān-le zì,
 if doctor sign-PERF character
 Lǐsì kěndìng jiù yǐjīng chū yuàn le
 Lisi certainly then already go.out hospital SFP
 ‘If the doctor had signed, Lisi would certainly already have left the hospital.’
 (Slightly modified example from Lu Peng (2003: 278, (48))

¹² The doubts among general linguists concerning the existence of counterfactuals in Chinese contrasts with the fact that specialists of Chinese grammar such as Chao (1968: 116) and Lü Shuxiang 1942[1982] cite many counterfactuals among their examples of conditional clauses.

- (24) *Jíshǐ dàifu méi qiān zì* ,
 even.if doctor NEG sign character
Lǐsì zuótiān yě shì huì chū yuàn de
 Lisi yesterday also be will go.out hospital DE
 ‘Even if the doctor had not signed, Lisi would still have left the hospital yesterday.’
 (Slightly modified example from Lu Peng (2003: 276, (45))¹³
- (25) *Wǒ yào bù shì děng nǐ, jiù gǎnshàng tóu bān chē le.*¹⁴
 1SG if NEG be wait 2SG then catch first CL train SFP
 ‘If I hadn’t waited for you, I would have caught the first train.’
 (Qiu Haiying 2000: 102, 15a)
- (26) *Rúguǒ tāmen bù shì mǎi-le zhè běn shū,*
 if 3PL NEG be buy-PERF this CL book
wǒ jiù huì sòng-gěi tāmen yī běn (le)
 1SG then will give -GEI 3PL 1 CL SFP
 ‘If they hadn’t bought that book, I would have given them a copy (as present).’

¹³ Importantly, for a large majority of speakers, sentence (24) without *shì* and *de* is unacceptable:

- (ia) **Jíshǐ dàifu méi qiān zì* ,
 even.if doctor NEG sign character
Lǐsì zuótiān yě chū yuàn
 Lisi yesterday also go.out hospital

If no counterfactual meaning is intended, *jíshǐ* ‘even if’ or *jǐnguǎn* ‘even though’ are used and the SFP *le* is required (on its own or in combination with the perfective aspect suffix *-le*) (cf. Lu Peng 2003: 276-277):

- (ib) *Jíshǐ / jǐnguǎn dàifu méi qiān zì* ,
 even.if/ even.though doctor NEG sign character
Lǐsì zuótiān hái shì chū (-le) yuàn le
 Lisi yesterday still go.out-PERF hospital SFP
 ‘Even though the doctor did not sign, Lisi nevertheless left the hospital yesterday.’

In fact, the construction in (24) involves the so-called *propositional assertion* (*kěndìng yǔqì*) with *shì...de*, as discussed in Paul & Whitman (2008: 422-423). This construction is used to assert the speaker’s certainty that a proposition is true and relevant to the current discourse:

- (ii) *Tā shì yīdìng huì duì nǐ hǎo yī-bèizi de.*
 3SG be certainly will towards 2SG good 1-generation DE
 ‘(It is the case that) he will certainly be good to you for an entire lifetime.’
- (iii) *Wǒ běnlái shì yào míngtiān huí zhōngguó de*
 1SG originally be want tomorrow return China DE
kěshì hángkōnggōngsī bà gōng le.
 but airline.company cease work PART
 ‘Originally I had wanted to go back to China tomorrow, but the airline is on strike.’

De in (i) - (iii) above is analyzed as a *non-root C* heading the clausal complement of *shì*; accordingly, the propositional assertion pattern is syntactically and semantically different from the focus cleft with *shì...de*, as argued for in great detail by Paul & Whitman (2008).

For a study of counterfactuals involving the auxiliary *yīnggāi* ‘should’ and *de*, cf. Lin Jo-wang (2016) who endows *de* itself with the component of truth confirmation (*kěndìng quèrèn yǔqì*).

¹⁴ The question arises of how to analyze the sequence *yào bù shì* in (25), i.e. as the conjunction ‘if’ plus the negated copula or rather as a unit. Given that unlike *rúguǒ*, *yào* ‘if’ is confined to the position following the subject, there is no structure with *yào* parallel to the one in (26), where *rúguǒ* ‘if’ and *bù shì* are separated by the subject. Note that *yàoshì* ‘if’ is in general analyzed as a unit (cf. Lü Shuxiang 2000), not as *yào* + the copula *shì*; example (i) with the existential verb *yǒu* ‘exist, have’ seem to corroborate this view:

- (i) *Yàoshì yǒu rén wèn dehuà* , *shuō wǒ zài Lǎo Mǎ jiā*
 if exist person ask [-root]C say 1SG at Lao Ma home
 ‘If someone asks [for me], say that I am at Lao Ma’s.’

This brief discussion illustrates the rather basic, but non-trivial issues arising for the analysis of “conjunctions”, addressed in detail in section 6 below.

(Qiu Haiying 2000: 107: 21)

Besides counterfactuals, another noteworthy type are hypotheticals encoding a necessary condition, contrasting with the *if*-clauses provided so far indicating a sufficient condition. Lü Shuxiang (2000: 681) has the following minimal pair:

(27) Zhǐyào dǎ liǎng zhēn qīngméisù,
 as.long.as make 2 needle penicillin
 nǐ zhè bìng jiù néng hǎo
 2SG this illness then can cure
 ‘As long as you get two injections of penicillin, then this illness of yours can be cured.’

(28) Zhǐyǒu dǎ liǎng zhēn qīngméisù,
 only.if make 2 needle penicillin
 nǐ zhè bìng cái néng hǎo
 2SG this illness only.then can cure
 ‘Only if you get two injections of penicillin, then this illness of yours can be cured.’

As noted by Lü Shuxiang (2000: 681), (27) does not exclude other methods to work (cf. Eifring’s (1993: 356) describing *zhǐyào* ‘as long as’ as indicating a “pseudo-necessity”. *Zhǐyǒu* ‘only if’ in (28), however, encodes a necessary condition; accordingly, (28) states penicillin as the only medicine that will cure the illness. The difference in the type of condition encoded by *zhǐyào* ‘as long as’ vs *zhǐyǒu* ‘only if’ correlates with the use of the correlative adverb *jiù* ‘then’ vs *cái* ‘only then’ in the main clause. (For further discussion of these adverbs, cf. Paris 1985, Biq 1984, Ernst 2002, Hole 2004, among others). Note, though, that other adverbs besides *cái* are acceptable with necessary conditionals as well:

(29) *Zhǐyǒu* nǐ qù qǐng, yěxǔ tā hái néng lái.
 only.if 2SG go invite perhaps 3SG still can come
 ‘Only if you go and ask him, he perhaps can still come.’
 (Lü Shuxiang 2000: 681)

A necessary condition can also be expressed by *chúfēi* ‘only if’, with *cái* ‘only then’ or *fǒuzé* ‘otherwise’ in the main clause:

(30) *Chúfēi* nǐ qù, tā cái huì qù.
 only.if 2SG go 3SG only.then will go
 ‘He will only go, if you go.’

(31) *Chúfēi* xià yǔ, fǒuzé tā shàng bān
 only.if fall rain otherwise 3SG go work
 cónglái bù zuò chē.
 ever NEG sit bus
 ‘Unless it rains, he never takes the bus to go to work.’
 (Lü Shuxiang 2000: 125)

3.1.1.2. Relevance conditionals

In *relevance conditionals* (also called *conditional speech acts*) illustrated by *If you’re thirsty, there is beer in the fridge*, the antecedent clause clearly does not provide the circumstances under which the consequent clause is true; on the contrary, the truth value of the latter is

independent of the situation indicated in the antecedent clause. This type of conditional likewise exists in Chinese:

- (32) {Yàoshi/(?)Rúguǒ} nǐ kě -le dehuà,
 if / if 2SG be.thirsty-PERF C(-root)
 bīngxiāng lǐ yǒu guǒzhī.
 fridge in exist fruit.juice
 ‘If you are thirsty, there is juice in the fridge.’

Note that in relevance conditionals, *yàoshi* ‘if’ is slightly preferred to *rúguǒ* ‘if’ used in standard hypotheticals.

Chinese relevance conditionals are on a par with those in e.g. English as far as constraints on correlative adverbs in the main clause are concerned. Thus, *name* ‘in that case, therefore, so’ is banned here:

- (33) Yàoshi nǐ kě -le dehuà,
 if 2SG be.thirsty-PERF C(-root)
 (*nàme) bīngxiāng lǐ yǒu guǒzhī.
 in.that.case fridge in exist fruit.juice
 ‘If you are thirsty, (*in that case) there is juice in the fridge.’

The case is a bit more complex for *jiù* ‘then’; while in contrast to English *then*, *jiù* ‘then’ is acceptable in the main clause preceded by a relevance conditional, its function here is to emphasize the existence of the juice in the fridge (hence our rather free translation of *jiù* as ‘naturally’), rather than to highlight the logical link between the antecedent and the consequent clause as in standard *rúguǒ/yàoshi...jiù* ‘if...then’ conditionals:

- (34) Yàoshi nǐ kě -le dehuà,
 if 2SG be.thirsty-PERF C(-root)
 bīngxiāng lǐ jiù yǒu guǒzhī.
 fridge in then exist fruit.juice
 ‘If you are thirsty, there is juice in the fridge, naturally.’

(For a recent study of relevance conditionals in English and German, cf. Ebert et al. 2014).

3.1.1.3. Factual conditionals

Factual conditionals (Iatridou 1991), also known as *premise conditionals* (Haegeman 2003), such as *If Fred is so smart, why didn't he get the job?* likewise exist in Chinese:

- (35) Rúguǒ Zhāngsān zhēnde nàme nénggàn dehuà,
 if Zhangsan really so capable C(-root)
 nà /*nàme tā wèishénme hái
 then/in.that.case 3SG why still
 zhǎo -bù -dào gōngzuò ne?
 search-NEG-arrive work SFP
 ‘If Zhangsan is really so capable, why doesn't he find a job then?’

Again, we observe constraints for correlative adverbs in the main clause. *Name* ‘in that case’ is banned here, as already observed for relevance conditionals (cf. (33) above); by contrast, *nà* ‘that, then’, is acceptable, on a par with sentence-final *then* in English. Note that *then* in the

sentence-initial position of the main clause is reserved for standard conditionals in English (cf. Ebert et al. 2014 and references therein).

3.1.2. Conditionals in sentence-final position

While the default position for conditionals is preceding the main clause, it is well-known that they can also occur in sentence-final position, analyzed by Chao (1968: 132-13, section 2.14.3) as “afterthought” (also cf. Wei & Li, this volume, Part 2, section 6):

- (36) Tā běnlái shì kěyǐ bèi jiùhuó de,
 3SG originally be can PASS save DE
 rúguǒ jíshí sòng-dào yīyuàn dehuà.
 if in.time bring-arrive hospital C(-root)
 ‘She could in fact have been saved, if she had been brought to the hospital in time.’
- (37) Tā shì bù huì zhǔdòng lái de, . (Liu Yuehua et al. 2001: 348)
 3SG be NEG will initiative come DE
 chūfēi nǐ qù qǐng tā.
 only.if 1SG go invite 3SG
 ‘He will definitely not come on his own, unless you go and invite him.’

According to Xing Fuyi (2001: 88), the sentence-final position of the conditional has the effect of completing the first sentence, of adding an explanation. It explicitly draws the attention of the hearer to the condition under which the main clause holds. This can be further illustrated in the following sentence where a cautioning warning is inserted before the conditional:¹⁵

- (38) Wǒmen míngtiān kěyǐ qù yěcān, bùguò bié gāoxìng de
 1PL tomorrow can go picnic but NEG happy DE
 tài zǎo, qiántí shì, rúguǒ tiānqì hǎo dehuà.
 too early premise be if weather good C(root)
 ‘We can go picnicking tomorrow, but don’t be happy too soon, only if the weather is good.’

Conditional clauses in sentence-final position must, however, be distinguished from those in sentence-initial position. For example, correlative adverbs such as *cái* as well as conjunctions in the pre-subject position of the main clause (e.g. *nàme* ‘in that case’, *fǒuzé* ‘otherwise’) are unacceptable in the main clause when the latter is not preceded, but followed by the conditional:

- (39) Tā (*cái) huì qù, chūfēi nǐ qù. (cf. (30) above)
 3SG only.then will go unless 2SG go
 ‘He will go only if you go.’

¹⁵ Adverbial clauses in sentence-final position seem to be different from non-clausal “afterthoughts” examined by Cheung (2009) which are said to be systematically de-stressed. By contrast, as observed by Xing Fuyi (2001), a sentence-final conditional clause might very well be assigned phonological prominence in order to attract the hearer’s attention. The difference between the stress pattern holding within a simple sentence (including the “afterthought”) and the stress pattern spanning over two interrelated clauses still needs to be explored.

- (40) (*Fǒuzé) tā shàng bān cónglái
 otherwise 3SG go work ever
 bù zuò chē, chǔfēi xià yǔ. (cf. (31) above)
 NEG sit bus unless fall rain
 ‘He never takes the bus to go to work, unless it rains.’
- (41) ({Nà /*nàme }) wǒmen míngtiān kěyǐ qù yěcān,
 then/ in.that.case 1PL tomorrow can go picnic
 rúguǒ tiānqì hǎo dehuà.
 if weather good C(root)
 ‘We can go picknicking tomorrow, provided the weather is good.’

While *cái* ‘only then’, *fǒuzé* ‘otherwise’ and *nàme* ‘in that case’ are excluded in (39) - (41), because they require a preceding clause in order to establish the logical link, *nà* ‘then’ can express a simple consecutive relationship and is therefore acceptable in (41).

These observations concerning conditionals in sentence-final position show that the sentence-initial position is the default position, insofar as the constraints observed all hold for the adverbial clause in sentence-final position. In this respect we follow traditional Chinese grammar, which considers the sentence-initial position as default position and formulates the constraints in terms of “deviations” from the properties holding in this sentence-initial position. As we will see in the remainder of this article, this asymmetry between sentence-initial and sentence-final adverbial clauses, which excludes a derivational relationship between the two types, likewise holds for causal, inferential, concessive and temporal clauses.

3.1.2. Bare conditionals

So far we have examined conditional clauses introduced by ‘if’ conjunctions.¹⁶ However, as is well-known, conditionals in Chinese can also be “bare”:¹⁷

- (42) a. Tā qù, wǒ jiù bù qù.
 3SG go 1SG then NEG go
 ‘If he goes, then I won’t go.’
- b. Tā bù qù, wǒ jiù qù.
 3SG NEG go 1SG then go
 ‘If he doesn’t go, then I’ll go.’
- (43) Dìtiě bà gōng, wǒ jiù liú -zài jiā le
 subway stop work 1SG then remain-be.at home SFP
 ‘If the subway is on strike, I’ll stay at home.’

In fact, in the absence of any context, the interpretation of a bare complex sentence ‘adverbial clause - main clause’ as implying a conditional relation is the default case and does not require any explicit conditional conjunction.

¹⁶ Besides the ‘if’-conjunctions *yào*, *yàoshì*, *rúguǒ* illustrated in the examples above, *jiǎrú*, *jiǎshǐ*, and *tǎngruò*, all meaning ‘if’ are likewise used in the spoken language (cf. Eifring 1993: 355, Liu Yuehua et al. 2001: 313-314 for extensive lists, also including the numerous ‘if’ conjunctions of the written register).

¹⁷ As the attentive reader may have noticed, the sentences (42) - (43) are not completely bare, because featuring the adverb *jiù* ‘then’ in the main clause. Note that the presence of correlative adverbs (*jiù* ‘then’, *cái* ‘only then’ etc.) is obligatory, also in the presence of ‘if’ conjunctions.

Finally, in so-called *donkey sentences* (cf. Cheng & Huang 1996; Pan & Jiang 2015), conditional conjunctions (*rúguǒ* ‘if’, *yàoshi* ‘if’ etc.) are excluded:

- (44) ({**rúguǒ*/**yàoshi*}) Nǐ chī shénme, wǒ jiù chī shénme.
 if 2SG eat what 1SG then eat what
 ‘I’ll eat whatever you eat.’
- (45) Shéi xiān lái , shéi xiān chī.
 who first come who first eat
 ‘Who arrives first, eats first.’

Importantly, the adverb *jiù* ‘then’ is only optional in the case of a subject indefinite *wh* as in (45) (cf. Pan 2011 for further discussion).

3.1.3. *The analysis of conditionals in English*

As outlined above, a conditional clause in Chinese can be either merged in sentence-initial or sentence-final position, and neither position is to be derived by movement.

This is different from the analysis proposed for English (cf. Bhatt & Pancheva (2006: 670)). While a sentence-final conditional clause is merged *in situ* (i.e. adjoined to VP, cf. (46)), there are different scenarios for sentence-initial conditional clauses, depending on the presence or absence of *then*.¹⁸ When no *then* is present in the main clause, the conditional clause can either be merged directly in sentence-initial position (cf. (47a)) or be fronted there from the sentence-final VP adjoined position (cf. (47b)). If, however, *then* is present, it is *then* that is fronted within the main clause, and the conditional clause in turn adjoins to the resulting adjunction structure, thus preceding *then* (cf. (48)):

- (46) Bill will leave [VP [VP leave] [CP if Mary comes]]
- (47) a. [IP [CP If Mary comes] [IP Bill will leave]]
 b. [IP [CP If Mary comes]_i [IP Bill will [VP [VP leave] t_i]]]
- (48) [IP [CP If Mary comes] [IP then_i [IP Bill will [VP [VP leave] t_i]]]

In sum, it is only in the absence of *then* that a sentence-initial conditional clause might be derived by movement from a lower position (cf. (47b)).

Note, though, as observed by Bhatt & Pancheva (2006: 671, (94), (95)) themselves, that reconstruction effects are the same for conditional clauses with or without *then* in the main clause. This is unexpected, given that one involves movement and the other not and that reconstruction effects *are* predicted for the complex sentence involving movement.

- (49) *If John_i is sick, he_i thought that Bill would visit.
 (50) *If John_i is sick, then he_i thought that Bill would visit.

¹⁸ As pointed out by Ebert et al. (2014: 354), the crucial role played by *then* here is linked to the widespread assumption (cf. Fintel 1994; Iatridou 1994 among others) that *then* as a kind of proform picks up the (world type) referent of the *if*-clause when the latter is left-dislocated.

As far as we can see, this rather argues against a movement analysis for sentence-initial conditional clauses in English as well. Be that as it may, the derivation proposed for English conditional clauses cannot be applied to Chinese.¹⁹

First, the equivalent of (49) in Chinese seems to show that the subject in a sentence-initial conditional clause can be coindexed with the subject pronoun in the main clause

- (49') Rúguo Lisi_i shēng bìng dehuà, tā_i rènwéi
 if Lisi be sick [-root]C he think
 Zhāngsān kěndìng huì lái tànbìng.
 Zhangsan will come visit
 'If Lisi is sick, he thinks that Zhangsan will certainly come visit.'

Note that the acceptability judgements for this type of sentence are not the same among native speakers. By contrast, the acceptability of the sentence below with the coindexation of both subjects does *not* seem to be subject to variation among native speakers (also cf. Li & Wei, this volume, Part 1, section 3.4.2):

- (51) Rúguo Zhāngsān_i hěn yǒuqián,
 if Zhangsan very rich
 tā_i kěndìng huì bāngzhù qióngrén de.
 3SG definitely will help poor.people DE
 'If Zhangsan_i were rich, he_i would definitely help the poor.'

If we now look at the English translation of (51), we see that in English as well, *Zhangsan* can be coindexed with *he* in the main clause, as likewise pointed out by an anonymous reviewer. This further challenges Bhatt & Pancheva's analysis for conditional clauses in English.²⁰

Second, a derivation involving adverb fronting as in English does not tie in with the overall syntax of adverbs such as *jiù* 'then', *nàme* etc. in Chinese. More precisely, adverbs in general are banned from the sentence-final position, so there is no position they could have been fronted from. In addition, while adverbs of the type *nà* 'so' and *nàme* 'in that case' always precede the subject, the so-called "correlative" adverbs illustrated by *jiù* 'then', *cái* 'only then' etc. are confined to the preverbal position to the right of the subject. This restrained distribution points to their systematic, principled "unmovability" and contrasts with English *then*, on the one hand, and with the class of sentence-level adverbs in Chinese (e.g. *yěxǔ* 'perhaps', *xiǎnrán* 'obviously' etc.), which are acceptable in both pre- and post-subject position (preverbally), on the other (cf. Paul 2017 for further discussion).

Finally, Bhatt & Pancheva (2006: 640, (4a-d)) point out that (some of) the properties shown for conditional clauses likewise hold for other adverbial clauses in English: they can either precede or follow the main clause and show a correlative adverb in the main clause, even though this is not always the case:

- (52) a. If Andrea arrived late, then Clara must have gotten upset.
 b. When Andrea arrived late, (*/? then) Clara got upset (??then).
 c. Because Andrea arrived late, (*for that reason) Clara got upset (*for that reason).
 d. Although Andrea arrived on time,

¹⁹ For Chinese, we likewise do not endorse Bhatt & Pancheva's (2006: 639) claim that conditionals are "essentially free relatives of possible worlds".

²⁰ As mentioned by Bhatt & Pancheva (2006: 671; 684: footnote 29), the Condition C-effects are unexpected in (50). They comment this as follows: "These effects are a problem only if we assume that reconstruction effects imply movement. As much work on connectivity has argued, such an assumption is far from obvious."

(still/nevertheless) Clara (still/nevertheless) got upset.

When-clauses only allow *then* very marginally. While complex sentences with concessives admit *still* or *nevertheless* in the main clause, no correlative adverb is acceptable in the main clause in combination with a *because*-clause. Again, the situation in Chinese is more complex, as we will see in the remainder of this article.

3.2 Causal clauses

3.2.1. Causal clauses in sentence-initial position

3.2.2. Causal clauses in sentence-final position

3.2.3. Complementizer *yīnwèi* vs preposition *yīnwèi*

3.2.1. Causal clauses in sentence-initial position

Like conditional clauses, causal clauses occur in sentence-initial position. There is only one causal conjunction used in the spoken language, i.e. *yīnwèi* ‘because’. The other causal conjunction, *yóuyú* ‘because’, is more typical of the written register and therefore not included here (cf. Liu et al. 2001: 335-336 for further discussion). Correlative adverbs in the main clause include *suǒyǐ* ‘so, therefore’ (exclusively in pre-subject position), *jiù* ‘then’, and *cái* ‘(only) then’ (the latter two exclusively in the canonical preverbal adverb position to the right of the subject):

- (53) *Yīnwèi dìtiě jīntiān bà gōng,*
 because subway today stop work
suǒyǐ tā zǒu lù qù shàng bān
 so 3SG walk road go attend work.
 ‘Because the subway is on strike, he therefore walks to work.’
- (54) *Yīnwèi wǒ érzi bìng -le,*
 because 1SG son be.ill-PERF
(suǒyǐ) wǒ jiù dài tā qù-le yīyuàn
 so 1SG then bring 3SG go-PERF hospital
 ‘Because my son has fallen ill, I went with him to the hospital.’
- (55) *Yīnwèi tā cónglái méi chī-guò,*
 because 3SG ever NEG eat-EXP
cái juéde hěn hǎochī
 only.then feel very delicious
 ‘Because he had never tasted it before, he found it delicious.’

As illustrated in (56) - (58) below, when either *yīnwei* ‘because’ or the correlative adverbs in the main clause (*suǒyǐ* ‘so, therefore’, *jiù* ‘then’, *cái* ‘(only) then’) are absent, the causal relationship still obtains:

- (56) *Wǒ méi yǒu shíjiān zhǔ fàn,*
 1SG NEG have time cook food
jiù qù cāntīng suǐbiàn chī-le yīdiǎn.
 then go restaurant to.one’s.liking eat-PERF a.bit
 ‘Because I didn’t have time, I went to the restaurant to eat a little something.’

- (57) Wǒ hé tā zàiyīqǐ gōngzuò-guò, (Liu et al. 2001: 337)
 1SG with 3SG together work -EXP
 suǒyǐ wǒ duì tā bǐjiào shúxī.
 so 1SG towards 3SG relatively familiar
 ‘I have collaborated with her, so I’m rather familiar with her.’
- (58) Yīnwèi nǐ bù shì zhōngguó rén (Liu et al. 2001:333)
 because 2SG NEG be Chinese
 zhōngguó rén jiào nǐ lǎo-wài
 Chinese call 2SG old-foreigner.
 ‘Because you are not Chinese, the Chinese call you “old [i.e. respected] foreigner”.’

3.2.2. Causal clauses in sentence-final position

As illustrated in (59) - (61) below, a causal clause can also follow the main clause:

- (59) Tā méi yǒu lái shàng kè, (Liu et al. 2001: 334)
 3SG NEG have come attend class
 yīnwèi tā bìng-le
 because 3SG be.ill-PERF
 ‘He hasn’t come to school, because he’s fallen ill.’
- (60) Zhèlǐ wú fǎ guò jiāng, yīnwèi shuǐliú tài jí.
 here NEG way cross river because current too fast
 ‘There’s no way to cross the river here, because the current is too strong.’
 (Lü Shuxiang 2000: 623)
- (61) Zuótiān wǒ méi qù zhǎo nǐ,
 yesterday 1SG NEG go search 2SG
 yīnwèi yǒu bié de shì.
 because have other SUB matter
 ‘I didn’t come to see you yesterday, because I had something else to do.’

Again, correlative adverbs are barred from the main clause in this case, as already observed for sentences with a conditional clause in sentence-final position:²¹

- (62) (*Suǒyǐ) tā (*jiù) méi yǒu lái shàng kè,
 therefore 3SG then NEG have come attend class
 yīnwèi tā bìng-le.
 because 3SG be.ill-PERF
 ‘He hasn’t come to school, because he’s fallen ill.’

²¹ There are instances where *suǒyǐ* ‘so’ may appear in a sentence-initial clause. However, as the obligatory presence of the copula *shì* ‘be’ preceding the *yīnwèi* clause in this case shows, this is a construction different from the ‘adverbial clause - main clause’ construction illustrated in (57) above, a fact which we have tried to capture in the translation of (i). Also note the post-subject position of *suǒyǐ* in (i), which is excluded for *suǒyǐ* in the standard pattern ‘adverbial clause - main clause’, where *suǒyǐ* must precede the subject:

(i) Wǒ suǒyǐ duì tā bǐjiào shúxī (Liu et al. 2001: 337)
 1SG so 1SG towards 3SG relatively familiar
 shì yīnwèi wǒ hé tā zàiyīqǐ gōngzuò-guò.
 be because 1SG with 3SG together work -EXP
 ‘The reason I am rather familiar with her is because I have already worked with her.’

This is on a par with e.g. English where correlative adverbs such as *therefore* are likewise banned from the main clause followed by the causal clause.

- (63) a. He didn't come to school, because he is sick
 b. (*Therefore) he didn't come to school, because he is sick

Whether this ban on adverbs is treated as a semantic rather than a syntactic constraint is orthogonal to the issue that this ban makes it difficult to derive the sentence-initial causal clause from a sentence-final position via movement.

However, the semantic effect associated with the sentence-final position of the conditional clause mentioned in section 3.1.2 above, *viz* drawing the speaker's attention to the additional, completing information is not observed for the causal clause. Instead, as already observed by Chao (1968: 133, section 2.14.3), a causal clause in sentence-final position is not necessarily an unplanned afterthought. Accordingly, the order 'main clause - causal clause' seems to represent one of the two possible orders for a sentence involving a causal relation, *modulo* the fact that different constraints (e.g. with respect to the presence/absence of correlative adverbs) apply in these two positions (cf. Wei & Li, Part 1, section 3.4.1.1).²² Again, no derivational relationship exists between the two orders.

The difference just observed between a sentence-final conditional clause and a sentence-final causal clause is confirmed by the following contrast:

- (64) Tā jīntiān méi lái, [TP [Ø] shì [yīnwèi tā bìng-le]].
 3SG today NEG come be because 3SG be.ill-PERF
 'He hasn't come today, this is because he has fallen ill.'

- (65) Wǒmen míngtiān kěyǐ qù yēcān,
 1PL tomorrow can go picnic
 (*shì) rúguǒ tiānqì hǎo dehuà.
 be if weather good C(root)
 'We can go picknicking tomorrow, (??this is) provided the weather is fine.'

In (64), the *yīnwèi*-clause is the complement of the copula *shì* whose (null) subject refers back to the first clause, hence our translation as 'this is because...'. As shown in (65), this construction is impossible in the case of a conditional clause in Chinese, for semantic reasons as also observed for English.

3.2.3. Complementizer *yīnwèi* vs preposition *yīnwèi*

Finally, the conjunction *yīnwèi* 'because' co-exists with the preposition *yīnwèi* 'because of'. Like all adjunct phrases, the adjunct PP headed by *yīnwèi* is confined to a preverbal position, preceding or following the subject, and banned from postverbal position.

- (66) a. [PP Yīnwèi [DP zhè jiàn shì]]
 because.of this CL matter (Lü Shuxiang 2000: 622)

²² As pointed out by Wei & Li (this volume, Part 1, section 3.4.1.1), there are cases where the causal clause must appear in the sentence-final position:

- (i) Mǎlì bù zài zhèlǐ, yīnwèi wǒ méi kànjiàn tā (their example (97))
 Mary NEG be.at here because 1SG NEG see 3SG
 'Mary is not here, because I haven't seen her.'
 (ii) *Yīnwèi wǒ méi kànjiàn tā, Mǎlì bù zài zhèlǐ
 because 1SG NEG see 3SG Mary NEG be.at here

[_{TP} Xiǎotiān hái shòudào-le biǎoyáng.
Xiaotian still receive -PERF praise

- b. [_{TP} Xiǎotiān [_{PP} yīnwèi [_{DP} zhè jiàn shì]]
Xiaotian because.of this CL matter
hái shòudào-le biǎoyáng.
still receive -PERF praise
'Because of this matter, Xiaotian again received praise.'

Anticipating somewhat our discussion of the categorial status of the items labelled *conjunctions* so far (cf. section 6 below), the pair of examples below suggests that it does make a difference whether *yinwei* in (67) is analyzed as a C rather than a P selecting a clause, because otherwise the difference in acceptability of *suǒyǐ* 'therefore' cannot be explained.

- (67) [_{clause} Yīnwèi tiānqì lěng] suǒyǐ héshuǐ jié -le bīng.
because weather cold therefore river consolidate-PERF ice
'Because it is cold, therefore the river has frozen.'

- (68) [_{PP} Yīnwèi [_{DP} zhè ge yuángù]],
because.of this CL reason
(*suǒyǐ) tā zuótiān méi yǒu lái.
therefore 3SG yesterday NEG have come
'Because of this reason he (*therefore) didn't come today.'

While *suǒyǐ* 'therefore' in example (68) from Lin Yuwen (1984: 12) is indeed excluded, in other cases *suǒyǐ* seems marginally acceptable in combination with a *yīnwèi*-PP for some speakers, suggesting that Lin's generalization might be too strong:

- (69) Wǒ hěn bàoqiàn, [_{PP} yīnwèi [_{DP} wǒ de yuángù]],
because.of this CL reason
(?suǒyǐ) dàjiā dōu bù lái le.
therefore everybody all NEG come SFP
'I'm sorry that because of me, nobody came.'

Nevertheless, the other observations point to the existence of a distinction between the preposition *yīnwèi* 'because of' and the complementizer *yinwei* 'because' (cf. section 6.1 below for further discussion).

3.3. Inferential clauses

The most common inferential conjunction is *jìrán* ‘since’: its variant *jì* is more typical of the written language and will therefore not be discussed here.

- (70) *Jìrán nǐ dōu lái -le, jiù bāng wǒ zuò diǎn shì.*
 since 2SG all come-PERF then help 1SG do little thing
 ‘Since you are here, you might as well give me a hand.’
- (71) *Jìrán nǐ yídìng yào qù, wǒ yě bù fǎnduì.*
 since 2SG certainly want go 1SG also NEG oppose
 ‘Given that you want to go anyway, I will not oppose you.’
 (Lü Shuxiang 2000: 293)

As is well-known, the difference between *since*, *given that* and *because* lies in the fact that *both* the speaker and the hearer know about the fact related in the *since* and *given that* clause. This is the reason why *yīnwèi* ‘because’ in (72) is not felicitous: *yīnwèi* ‘because’ is used when the speaker assumes the hearer not to be up-to-date with respect to the reason. This is, however, in contradiction with the fact that the hearer sees the speaker as result of his having been dispatched to the hearer’s place.

- (72) *Jìrán/(*yīnwèi) pài wǒ lái, nà jiù shì xiāngxìn wǒ.*
 since because send me come that then be trust me
 ‘Since I was sent here officially, that means that I am trustworthy.’
 (Lü Shuxiang 2000: 293)

If we now change the order and put the inferential clause in the sentence final position, no notable semantic difference ensues.

- (73) *Wǒ yě bù fǎnduì, jìrán nǐ yídìng yào qù.*
 1SG also NEG against since 2SG certainly want go
 ‘Given that you want to go anyway, I will not oppose you.’
- (74) *Nǐ jiù bāng wǒ zuò diǎn shì ba,*
 2SG then help me do little thing SFP
jìrán nǐ dōu lái-le.
 since 2SG all come-Perf
 ‘You might as well give me a hand, since you are here.’

This may be due to the informational value of inferential clauses as just discussed and the lack of any causal relation between the two clauses. Note that correlative adverbs such as *jiù* ‘then’ are acceptable irrespective of whether the main clause follows or precedes the inferential clause; this is different from the observation made above concerning complex sentences with conditional and causal clauses (cf. sections 3.1.2. and 3.2.2 above).

3.4 Concessive clauses

3.4.1 Concessive clauses with *suīrán*, *jíshǐ*, *jìbiàn*, *jiùsuàn*

The conjunctions present in concessive clauses are *suīrán* ‘although’ as well as *jíshǐ*, *jìbiàn*, *jiùsuàn*, the latter three all meaning ‘even if, even though’. Like conditional, causal and inferential clauses, the concessive clause in general precedes the main clause; the latter can be optionally introduced by the conjunctions *dàn(shì)* ‘but’, *kěshì* ‘but’ or *bùguò* ‘but’ and in addition can contain TP-internal adverbs such as *háishì* ‘still’, *yě* ‘also’, *réngrán* ‘still’ etc.

- (75) *Suīrán tā méi yǒu qián*, ({*kěshì*/*bùguò*})
 although 3SG NEG have money but
wǒ {háishì/réngrán} yào gēn tā jié hūn.
 1SG still want with 3SG join marriage
 ‘Although he has no money, I (nevertheless) still want to marry him.’

- (76) *Suīrán wǒmen bù shì péngyou*,
 although 1PL NEG be friends
dàn wǒmen yě bù shì dírén.
 but 1PL also NEG be enemy
 ‘Although we are not friends, we are not enemies either.’

When the concessive clause does not occupy the sentence-initial position (cf. (77a), (78a)), but occurs sentence-finally (cf. (77b), (78b)), this has the effect of emphasizing that the first clause holds irrespective of the circumstances expressed in the concessive clause.

- (77) a. {*Suīrán / jíshǐ*} *tā méi yǒu qián*,
 although/ even.if 3SG NEG have money
wǒ {háishì/yě} yào gēn tā jié hūn.
 1SG still /also want with 3SG join marriage
 ‘Although/even if he has no money, I still want to marry him.’

- b. *Wǒ háishì yào gēn tā jié hūn*,
 1SG still want with 3SG join marriage
 {*suīrán / jíshǐ*} *tā méi yǒu qián*.
 although/ even.if 3SG NEG have money
 ‘I still want to marry him, although/even if he has no money.’
 (Context: A mother repeats her injunction not to marry. The daughter replies with sentence (77b).)

The same holds for a concessive clause introduced by *bùguǎn* or *wúlùn* ‘no matter what...’

- (78) a. {*Bùguǎn/wúlùn*} *nǐ shuō shénme*,
 no.matter 2SG say what
wǒ kěndìng huì qù de.
 1SG definitely will go DE
 ‘Whatever you say, I will go (there).’
- b. *Wǒ kěndìng huì qù de, bùguǎn nǐ shuō shénme*.
 1SG definitely will go DE no.matter 2SG say what
 ‘I will definitely go (there), whatever you say.’

Given this semantic difference, the order ‘main clause - concessive clause’ is clearly not a neutral alternative to the default order ‘concessive clause - main clause.’

3.4.2. Other alleged concessive conjunctions

In traditional grammar manuals *nìng-kě*, *nìng-yuàn*, *nìng-kěn* are included among the conjunctions with a concessive meaning, on a par with *suīrán* ‘although’ etc. However, as illustrated in (79a-b), *nìng-kě*, *nìng-yuàn*, *nìng-kěn* must occur to the right of the subject and are excluded from the pre-subject position, unlike the other cases of conjunctions seen so far. This in itself already sheds doubt on their status of conjunctions.

- (79) a. Wǒ {*nìng-kě*/*nìng-yuàn*/*nìng-kěn*} chū jiā,
 1SG would.rather exit home
 yě bù yào jià gěi tā.
 also NEG want marry to 3SG
 ‘I would rather (leave home, i.e.) become a nun than marry him.’
- b. *{*Nìng-kě*/*nìng-yuàn*/*nìng-kěn*} wǒ chū jiā, ...
 would.rather 1SG exit home
 yě bù yào jià gěi tā.
 also NEG want marry to 3SG

In addition, if one decomposes these so-called conjunctions, we obtain the adverb *nìng* ‘rather, preferably’ followed by a modal auxiliary, i.e. *kě* ‘can’, *yuàn* ‘wish’ or *kěn* ‘be willing to’. Accordingly, these items are to be analyzed as verbs selecting a clausal complement. This is confirmed by (80) where the clausal complement contains an explicit subject different from the matrix subject.

- (80) Wǒ bàba {*nìng-kě*/*nìng-yuàn*/*nìng-kěn*} wǒ chū jiā,
 1SG father would.rather 1SG exit home
 yě bù yào wǒ jià gěi tā.
 also NEG want I marry to him
 ‘My father would rather that I become a nun than that I marry him.’

Sentence (81) below with *nìng-kě*/*nìng-yuàn*/*nìng-kěn* ‘would rather’ in sentence initial position is only a counter-example at first sight: the subject of *nìng-kě* is an impersonal pronoun which in Chinese remains covert:

- (81) *Nìng-kě* wǒ chū jiā,
 would.rather 1SG exit home
 yě bù néng nǐ bù jià gěi rén.
 also NEG can 2SG NEG marry to person
 ‘It would be preferable that I become a nun, but it cannot be the case that you do not get married.’

Importantly, *nìng-kě* in (81) cannot be replaced by *nìng-yuàn* or *nìng-kěn*, since both *kěn* ‘be willing to’ and *yuàn* ‘wish’ are volitional verbs requiring an agent. This confirms our decomposition above. Note that *bù néng* is construed as an impersonal predicate as well, taking a clausal complement: ‘it cannot be the case that’. This shows conclusively that *nìng-kě*/*nìng-yuàn*/*nìng-kěn* are not conjunctions, but verbs.

Adverbial clauses introduced by *yǔqí* ‘instead’ raise another question, this time concerning the sequence *bù-rú* ‘not-be equal to’ often present in the associated main clause. Xing Fuyi (2001:147) for example analyzes *bùrú* as conjunction. By contrast, Lü Shuxiang (2000: 102-103) analyses *bùrú* as verb. More precisely, *bùrú* selects a clausal complement (whose subject may be different from the first clause).

- (82) Yǔqí ràng tā gēn biéde nǚrén jié hūn
 instead let 3SG with other women join marriage
 hái bù rú bǎ tā gěi shā-le.
 still NEG be.equal.to BA 3SG GEI kill-PERF
 ‘Instead of letting him marry another woman, it would still be better to kill him.’

The subject of *bù rú* ‘not be equal to’ is a null subject referring to the first clause introduced by *yǔqí* ‘instead’; this *yǔqí* -clause in turn can be analyzed either as a topic or as an adjunct to the matrix TP (cf. (83a)). An alternative analysis is to consider *yǔqí nǐ qù* as a sentential subject (cf. (83b)).

- (83) a. [[Yǔqí nǐ qù] [TP Ø bù rú wǒ qù]].
 instead 2SG go NEG be.equal.to 1SG go
 b. [TP [sent.subj.TP yǔqí nǐ qù] [bù rú wǒ qù]].
 instead 2SG go NEG be.equal.to 1SG go
 ‘It would be better if I go than that you go.’

Concerning the semantic difference between a sentence with *yǔqí* ‘instead’... *bù rú* ‘not be equal to’ and a sentence with *nìngkě...yě* ‘would rather...than’, we observe that in the first case, it is the proposition in the main clause introduced by *bù rú* that is presented as the desirable option, whereas in the second case, it is the proposition in the adverbial clause (with *nìngkě*) which is presented as preferable:

- (84) Yǔqí jiānglái nào lí hūn
 instead future fight separate marriage
 bù rú xiànzài bié jié hūn.
 NEG be.equal.to now NEG join marriage
 ‘Instead of fighting about a divorce in the future, it would be better not to get married now at all.’
- (85) Wǒ nìng-kě è -sǐ yě bù chī
 1SG would.rather be.hungry-die also NEG eat
 dírén gěi de dōngxi.
 enemy give SUB thing
 ‘I’d rather starve than eat the food provided by the enemy.’

For completeness sake, we would like to add that the order *bù rú... yǔqí* is acceptable as well. As reflected in the translation, this order seems to be on a par with the order *yǔqí ... bù rú*.

- (86) Bù rú nǐ jiào tā qù ba,
 NEG be.equal.to 2SG ask 3sg go SFP
 yǔqí nǐ zìjǐ pǎo yí tàng.
 instead 2SG self run 1 round

‘It would be better to ask him to go instead of going yourself.’

It is important to make a difference between the concessive conjunctions, on the one hand, and other items with a concessive meaning, such as the verbs *nìng-kě/nìng-yuàn/nìng-kěn* ‘would rather’ just discussed. Only the former will be included in the discussion focusing on the precise status of conjunctions (cf. section 6 below).

3.5 Temporal adjuncts

3.5.1. Complex DPs headed by *shíhou* ‘time’ (embedded in a PP or not)

3.5.2. Temporal adjunct PostPs (embedded in a PP or not)

3.5.3. Temporal adjunct clauses

3.5.4. Temporal adjuncts in sentence-final position

The reason why we talk about temporal *adjuncts* here instead of temporal *clauses* is due to the fact that the majority of the Chinese equivalents of temporal clauses in English turn out to have the form of DPs, PPs or PostPs (Postpositional Phrase).

3.5.1. Complex DPs headed by *shíhou* ‘time’ (embedded in a PP or not)

Temporal clauses expressing ‘time when’ can be encoded by the DP headed by *shíhou* ‘time, moment’ preceded by a relative clause.

- (87) Tā dào Běijīng de shíhou, tiānqì bù tài hǎo.
 he arrive Beijing SUB time weather NEG too good
 ‘When he arrived at Beijing, the weather was not good.’
 (= ‘The time when he arrived at Beijing, ...’)

This complex DP can be the complement of the preposition *zài* ‘at’.

- (88) a. [PP zài [DP nà ge [NP [CP hái méi yǒu rénlèi] de shíhou]]
 at that CL still NEG have humans SUB time
 ‘at the time when humans did not exist yet’

- b. [PP zài [DP [CP hái méi yǒu rénlèi de] nà ge shíhou]
 at still NEG have humans SUB that CL time
 ‘at the time when humans did not exist yet’

- (89) [PP zài [DP [CP nǐ yùdào kùnnán de] shíhou]]
 at 2SG meet difficulty SUB time
 ‘at the time when you encounter difficulties’

As illustrated in (88a-b), *shíhou* ‘time, moment’ behaves like other NPs in Chinese insofar as it allows for the sequence [demonstrative + classifier] to either precede or follow the relative clause.²³

²³ The two possible orders are illustrated here with the NP *huàjiā* ‘painter’:

- (i) nà ge wǒ zuótiān jiàn-guo de huàjiā
 that CL 1SG yesterday see-EXP SUB painter
 (ii) wǒ zuótiān jiàn-guo de nà ge huàjiā
 1SG yesterday see-EXP SUB that CL painter

Note that the preposition *zài* ‘at’ cannot select a clausal complement, hence the parsing in (89) above where it is the complex DP headed by *shíhòu* ‘time’ that is the complement of *zài* ‘at’.

- (90) **zài* [_{TP/CP} hái méi yǒu rénlèi]
 at still NEG have humans
 (Intended: ‘when humans did not exist yet.....’)

Another preposition that can take a temporal DP as complement is *dāng* ‘at’.²⁴

- (91) [_{PP} dāng [_{DP} [_{CP} nǐ yùdào kùnnán] de shíhòu]
 at 2SG meet difficulty SUB time
 ‘(the time) when you encounter difficulties....’

However, unlike *zài* ‘at’, *dāng* ‘at’ only allows *complex* DPs (cf. Lü Shuxiang 2000: 149):

- (92) a. **dāng* [zhè ge/ nà ge shíhòu]
 at this CL/ that CL time
 b. **dāng* [1991 nián]
 at 1991 year

- (93) a. *zài* [zhè ge/ nà ge shíhòu]
 at this CL/ that CL time
 ‘at this/that time’
 b. *zài* [1991 nián]
 at 1991 year
 ‘in the year 1991’

On a par with *zài* ‘at’, *dāng* ‘at’ cannot take a clausal complement:

- (94) a. **dāng* [_{TP} hái méi yǒu rénlèi]
 at still NEG have humans
 (Intended: ‘when humans did not exist yet.....’)
 b. **dāng* [_{TP} tā qù-le yīyuàn]
 at 3SG go-PERF hospital
 (Intended: ‘when he went to the hospital.....’)

This generalization is at first sight contradicted by the marginal acceptability of (95) where *dāng* ‘at’ is followed by a clause.

- (95) ?*Dāng* [_{TP} nǐ yùdào kùnnán],
 at 2SG meet difficulty
 nǐ yào jìde lái zhǎo wǒ.
 2SG must remember come fetch me

‘the painter I met yesterday’

²⁴ Chao (1968: 119) translates *dāng* as ‘being right at’.

‘(The moment) when you encounter difficulties, do remember to call upon me.’

Note, though, that native speakers prefer to complete the sentence by adding *de shíhòu* ‘the time’, which again results in a nominal complement for *dāng* ‘at’:

- (96) Dāng [DP [nǐ yùdào kùnnán] de shíhòu],
 at 2SG meet difficulty SUB time
 nǐ yào jìde lái zhǎo wǒ.
 2SG must remember come fetch me
 ‘The moment when you encounter difficulties, do remember to call upon me.’

Accordingly, (95) can be plausibly analyzed as containing an implicit (*de*) *shíhòu* ‘time’. In other words, *dāng* ‘at’ in (95) selects a DP complement, as it does in (96) (cf. (97)):

- (97) [PP dāng [DP [nǐ yùdào kùnnán] {de shíhòu / ∅}]],
 at 2SG meet difficulty SUB time
 ‘the moment when you encounter difficulties, ...’

This analysis of *dāng* ‘at’ as always selecting a (complex) DP is confirmed by the following set of data.

If *dāng* ‘at’ could not only select a DP, but also a clausal complement, hence function as a C, this would entail that the CP headed by *dāng* in (98) and (99) is a relative clause modifying *shíhòu* ‘time’ and *jǐ ge yuè* ‘several months’, respectively.

- (98) # [DP [CP dāng [nǐ yùdào kùnnán]] de shíhòu], ...
 at 2SG meet difficulty SUB time
 ‘the moment when you encounter difficulties, ...’
- (99) # [DP [CP dāng [tā zài Shànghǎi]] de zhè jǐ
 at 3SG be.at Shanghai SUB this several
 ge yuè], tā tiāntiān chī xiǎolóngbāo.
 CL month 3SG every.day eat Shanghai.dumplings
 ‘The few months he stayed in Shanghai, he ate Shanghai dumplings every day.’

Importantly, under this analysis, the sequence *dāng... shíhòu/zhè jǐ-ge yuè* being a DP should be acceptable in the subject position, contrary to fact.

- (100) *[TP [PP Dāng [DP [tā dāyìng wǒ qiúhūn] de shíhòu]]
 at 3SG accept 1SG proposal SUB time
 yě jiù shì wǒ zuì kāixīn de shíhòu].
 also then be 1SG most happy SUB time
 (Intended: ‘The moment she accepts my proposal will also be the moment
 that I will be happier than ever.’]
- (101) *[TP [PP Dāng [DP tā zài Shànghǎi] de zhè
 at 3SG be.at Shanghai SUB this
 jǐ-ge yuè]] guò de tài kuài].
 several-CL month pass DE too fast
 (Intended: ‘The few months he stayed in Shanghai passed too fast.’)

This shows that *dāng*... *shíhòu*/ *zhè jǐ-ge yuè* is in fact a PP on a par with *zai*...*de shíhòu*; (100) - (101) as well as (102) are unacceptable, because PPs are excluded from the subject position in Chinese (cf. Djamouri/Paul/Whitman 2013 for further discussion).

- (102) *[TP [PP *Zài* [DP [*nǐ gōngzuò*] *de shíhòu*]]
 at 2SG work SUB time
 yě jiù shì wǒ zuì kòngxián de shíhòu.
 also then be 1SG most free SUB moment
 (Intended: ‘The time you are at work is also the time I’m the most at leisure.’)

That it is indeed the PP vs DP status which is at stake here is demonstrated in (103) - (105) below, where the corresponding DPs are acceptable in subject position:

- (103) [TP [DP [*Tā zài Shànghǎi*] *de zhè jǐ ge yuè*]
 3SG be.at Shanghai SUB this several CL month
 guò de tài kuài.
 pass DE too fast
 ‘The few months he stayed in Shanghai passed too fast.’

- (104) [TP [DP *Tā dāyìng wǒ qiúhūn de shíhòu*]
 3SG accept 1SG proposal SUB time
 yě jiù shì wǒ zuì kāixīn de shíhòu.
 also then be I most happy SUB time
 ‘The moment she accepts my proposal will also be the moment that I will be happier than ever.’

- (105) [TP [DP *Nǐ gōngzuò de shíhòu*]
 2SG work SUB time
 yě jiù shì wǒ zuì kòngxián de shíhòu.
 also then be 1SG most free SUB time
 ‘The time you are at work is also the time I’m the most at leisure.’

Last, but not least, while *zài* ‘at’ can select a DP complement, it cannot select a PP complement, irrespective of whether this PP is headed by *zai* ‘at’ or another preposition such as *dāng* ‘at’. This illustrates a general constraint holding for Chinese prepositions *viz.* that they cannot select another PP as complement (cf. Djamouri, Paul & Whitman 2013).

- (106) *[PP *zài* [PP {*dāng/zài*}
 at at
 [NP [CP *dàjiā jīhū kuài juéwàng de*] *shíhòu*]],
 everyone nearly soon desperate SUB time
 (Intended: ‘at the time when everybody was on the verge of complete despair ...’)

To conclude this discussion, *dāng* is a preposition on a par with *zài* exclusively selecting a (complex) DP complement. For the marginally acceptable cases where *dāng* is followed by a clause, we have argued in favor of the presence of an implicit DP containing this clause (cf. (97) above).

3.5.2. Temporal adjunct PostPs (embedded in a PP or not)

Let us now turn to temporal adjuncts in the form of Postpositional Phrases. (For postpositions as distinct from nouns, cf. Paul 2015, ch. 4 and references therein.) Postpositions such as *yǐhòu* ‘after’, *yǐqián* ‘before’ and *yǐlái* ‘since’ can be preceded both by DPs and by clauses:

- (107) a. [PostP [DP wǔyuè] [Post° yǐhòu / yǐqián]]
 May after / before
 ‘after/before May’
- b. [PostPP [NP [CP tā dú dàxué] [N° Ø]] [Post° yǐqián]]
 3SG study university before
 ‘before she enrolled for studies at the university’
- (108) a. [PostP [DP jīnnián nián-chū] [Post° yǐlái]]
 this.year year-beginning since
 ‘since the beginning of this year’
- b. [PostPP [NP [CP tā dú dàxué] [N° Ø]] [Post° yǐlái]]
 3SG study university since
 ‘since she enrolled for studies at the university’

As indicated in the labeled bracketing for (107) and (108), the DP preceding a postposition is indeed selected as its complement. By contrast, this is not the case for clauses; instead the clause itself is first construed with a covert noun and it is the resulting NP that in turn is selected by the postposition. This analysis is necessary in order to account for the set of data below, starting with the observation already made above (cf. section 3.5.1, (90)) that the preposition *zài* ‘at’ cannot select a clausal complement:

- (109) a. *[PrepP [Prep° zài] [TP/CP tā dú dàxué]]
 at 3SG study university
- b. [PrepP [Prep° zài] [DP [TP/CP tā dú dàxué] de
 at 3SG study university SUB
 [shíhòu/ nà jǐ nián]]]
 time / that several year
 ‘at the time/during the years when she was at university’
- (110) a. [PrepP [Prep° zài] [PostP [DP 2017 nián] [Postp° yǐqián / yǐhòu]]]
 at 2017 year before/after
 ‘before/after the year 2017’
- b. [PrepP [Prep° zài] [PostP [NP [TP/CP tā dú dàxué] [N° Ø]]
 at 3SG study university
 [Post° yǐqián / yǐhòu]]]
 before/after
 ‘before/after she got enrolled at the university’

As illustrated in (109) - (110), the preposition *zai* ‘at’ can take a DP complement (cf. 109b) or a PostP complement (cf. 110a, b), to the exclusion of a clausal complement (cf. 109a). In (110b), the PostP complement of *zài* ‘at’ contains the clause *tā dú dàxué* ‘she studies at university’. If that clause were directly selected as complement by *yǐqián/yǐhòu* itself, this

The preposition *dāng* ‘at’, finally is incompatible with PostPs in general, be they headed by *yǐqián* ‘before’, *yǐhòu* ‘after’ or *yǐlái* ‘since’; this is due to *dāng* selecting (complex) DPs only, to the exclusion of PostPs. Incidentally, this confirms the difference between postpositions, on the one hand, and nouns, on the other.

3.5.3. Temporal adjunct clauses

Finally, there also seem to exist *clausal* temporal adjuncts.

(114) [[_{Adv.cl.} Chūntiān dào -le] [_{TP} tā cái huì lái]].
 spring arrive-PERF 3SG only.then will come
 ‘Only when spring has arrived will he come.’

(115) [_{Adv.cl.} Yǒu kèrén lái] [_{TP} tā cái huì
 have guest come 3SG only.then will
 bǎ zuì hǎo de chá náchūlái].
 BA most good SUB tea take.out
 ‘Only when there are guests, will he take out his best tea.’

However, as reflected in the translation, these clauses are of a hybrid nature combining temporal and conditional semantics. It is therefore not clear whether they can be grouped together with the other temporal adjuncts. (For a discussion of temporal adjuncts - including temporal clauses - when in a position below the matrix subject, cf. section 5.1 below.)

To summarize, temporal adjuncts come in three different categories: (i) complex DPs headed by *shíhòu* ‘time’ modified by a relative clause, (ii) PostPs headed by *yǐqián* ‘before’, *yǐhòu* ‘after’ or *yǐlái* ‘since’, and (iii) temporal clauses just illustrated in (114) and (115). Temporal DPs and PostPs can in turn be selected by different prepositions. The preposition *dāng* can only take a complex DP headed by *shíhòu* ‘time’ as complement. By contrast, the preposition *zài* ‘at’ combines both with DPs and PostPs (except for PostPs headed by the path postposition *yǐlái* ‘since’). As for the preposition *zìcóng* ‘from...on’, it requires a PostP complement headed by *yǐhòu* ‘after’ or *yǐlái* ‘since’ (to the exclusion of PostPs headed by *yǐqián* ‘before’).

3.5.4. Temporal adjuncts in sentence-final position

Temporal adjuncts are only acceptable in sentence-final position when in the form of PPs.

When the complement of the preposition is a DP headed by *shíhòu* ‘time’, it is the information conveyed by the sentence-initial main clause that is presented as more prominent, while no emphasis on the sentence-final temporal adjunct itself is observed. This is a semantic effect not observed for the other types of adverbial clauses discussed above.

(116) Wǒ kěndìng huì lái kàn nǐ de,
 1SG certainly will come see 2SG DE
 ??(dāng) wǒ yǒu shíjiān de shíhòu.
 at 1SG have time SUB time
 ‘I will certainly come to see you, when I have time.’

(117) Nǐ yíding yào jìde lái zhǎo wǒ,
 2SG certainly must remember come fetch me
 *(zài) nǐ yùdào kùnnán de shíhòu.
 at 2SG meet difficulties SUB time

‘Do remember to call upon me, when you encounter difficulties.’

- (118) Dàijīa dōu chūqù-le, *(zài) wǒ huí jiā de shíhòu.
 everybody all go.out-PERF at 1SG return home SUB time
 ‘Everybody had gone out, when I came home.’

Concerning sentence-final PPs with a PostP-complement, headed by *yǐqián* ‘before’, *yǐhòu* ‘after’ or *yǐlái* ‘since’, they have the status of added-on afterthoughts, and no special emphasis on the sentence-initial clause is observed:

- (119) a. (Zìcóng) tā rù xué yǐlái
 since 3SG enter school since
 fùmǔ měitiān gěi tā dǎ diànhuà.
 parents every.day to 3SG make call
 ‘Since she got enrolled at university, her parents call her every day.’

- b. Fùmǔ měitiān gěi tā dǎ diànhuà,
 parents every.day to 3SG make call
 *(zìcóng) tā rù xué yǐlái.
 from 3SG enter school since
 ‘Since she got enrolled at university, her parents call her every day.’

- (120) a. (Zài) tā rù xué {yǐhòu/yǐqián},
 at 3SG enter school after / before
 fùmǔ měitiān gěi tā dǎ diànhuà.
 parents every.day to 3SG make call
 ‘After/before she got enrolled at the university, her parents called her every day.’

- b. Fùmǔ měitiān gěi tā dǎ diànhuà.
 parents every.day to 3SG make call
 *(zài) tā rù xué yǐhòu/yǐqián.
 at 3SG enter school after / before
 ‘After/before she got enrolled university, her parents called her every day.’

Note that the preposition *zìcóng* ‘since’ and *zài* ‘at’ is obligatory when temporal adjuncts are in the sentence-final afterthought position.

3.6. Interim summary

In the preceding sections, we have examined in detail different types of adverbial clauses: conditionals, causal clauses, inferential clauses, concessive clauses and temporal adjuncts. While for all these types the sentence-initial position is the default order, the sentence-final position is likewise possible. Based on the syntactic constraints holding for adverbial clauses in sentence-final position, we have concluded that neither position can be obtained from the other by movement; instead, an adverbial clause is directly merged in either the sentence-initial or the sentence-final position.

Concerning the status of the “conjunctions”, we have observed their categorial heterogeneity; section 6 will address this issue and provide precise case-for-case analyses.

3.7. Combinations of adverbial clauses

To complete our overview, this section briefly turns to cases where several adverbial clauses of different types co-occur in the position preceding the main clause:

- (121) Rúguǒ Zhāngsān zhīdào dehuà,
 if Zhangsan know C(-root)
 jíshǐ méi yǒu shíjiān, tā yě huì qù de.
 even.if NEG have time 3SG also will go DE
 ‘If Zhangsan had known, even though he didn’t have time, he would have come.’

In (121), there are two adverbial clauses, the conditional and the concessive preceding the main clause. The adverb *yě* ‘also’ in the main clause correlates with the concessive clause (*jíshǐ* ‘even if’) not with the conditional clause (*rúguǒ* ‘if’). Interestingly, if the order is inverted, the adverb in the main clause still correlates with the concessive clause, as shown in (122). This seems to suggest that a concessive clause is more prominent than a co-occurring conditional clause..

- (122) Jíshǐ Zhāngsān méi yǒu shíjiān,
 even Zhangsan NEG have time
 rúguǒ zhīdào dehuà, tā yě huì qù de.
 if know C(-root) 3SG also will go DE
 ‘Even if Zhangsan didn’t have time, had he known, he would have come.’

We will not pursue this semantic issue here, but briefly address the syntactic aspect of the above examples.

As illustrated in (123) and (124), two different analyses are possible. Within the topic scenario (cf. (123)) where adverbial clauses are treated as sentential topics hosted by SpecTopP, we have two recursive TopPs, the higher one hosting the conditional clause and the lower one the concessive clause. This multiple topic configuration also allows for the opposite order: concessive clause > conditional clause.

- (123) [_{TopP1} [_{cond.cl.} Rúguǒ Zhāngsān zhīdào dehuà],
 if Zhangsan know C(-root)
 [_{Top1}’ [_{TopP2} [_{concess.cl.} jíshǐ méi yǒu shíjiān],
 even.if NEG have time
 [_{Top2}’ [_{TP main cl.} tā yě huì qù de]]]]].
 3SG also will go DE
 ‘If Zhangsan had known, even though he didn’t have time, he would have come.’

In the adjunction scenario (cf. (124)), adverbial clauses do not have the status of the topics and are analyzed as ordinary adjuncts to the TP. Again, multiple adjunction gives rise to the configuration in (124).

- (124) [_{TP} [_{cond.cl.} Rúguǒ Zhāngsān zhīdào dehuà],
 if Zhangsan know C(-root)
 [_{TP} [_{concess.cl.} jíshǐ méi yǒu shíjiān],
 even.if NEG have time
 [_{TP main cl.} tā yě huì qù de]]].
 3SG also will go DE
 ‘If Zhangsan had known, even though he didn’t have time, he would have come.’

Like the topic analysis, the adjunction analysis can also capture the alternative order ‘concessive clause > conditional clause’ in (122).

(125) illustrates another combination of a conditional and a concessive clause.

- (125) Jìshǐ nǐ zuìhòu bù néng lái,
 even.if 2sg in.the.end NEG can come
 zhǐyào nǐ tíqián gēn wǒmen shuō yī-shēng,
 as.long.as 2SG in.advance with 1PL tell one-sound
 yě bù huì yǒu wèntí de.
 also neg will have problem DE
 ‘Even if in the end you cannot come, as long as you tell us in advance,
 there will be no problem.’

Interestingly enough, in both examples (122) and (125), the conditional clause can also occupy the sentence-final position (cf. (126-127) below).

- (126) Jìshǐ Zhāngsān méi yǒu shíjiān,
 even.if Zhangsan NEG have time
 tā yě huì qù de,
 3SG also will go DE
 dāngrán, rúguǒ tā shìxiān zhīdào dehuà.
 of.course if 3SG beforehand know C(-root)
 ‘Even if Zhangsan didn’t have time, he would have come, of course,
 if he had known beforehand.’

- (127) Jìshǐ nǐ zuìhòu bù néng lái,
 even.if 2sg in.the.end neg can come
 yě bù huì yǒu wèntí de,
 also neg will have problem DE
 zhǐyào nǐ tíqián gēn wǒmen shuō yī shēng.
 as.long.as 2sg in.advance with 1pl tell 1 sound
 ‘Even if in the end you cannot come, there will be no problem,
 as long as you tell us in advance.’

As already observed for conditional clauses in sentence-final position in complex sentences with a single adverbial clause (cf. section 3.1.2 above), here as well, the conditional clause draws the attention of the hearer by providing the additional condition.

Sentence (128) illustrates a different type of complex sentence with more than one adverbial clause, given that the complex sentence contains another complex sentence here:

- (128) Shìqíng_i běnshēn suírán *pro*_i bù shì zhème dà de shìqíng,
 matter in.itself although NEG be so big SUB matter
 dànshì [yīnwèi *pro*_i dàiyǒu pǔbiànxìng,
 but because bear universality
 suǒyǐ *pro*_i háishì zhíde zhòngshì].
 therefore still be.worth take.serious
 ‘The matter in itself, although it is not such a big matter, but because it bears
 a universal character, therefore it should still be taken serious.’
 (Lü Shuxiang 2000: 517)

(128) begins with a concessive clause introduced by *suīrán* ‘although’; the following main clause starting with *dànshì* ‘but’ in turn contains another complex sentence consisting of a causal clause (*yīnwèi* ‘because’) and the corresponding *suǒyǐ* ‘therefore’ main clause. As a consequence, the order of the adverbial clauses cannot be changed.

Crucially, in (128) the three null subjects are all co-indexed with the sentence-initial topic DP *shìqíng* ‘matter’, in order to ensure that the “comment” part is “about”, i.e. related to the topic DP. Another noteworthy feature of (128) is that the conjunction itself is not sentence-initial, but preceded by a DP. As we will see in the next section, this case may give rise to several different parsings.

4. Complex cases: DP > conjunction...

- 4.1. DP conjunction Ø..., [main clause DP ...]
- 4.2. DP conjunction Ø..., [main clause Ø ...]
- 4.3. DP conjunction DP..., [main clause Ø ...]
- 4.4. DP conjunction DP..., [main clause DP...]
- 4.5 Interim summary

So far, we have discussed the cases where the adverbial clause either precedes or follows the main clause. We have concentrated on providing “simple”, “what you see is what you get” cases where the limits of the adverbial clause and the main clause domain can be “read off” the surface. This is the case when the conjunction is in the sentence-initial position and when both the adverbial and the main clause each contain an explicit subject, which may be co-indexed (cf. (129b)).

(129) a. [Adv.cl Conj subject-DP_i ...], [Main cl subject-DP_j ...]
 Suīrán tā bù tóngyì wǒ hái shì yào qù.
 although 3SG NEG agree 1SG still will go
 ‘Although he does not approve, I still will go.’

b. [Adv.cl Conj subject DP_i ...], [Main cl subject DP_i ...]
 Yīnwèi tāi xiǎng qù, suǒyǐ tāi jiù qù-le.
 because 3SG want go therefore 3SG then go-PERF
 ‘Because he wanted to go there, so he went there.’

Against this backdrop, we now turn to complex sentences where a straightforward analysis is not always available, because the same surface string may give rise to different parsings. This is the case for complex sentences where a DP appears in the sentence-initial position, i.e. *preceding* the conjunction, and not following it, as was the case in the data discussed so far.

The main issue to be addressed is the position of this sentence-initial DP: is it contained within the adverbial clause or is it part of the matrix domain? If the DP belongs to the matrix domain, has it been merged *in situ* or moved there? The availability of different parsings depends on quite a number of factors: (i) (non-) coindexation of the subjects in the adverbial and the main clause; (ii) presence/absence of null subjects and (iii) last - but not least - the still to be determined categorial status of conjunctions (complementizers vs adverbs). To systematically spell out these different options and to demonstrate how these three factors interact with each other is precisely the task of this section. As far as we can see, the co-existence of these numerous analytical possibilities has so far not been systematically pursued

in the literature. Importantly, we will show throughout this article that these analytical options are to be maintained in parallel.

In section 4.1, we first examine the case where besides the DP preceding the conjunction, there is only an overt (pronominal) subject in the main clause, but no DP to the right of the conjunction in the adverbial clause:

(130) DP conjunction \emptyset ..., [main clause DP]

Zhāngsān rúguǒ è -le,
 Zhangsan if be.hungry-PERF
 [tā huì qù mǎi dōngxī de].
 3SG will go buy thing DE
 ‘If Zhangsan is hungry, he will go and buy something.’

In section 4.2, the conjunction is again preceded by a DP and there is no DP in the adverbial clause to the right of the conjunction; in addition, the main clause lacks an explicit subject as well. We therefore need to determine whether this sentence-initial DP is to be construed as the adverbial clause subject, as the matrix subject or rather as the matrix topic.

(131) DP conjunction \emptyset ..., [main clause \emptyset ]

Zhāngsān rúguǒ è-le,
 Zhangsan if be.hungry.Perf
 [\emptyset huì qù mǎi dōngxī de].
 will go buy thing DE
 ‘If Zhangsan is hungry, he will go and buy something.’

In section 4.3, we discuss the case where a DP again precedes the conjunction, and where in addition the adverbial clause has an explicit subject following the conjunction. The issue to be addressed is whether the main clause subject, which is implicit, is either a *pro* bound by the sentence-initial DP or rather the trace/copy left after the extraction of the DP to the sentence-initial position.

(132) DP conjunction DP..., [main clause \emptyset ]

Zhāngsān rúguǒ tā zhēnde xiǎng qù dehuà,
 Zhangsan if 3SG really want go C(-root)
 [\emptyset kěndìng huì qù de].
 certainly will go DE
 ‘If Zhangsan really wants to go, then he will go for sure.’

In section 4.4 finally, we turn to the case where both the adverbial clause and the main clause have an explicit subject; in addition, there is also the DP preceding the conjunction. We therefore need to determine whether this sentence-initial DP is a (base-generated) topic situated in the adverbial clause or a matrix topic:

(133) DP conjunction DP..., [main clause DP]

Zhāngsān rúguǒ tā è-le,
 Zhangsan if 3SG be.hungry-PERF

[tā huì qù mǎi dōngxi de].
 3SG will go buy thing DE
 ‘If Zhangsan really wants to go, then he will go for sure.’

These four different cases are summarized in the table below.

(134)

	DP	Adverbial Clause		Main Clause
		Conjunction	Subject 1	Subject 2
4.1	yes		no	yes
4.2	yes		no	no
4.3	yes		yes	no
4.4	yes	yes	yes	

4.1. DP conjunction Ø..., [main clause DP_{pron}]

In this section, we discuss the case where besides the DP preceding the conjunction, there is only an overt (pronominal) subject in the main clause, but none in the adverbial clause to the right of the conjunction.

(135) Zhāngsān rúguǒ è-le,
 Zhangsan if be.hungry-PERF
 [tā huì qù mǎi dōngxi de].
 3SG will go buy thing DE
 ‘If Zhangsan is hungry, he will go and buy something.’

Given that the main clause has an explicit subject, i.e. *tā* ‘he’, it is excluded for *Zhāngsān* to have been extracted from the main clause. This leaves two options.

Option 1: *Zhāngsān* is the matrix topic

In the first option, *Zhāngsān* is an in-situ matrix topic that controls the subject *pro* within the adverbial clause and is co-indexed with the pronoun *ta* ‘s/he’ in the main clause. In this case, the matrix topic *Zhāngsān* can be separated from the rest of the sentence by an intonational pause, represented by a comma in (136):

(136) Zhāngsān, rúguǒ è -le, ...
 Zhangsan if be.hungry-PERF
 ‘If Zhangsan is hungry, ...’

For the parsing of *Zhāngsān* as a matrix topic, the categorial status of *rúguǒ*, C vs sentential adverb, is not relevant. In (137a), *rúguǒ* is analysed as a C-head selecting a TP complement whose subject *pro* is coindexed with the matrix topic DP. In addition, *rúguǒ* ‘if’ can also be analysed as a sentential adverb, which can either precede (137b) or follow the subject (137c).

(137) a. *rúguǒ*: C

[_{matrixTopP} Zhāngsān_i [[_{adv.cl.} [C° rúguǒ]
 Zhangsan if
 [TP *pro*_i.....]] [_{main cl.TP} tā_i]]]
 3SG

b. *rúguǒ*: sentential adverb

[_{matrixTopP} Zhāngsān_i [[_{adv.cl.} [TP rúguǒ [TP *pro*_i]]]]

(141) Extraction:

[_{matrix cl} [_{adv.cl.} Zhāngsān [rúguǒ [_{TP} Zhāngsān]]]
 Zhangsan if
 [_{main cl.TP} tāi]]
 3SG

Let us summarize Option 1 and Option (2-AB). When the conjunction is analyzed as an adverb, a DP *preceding* the conjunction in a complex sentence where the main clause has an explicit subject, either occupies the matrix topic position (cf. 137b, c) or the SpecTP subject position within the adverbial clause (cf. 138). Under a C analysis of the conjunction, the sentence-initial DP can be either analyzed as matrix topic (cf. 137a) or as the topicalized subject of the adverbial clause (cf. 140, 141).

Adopting the GCR (cf. 142), no extraction is involved; instead the topic DP in the matrix clause or in the adverbial clause is base-generated and controls the subject *pro* inside the adverbial clause. By contrast, a derivation via movement (cf. 143) relies on the possibility of A-bar extraction from sentences containing non-episodic predicates. The alternative positions for the DP preceding the conjunction are indicated by wavy brackets.

(142) GCR:

[_{MatrixTopP} {DP₁} [_{Adv. cl.} {DP₁} Conj *pro*₁ + *vP*], [_{Main clause-TP} subject-DP₂ + *vP*]]

(143) Extraction:

[_{MatrixTopP} {DP₁} [_{Adv. cl.} {DP₁} Conj \overline{DP}_+ + *vP*], [_{Main clause-TP} subject-DP₂ + *vP*]]

The derivation via the GCR and the derivation via A-bar extraction from sentences containing non-episodic predicates will be compared in section 6 below.

4.2. DP conjunction Ø..., [_{main clause} Ø]

The configuration examined here is the same as in section 4.1 above, *modulo* the difference that in (144) the main clause lacks an explicit subject as well:

- (144) Zhāngsān rúguǒ è -le,
 Zhangsan if be.hungry-PERF
 [huì qù mǎi dōngxi de].
 will go buy thing DE
 ‘If Zhangsan is hungry, he will go and buy something.’

- (ii) Les gâteaux, je (*les) ai mangés à midi.
 the.PL cake 1SG them have eaten.PL at noon
 ‘The cakes, I ate (them) at lunch.’

While the left-dislocated object of an activity verb must be related to a resumptive clitic pronoun within TP, this is not the case for psych predicates such as ‘adore’.

Matters seem more complex in Chinese where in addition to non-episodic predicates, complex episodic predicates containing an expression of frequency also seem to be transparent to A-bar extraction, for reasons still not understood:

- (iii) [Lisi [_{CP} rúguǒ Zhāngsān mà -le jǐ shēng Lisi]
 Lisi if Zhangsan scold-PERF several sound Lisi
 [_{TP} Xiǎohóng jiù huì hěn bùgāoxìng]
 Xiaohong then will very unhappy
 ‘Lisi, if Zhangsan scolds [him] for a while, then Xiaohong will be very unhappy.’

As for the configuration ‘DP conjunction \emptyset ..., [main clause DP_{pron}]’ in (135) above, the first option to be considered here is that the sentence-initial DP is base-generated in matrix TopP and binds the null subjects in the adverbial clause and the main clause via the GCR; again, as observed above (cf. 136), this matrix topic can be separated from the rest of the sentence by an intonational pause, indicated by the comma:

Option 1: *Zhāngsān* as in-situ matrix topic

(145) [_{matrixTopP} *Zhāngsān*(,) [_{adv.cl.} *rúguǒ* *pro*_i.....] [_{main cl.}TP *pro*_i]]
 Zhangsan if

As far as we can see, both null subjects must be coindexed with the matrix topic DP; in fact, this is the configuration we have briefly alluded to when discussing example (128) (repeated here in (146)) in section 3.6 above, where the complex sentence contains another complex sentence:

(146) *Shìqíng_i běnshēn suírán* *pro_i* *bù shì zhème dà de shìqíng*,
 matter in.itself although NEG be so big SUB matter
 dànshì [*yīnwèi* *pro_i* *dàiyǒu pǔbiànxìng*,
 but because bear universality
 suǒyǐ *pro_i* *háishì zhíde zhòngshì*].
 therefore still be.worth take.serious
 ‘The matter in itself, although it is not such a big matter, but because it bears
 a universal character, therefore it should still be taken serious.’
 (Lü Shuxiang 2000: 517)

Option 2:

(147) a. [_{MatrixTopP} DP₁ [_{Adv.cl.} Conj \overline{DP}_+ + *vP*], [_{Main cl.} *pro*₁ + *vP*]]
 ↑ _____|

b. [_{Adv.cl.} [_{TopP} DP₁ [_{Adv.cl.} Conj \overline{DP}_+ + *vP*]]], [_{Main cl.} *pro*₁ + *vP*]]
 ↑ _____|

In the second option, the sentence-initial DP is construed as the extracted adverbial clause subject, moved to either matrix TopP (cf. (147a)) or to the topic position within the adverbial clause (cf. (147b)) (assuming for the moment that the adverbial clause projects up to CP and contains a left periphery). As outlined in the preceding section, this extraction is subject to the constraint in terms of non-episodic predicates. (In the case of episodic eventualities, the DP position in (147b) can be accommodated by the GCR, i.e. the adverbial clause then contains a subject *pro* controlled by the DP.)

Option 3:

(148) [_{Matrix TopP} DP₁ [_{Adv.cl.} Conj *pro*₁ + *vP*], [_{Main cl.} \overline{DP}_1 + *vP*]]
 ↑ _____|

In the third option, the sentence-initial DP has been extracted from the main clause and its landing site must therefore be in the matrix TopP above the adverbial clause.

Option 4:

In the fourth option, the sentence-initial DP occupies the canonical subject position SpecTP in a *simple* sentence, with the adverbial clause adjoined to vP (on a par with non-clausal adverbs); as a result, there is *no* second null subject:

(149) [TP DP₁ [vP [Adv.cl. Conj *pro*₁ + vP] vP]]

This structure will be discussed more systematically in section 5 below, which examines adverbial clauses merged below the subject.

Option 5:

Finally, if *ruguo* ‘if’ is assigned adverb status, then *Zhangsan* can be analyzed as occupying the SpecTP subject position within the adverbial clause (cf. section 6 below for the categorial status of conjunctions). Accordingly, there is only one null subject.

(150) [matrix cl. [adv.cl.TP Zhāngsān_i rúguǒ] [main cl.TP *pro*_i]]
Zhangsan if

To summarize, the sentence-initial DP can be construed as a base-generated matrix topic (cf. (145)), as an extracted adverbial clause subject (cf. (147a-b)) or as the extracted main clause subject (cf. (148)), as the subject in SpecTP of a *simple* sentence (cf. (149)) or as the subject in SpecTP of an adverbial clause (cf. (150)).

4.3. DP conjunction DP_{pron}..., [main clause Ø]

This section now turns to the case with a DP preceding and following the conjunction, but where there is no explicit subject in the main clause itself.

(151) Zhāngsān rúguǒ tā zhēnde xiǎng qù dehuà,
Zhangsan if 3SG really want go C(-root)
[Ø kěndìng huì qù de].
certainly will go DE
‘If Zhangsan really wants to go, then he will go for sure.’

As before, matrix TopP is a possible position for the sentence-initial DP, which is either base-generated here (cf. (152a)) or extracted from the main clause (cf. (152b)). In both cases, the DP can be separated from the rest of the sentence by a prosodic break:

Option 1:

(152) a. [Matrix TopP DP_i [[Adv.cl. Conj *tā*_i + vP]_(s) [Main cl. *pro*_i + vP]]]

b. [Matrix TopP DP_i [[Adv.cl. Conj *tā*_i + vP]_(s) [Main cl. $\overline{\text{DP}}_i$ + vP]]]

In both cases, the pronominal subject *tā* ‘s/he’ inside the adverbial must be coindexed with the topic DP; in addition the in-situ matrix topic in (152a) necessarily binds the *pro* in the main clause, given the requirement that the “comment” part must be related to the topic.

In the second parsing option, the sentence-initial DP occupies the subject position SpecTP in a simple sentence, with the adverbial clause adjoined to vP (a structure to be examined more closely in section 5 below).

Option 2

(153) [TP DP_i [vP [Adv. cl. Conj *tā* + vP] vP]]

This is the same configuration as in (149) above, *modulo* the presence of an overt pronominal subject (*tā* ‘s/he’) in (153) vs the null subject in (149). Like the latter, the adverbial clause subject *tā* ‘s/he’ in (153) seems to be necessarily coindexed with the matrix subject as well.

4.4. DP conjunction DP_{pron...}, [main clause DP_{pron...}]

In addition to the DP preceding the conjunction, both the adverbial clause and the main clause have an explicit (pronominal) subject DP.

(154) a. Zhāngsān rúguǒ *tā* è -le,
Zhangsan if 3SG be.hungry-PERF
[*tā* huì qù mǎi dōngxi de].
3SG will go buy thing DE
‘If Zhangsan is hungry, then he will go and buy something.’

b. Zhāngsān rúguǒ *tā* zhēnde xiǎng qù dehuà,
Zhangsan if 3SG really want go C(-root)
[*tā* kěndìng huì qù de].
3SG certainly will go DE
‘If Zhangsan really wants to go, then he will go for sure.’

Accordingly, there are no potential extraction sites available and the sentence-initial DP must be analyzed as a base-generated topic, either in the matrix sentence or in the adverbial clause.

(155) a. [MatrixTopP DP_i [[Adv.cl. Conj *tā* + vP], [Main cl. *tā* vP]]]

b. [Adv.cl. [TopP DP_i [Adv.cl. Conj *tā* + vP]]], [Main cl. *tā* vP]

Note that the analysis in (155b) presupposes complementizer status for *rúguǒ* ‘if’. If *rúguǒ* ‘if’ is analyzed as an adverb, then the sentence-initial *Zhāngsān* is parsed as occupying SpecTP inside the adverbial clause. In this scenario, the presence of *tā* ‘he’ to the right of the adverb *rúguǒ* ‘if’ would become unacceptable, simply because the adverbial clause cannot have a second subject, i.e. *ta* ‘he’:

(156) *[Adv.cl.TP DP₁ Conj=adverb *tā*₁ + vP], [Main cl. subject₁ vP]

The very acceptability of (154a-b) and the associated structures in (155a-b) cast doubt on the adverbial analysis of *rúguǒ* ‘if’. In fact, section 6 below will provide arguments in favor of the C analysis of *rúguǒ* ‘if’.

4.5 Interim summary

This section has discussed complex sentences where a DP appears in the sentence-initial position *preceding* the conjunction. A detailed examination was called for here, because one and the same surface string may give rise to different parsings, depending on the presence/absence of explicit subjects in the adverbial and in the main clause. Furthermore, the status to be assigned to the conjunctions plays an important role here as well and increases the number of the parsing alternatives.

5. Adverbial clauses merged below the matrix subject

This section turns to adverbial clauses occurring to the right of the matrix subject. In this case, adverbial clauses are on a par with adverbs and must be merged in a projection lower than TP. Note that T in Chinese always remains empty (cf. Ernst 1994 among others). As we will see, the possible positions within the extended verbal projection depend on the type of the adverbial clause; while conditional and causal clauses as well as temporal adjuncts are acceptable below the matrix subject, this position is excluded for concessive and inferential clauses. For the former group, we observe a further subdivision concerning their (un)acceptability in the position below *auxiliaries*.

5.1 Overview of the different types of adverbial clauses acceptable below the subject

Conditional clauses introduced by *jìshǐ* ‘even if’ are acceptable in a preverbal position to the right of the subject, either above (cf. 157) or below auxiliaries (cf. 158).

- (157) [TP Wǒ [T° Ø] [_{cond.cl.} jìshǐ tā bù lái]
 1SG even.if 3SG NEG come
 [_{vP} yě huì yígèrén qù]].
 also will alone go
 ‘Even if he doesn’t come, I’ll go on my own.’

- (158) [TP Nǐ [T° Ø] [_{vP} wèishénme huì
 2SG why will
 [[jìshǐ jiàng xīn] yě yào tiào cáo]]]?
 even.if decrease salary also want jump trough
 ‘Why do you want to change jobs, even though the salary will be less?’

Conditional clauses introduced by *rúguǒ* ‘if’, however, can only be merged above the auxiliary (cf. 159) (also cf. C.-C. Jane Tang 1990: 96).

- (159) [TP Wǒ [T° Ø] [_{vP} {*huì} [_{cond.cl.} rúguǒ tā bù lái]
 1SG will if 3SG NEG come
 jiù {huì} fā dà píqi]]].
 then will issue big temperament
 ‘If he doesn’t come, I will lose my temper.’

By contrast, causal clauses can occur either above or below auxiliaries. (cf. C.-C. Jane Tang 1990, ch. 3.2), Lin & Tang (1993):

- (160) a. [TP Tā [T° Ø] [_{vP} [_{causal.cl.} yīnwèi Lǐsì bù lái]
 3SG because Lisi NEG come
 huì fēicháng shāngxīn]].
 will very sad
 ‘He will be very sad because Lisi does not come.’
- b. [TP Tā [T° Ø] [_{vP} huì [_{causal.cl.} yīnwèi Lǐsì bù lái]
 3SG will because Lisi NEG come
 fēicháng shāngxīn]].
 very sad
 ‘He will be very sad because Lisi does not come.’

(161) a. [TP Dàolù [T° Ø] [vP huì [causal.cl. yīnwèi xià-le
road will because fall-PERF
dà xuě] bèi fēngsuǒ]].
big snow PASS close.down
'The road will be closed down, because it has snowed heavily.'

b. [TP Dàolù [T° Ø] [vP [causal.cl. yīnwèi xià-le dà xuě]
road because fall-PERF big snow
huì bèi fēngsuǒ]].
will PASS close.down
'The road will be closed down, because it has snowed heavily.'

While for reasons of space we cannot examine the semantic differences associated with the different positions above and below auxiliaries, the observations made by C.-C. Jane Tang (1990: 94-95, footnote 26) and Lin & Tang (1993: 64) are worth mentioning. Commenting on (162) below where the *yīnwèi* 'because' clause follows the negated auxiliary, Lin & Tang (1993: 64) emphasize the fact that the *yīnwèi* 'because' clause falls within the scope of negation:

(162) Nǐ bù yīnggāi/kěyǐ [yīnwèi Lìsì shì ge míngrén]
2SG NEG should /may because Lisi be CL celebrity
suǒyǐ jiù ràng tā miǎnfèi rùchǎng
therefore then let 3SG free.of.charge enter
'You should/may not let Lisi enter free of charge because he is a celebrity.'
(Lin & Tang 1993: 64; (17a); slightly changed glosses and translation;
bracketing added)²⁸

In Chinese there is thus no scope ambiguity as observed in the English translation. Accordingly, the scope relation changes when the *yīnwèi* 'because' clause precedes the negated auxiliary (be it to the right or the left of the subject) (cf. C.-C. Jane Tang (1990: 94-95, footnote 26).

(163) {Nǐ} [yīnwèi Lìsì shì ge míngrén] {nǐ} jiù bù
2SG because Lisi be CL celebrity 2SG then NEG
yīnggāi/kěyǐ ràng tā miǎnfèi rùchǎng.
should /may let 3SG free.of.charge enter
'Because he is a celebrity, you should/may not let Lisi enter free of charge.'

This set of facts confirms the stand defended in this article that adverbial clauses in Chinese are directly merged in their respective surface positions and not moved there.

Let us now go back to the syntactic distribution of adverbial clauses. Unlike conditional and causal clauses, concessive clauses are unacceptable below the matrix subject (also cf. Wei & Li, Part 1, section 3.2). Note that the same concessive clause is fully acceptable above the matrix subject (also cf. section 3.4 above).

(164) a. *Wǒ [suīrán tā méi yǒu qián],
1SG although he not have money

²⁸ Why notwithstanding these facts Lin & Tang (1993: 65), following C.-C. Jane Tang (1990: 90), insist on C as "licensing head" for reason clauses remains mysterious. Furthermore, unlike their representation, *suǒyǐ* 'therefore' is unacceptable here.

háishì yào gēn tā jié hūn.
but want with him join marriage

- b. Suīrán tā méi yǒu qián,
although he not have money
wǒ háishì yào gēn tā jié hūn.
1SG but want with him join marriage
'Although he has no money, I (nevertheless) still want to marry him.'

(165) a. *Tā [suīrán zhèng zài xià dà yǔ],
3SG although just PROGR fall big rain
háishì chūqù pǎo bù le.
but go.out run step SFP

- b. Suīrán zhèng zài xià dà yǔ,
although just PROGR fall big rain
tā háishì chūqù pǎo bù le.
3SG but go.out run step SFP
'Although it is raining heavily right now, he still went out for a run.'

The position below the matrix subject is likewise excluded for inferential clauses, in contrast to the pre-subject position:

(166) a. *Wǒ [jìrán nǐ yào qù] yě bù fǎnduì.
1SG since 2sg want go also NEG be.against

- b. [Jìrán nǐ yào qù], wǒ yě bù fǎnduì.
since 2SG want go 1SG also NEG be.against
'Since you want to go anyway, I will not oppose you.'

Temporal adjuncts, finally, can occur below the matrix subject. We first illustrate this for temporal DPs headed by *shíhòu* 'time':

(167) a. Tā [DP xià yǔ de shíhòu] xǐhuān chàng gē.
he fall rain SUB time like sing song
'He likes singing when it rains.'

- b. Tā [DP tiān hēi de shíhòu] cái huí jiā.
he sky dark SUB time only return home
'He only goes home when it gets dark.'

c. Tā [DP {kèrén lái} / {lái kèrén} de shíhòu]
he guest come come guest SUB time
xǐhuān duǒ zài fángjiān lǐ.
like hide at room in
'He likes to hide in his room when there are guests.'

In (167b-c), the relative clause modifying *shíhòu* 'time' contains an explicit subject, as in (168) below. Against this backdrop, the unacceptability of (168) without the preposition *zài* 'at' is unexpected:

- (168) Tā [PP *(zài) [DP wǒ shàng bān de shíhòu]]
 he at 1sg attend work DE time
 qù-le yóujú.
 go-Perf post.office
 ‘He went to the post office while I was working.’

Visibly, it is the contiguity of the subject pronoun *tā* ‘he’ in the matrix clause and the subject pronoun *wǒ* ‘I’ in the relative clause modifying *shíhòu* ‘time’ that leads to processing difficulties. This can be remedied by inserting the preposition *zài* ‘at’ (as in (168)) or an adverb, *zuótiān* ‘yesterday’, thus separating the two subjects at PF:

- (169) Tā {zuótiān} [DP {zuótiān} wǒ shàng bān
 he yesterday yesterday 1sg attend work
 de shíhòu] qù-le yóujú.
 DE time go-Perf post.office
 ‘He went to the post office while I was working yesterday.’

Note that the adverb *zuótiān* ‘yesterday’ can be semantically construed either with the matrix domain or with the relative clause, as indicated by enclosing the two instances of *zuótiān* between wavy brackets.

Like DPs headed by *shíhòu* ‘time’ and PPs (headed by *zài* ‘at’), temporal PostPs (headed by *yǐqián* ‘before’, *yǐhòu* ‘after’ and *yǐlái* ‘since’) are also acceptable in the preverbal position below the subject.

- (170) a. Tā [PostP tiān hēi yǐqián/yǐhòu] kěndìng huì huí jiā.
 he sky dark before/after certainly will return home
 ‘He will certainly go home before/after it gets dark.’
- b. Tā [PostP [èrcì-shìjiè-dàzhàn kāishǐ] yǐlái]
 he World.War.II start since
 jiù méi huí -guò jiā.
 then NEG return-EXP home
 ‘He has not returned home since World War II started.’

We again observe processing difficulties when the matrix clause subject *tā* is not separated by an intervening element from the [+human] subject of the clause embedded in the adjunct PostP:

- (171) a. Tā [*(zài) wǒ rù xué yǐqián] jiù bì yè le.
 3SG at 1SG enter school before then finish studies SFP
 ‘He had already graduated before I entered school.’
- b. Tā [*(zài) wǒ rù xué yǐhòu] cái bì yè.
 3SG at 1SG enter school after only finish studies
 ‘He only graduated after I had entered school.’
- c. Tā [*(zìcóng) wǒ rù xué yǐlái]
 3SG from 1SG enter school since
 jiù méi gēn wo shuō-guò huà.

then NEG with 1SG say -EXP word
 ‘Since I entered school, he has not spoken to me.’

Against this backdrop, the observation made by Liu Feng-hsi (1981) can now be accounted for rather straightforwardly:

(172) a. [Zhāngsān_i zǒu -le yǐhòu] [(^{*}tā_i) jiù méi huílái-guo]
 Zhangsan leave-PERF after 3SG then NEG return-EXP
 ‘After Zhangsan had left, he didn’t come back.’

b. [_{MatrixTP} Zhāngsān_i [_{vP} [_{PostP} [*pro*_i zǒu -le] yǐhòu]
 Zhangsan leave-PERF after
 [_{vP} jiù méi huílái-guo]]]
 then NEG return-EXP
 ‘After Zhangsan had left, he didn’t come back.’

c. Yīnwèi Lǐsì hěn máng, suǒyǐ (tā_i) bù néng lái kàn nǐ
 because Lisi very busy so 3SG NEG can come see 2SG
 ‘Because Lisi is very busy, therefore he cannot come to see you.’

Liu Feng-hsi (1981) notes the difference above when trying to come to terms with the licensing condition of “zero anaphora”, i.e. co-referential null subjects: she is puzzled by the unacceptability of *tā* in (172a), in contrast to its optionality in (172c) (also cf. Harlow & Cullen 1992). However, this “puzzle” is due to a simple misparsing, which can sometimes still be found in the literature: instead of realizing that *Zhāngsān* is the matrix subject controlling a *pro* within the temporal adjunct PostP (cf. (172b)), *Zhāngsān* is misanalyzed as the subject of the clause embedded under the PostP (cf. (172a)).²⁹

So far, we have examined temporal DPs, PPs and PostPs. *Clausal* temporal adjuncts are likewise acceptable in the preverbal position below the subject. Note, though, that the same processing difficulties arise in the case of contiguous [+human] matrix clause subject and adverbial clause subject, as is the case in (173b):

(173) a. [TP Tā [_{Adv.cl.} chūntiān dào -le] cái huì lái].
 3SG spring arrive-PERF only will come
 ‘He will only come when spring time has arrived.’

b. # [TP Tā [_{Adv.cl.} nǐ dào -le] cái huì lái].
 3SG 2SG arrive-PERF only will come
 ‘He will only come when you have arrived.’

c. [TP Tā [_{Adv.cl.} yǒu kèrén lái] cái huì
 3SG have guest come only will

²⁹ Accordingly, when judged acceptable, a sentence such as (i) must be parsed differently, i.e. with *Zhāngsān* as matrix topic, and *tā* as subject of the main clause:

(i) [_{MatrixTopP} Zhāngsān_i [_{TP} [_{PostP} [*pro*_i zǒu -le] yǐhòu] [_{main.clause} tā_i jiù méi huílái-guo]]]
 Zhangsan leave-PERF after 3SG then NEG return-EXP
 ‘After Zhangsan had left, he didn’t come back.’

In (i), a pause is preferred after *Zhāngsān*, in contrast to the absence of a pause in the default analysis with *Zhāngsān* as matrix subject.

bǎ zuì hǎo de chá náchūlái].
 BA most good SUB tea take.out
 ‘He will only take out his best tea when there are guests.’

Recall from the discussion in section 3.5.3 above that these clauses seem to have a hybrid temporal-conditional nature.

To complete the overview of the different positions available for temporal adjuncts, we still need to examine whether temporal adjunct DPs, PPs and PostPs can also occur *below* auxiliaries. As illustrated in (174), temporal adjunct PPs (with a DP or PostP complement) can always occur below auxiliaries, whereas temporal adjunct DPs and PostPs are sometimes only marginally acceptable here (cf. Djamouri/Paul/Whitman 2013 for detailed discussion of the distribution of adjunct PostPs):

- (174) a. Tā zhǐ huì [PP?(zài) [DP wǒ shàng bān
 he only will at 1SG attend work
 de shíhòu] zuò jiāwù.
 SUB time do house.cleaning
 ‘He can only clean the house when I am at work.’
- b. Tā zhǐ gǎn [DP bù xià xuě de shíhòu] shàng shān.
 3SG only dare NEG fall snow SUB time ascend mountain
 ‘He only dares to go into the mountains when it is not snowing.’
- (175) a. Tā zhǐ huì [PP?(zài) [PostP [wǒ chū
 3SG only will at 1SG go.out
 mén] yǐhòu] zuò jiāwù.
 door after do house.cleaning
 ‘He can only clean the house after I have gone out.’
- b. Tāmen zhǐ huì [PostP [háizi bì yè] yǐhòu]
 3PL only will child finish studies after
 qù lǚxíng.
 go travel
 ‘They will only travel after the children have graduated.’

To summarize the somewhat complex case of temporal adjuncts below the matrix subject, let us leave temporal clauses aside and concentrate on temporal adjuncts in the form of DPs, PPs and PostPs. The latter show the same distribution as other adjunct XPs, i.e. they are acceptable not only in pre-subject position, but also following the subject, including the position below auxiliaries (*modulo* the somewhat constrained acceptability of temporal adjunct DPs and PostPs, which become fully acceptable when embedded in a PP). Note, though, the processing difficulties observed if this results in two contiguous [+human] DPs; this is the case when the matrix subject is adjacent with either the subject of the relative clause modifying *shíhòu* ‘time’ or the subject of the clause embedded in an adjunct PP or PostP .

5.2 Adverbial clauses with SFPs

This section discusses a new phenomenon, so far not taken into account, *viz* adverbial clauses including SFPs.³⁰ The relevant examples are provided below with two different parsing possibilities, implementing the adjunction scenario (cf. (176a-b)) and the topic scenario (cf. (177a-b)), respectively.

(176) a. [TP Wǒ [AttP [concessive.cl. jíshǐ tā bù lái] [Att° ba]]
 1SG even.if 3SG NEG come SFP
 [yě huì yí-gè-rén qù]].
 also will alone go
 ‘Even if he doesn’t come, I’ll go on my own.’

b. [TP Tā [AttP [cond.cl. rúguo xià yǔ] [Att° ne]]
 3SG if fall rain SFP
 [jiù kěndìng bù huì lái]].
 then surely NEG will come
 ‘He will surely not come if it rains.’

In (176a-b), the attitude heads *ba* and *ne* take a clausal complement and the resulting AttP in turn is adjoined to a position below T. In other words, adverbial clauses can project a CP with an overt C head realized by SFPs. The sentence-initial DP is the matrix subject located in SpecTP.

By contrast, in the topic scenario, two (recursive) TopPs are required, the first hosting the subject *wǒ* ‘I’ (either co-indexed with the main clause subject *pro* or extracted), and the second the concessive clause. It is the presence of *ne*, analyzed as topic head here, which indicates that *wǒ* ‘I’ and the concessive clause must both be located in the left periphery. Finally, a pause is required after each TopP:

(177) a. [Top1P Wǒ, [Top2P [concessive.cl. jíshǐ tā bù lái] [[Top2° ne],
 1SG even.if 3SG NEG come TOP
 [TP {*pro/wǒ*} yě huì yí-gè-rén qù]]].
 1SG also will alone go
 ‘Even if he doesn’t come, I’ll go on my own.’

b. [Top1P Tā, [Top2P [cond.cl. rúguo xià yǔ] [[Top2° ne]],
 3SG if fall rain TOP
 [TP {*pro/tā*} jiù kěndìng bù huì lái]].
 3SG then surely NEG will come
 ‘He will surely not come if it rains.’

Importantly, an adverbial clause of the size AttitudeP can in principle also be adjoined below auxiliaries, subject to variation among speakers.

(178) [TP Tā [T° Ø] [vP huì [cause.cl. yīnwèi Lǐsì bù
 3SG will because Lisi NEG
 lái] [Att° ne]] fēicháng shēng qì]].
 come SFP very produce air
 ‘Because Lisi does not come, he will be very angry.’

³⁰ Note that a special intonation is required here for the sentences (176a-b) to be acceptable. In (176a) for example, the SFP *ba* must not be pronounced with a falling intonation, but instead with a kind of suspension indicating the continuation of the sentence. In addition, the negation *bù* ‘not’ must be stressed.

5.3 Interim summary

This section has shown that not all adverbial clause types can be merged in the position below the matrix subject. While conditional and causal clauses as well as temporal adjuncts are acceptable here, this position is excluded for concessive and inferential clauses. In fact, looking beyond this article and incorporating results from Wei & Li (this volume, Part 1, sections 3.2 and 3.3), the acceptability *below* the matrix subject is one of the main criteria for identifying *central* adverbial clauses in Chinese, as opposed to *peripheral* adverbial clauses (in the sense of Haegeman 2002). For matrix TP-internal adverbial clauses, we observe a further subdivision concerning their (un)acceptability in the position *below* auxiliaries. Causal and conditional clauses are allowed below auxiliaries, whereas the situation is more complex for the distribution of temporal adjuncts, which has been shown to depend on the categorial status (clause, DP, PP or PostP).

When occurring below auxiliaries, adverbial clauses can only be analysed as adjuncts, given that the TP-internal topic position is higher than auxiliaries and negation. Furthermore, clauses are excluded from the sentence-internal TopP in general (cf. Paul 2002, 2005). In other words, two alternative analyses (SpecTopP or adjunction) are available only for adverbial clauses and temporal adjuncts in a post-subject position *above* and negation and auxiliaries.

6. The categorial status of so-called conjunctions and the internal structure of adverbial clauses

6.1 Conjunctions in adverbial clauses: Heads vs. adverbs OU Complementizers vs adverbs

6.2 Haegeman's (2002) dichotomy: central vs peripheral adverbial clauses

6.3. Status of conjunctions in the main clause

6.4 Interim summary

So far, we have indistinctly used *conjunction* as a cover term for the “linking” elements in both adverbial and main clauses. In this section now, we intend to provide a precise categorial analysis of conjunctions and to distinguish between heads, on the one hand, and adverbs, i.e. XPs, on the other. We also briefly discuss Haegeman's (2002) dichotomy between “central” and “peripheral” adverbial clauses, because it crucially involves argument extraction in the adverbial clause, which in turn is tightly linked to the status of conjunctions.

6.1 Conjunctions in adverbial clauses: Heads vs. adverbs

The potential analysis of conjunctions as adverbs goes back to Chao Yuen Ren (1968: 113, §2.12.6; 790, §8.4). It is based on the observation that positionwise, conjunctions pattern with sentential adverbs, because they can either precede the subject or occur in the canonical adverb position, i.e. below the subject and above the verb.³¹ Interestingly, Chao (1968: 114) points out that the pre- vs. post-subject position of conjunctions depends on whether adverbial clause and main clause have different subjects or not, and he states a preference for a post-subject position of conjunctions in the same-subject case illustrated in (179a) below, contrasting with the different-subjects case in (179b):

(179) a. Wǒ suīrán xiǎng fā cái,
1SG although want develop wealth

³¹ This post-subject preverbal position is the unique position available for the so-called “correlative” adverbs in the main clause, such as *jiù* ‘then’, *cái* ‘only’, *hái* ‘still’ *yě* ‘also’ etc., a point also highlighted by Chao Yuen Ren (1968: 114)

kěshì bù gǎn mào xiǎn.
 but NEG dare risk danger
 ‘I although want to get rich, yet don’t take to dare risks.’

- b. Suīrán wǒ xiǎng fā cái,
 although 1SG want develop wealth
 kěshì nǐ bù ràng wǒ.
 but 2SG NEG let 1SG
 ‘I although want to get rich, yet you don’t let me.’
 (Chao’s (1968: 114) translations, our transliterations and glosses)

(179a) corresponds to the case discussed in section 4.2. above: ‘DP conj \emptyset [main cl. \emptyset ...]’, where the analysis of the sentence-initial DP as matrix topic (controlling the null subjects in both the adverbial and the main clause) is the most straightforward one among the different available parsing possibilities:

- (180) [_{MatrixTopP} Wǒ_i [_{adv.cl.} suīrán *pro*_i xiǎng fā cái]
 1SG although want develop wealth
 [kěshì *pro*_i bù gǎn mào xiǎn]]
 but NEG dare risk danger
 ‘I although want to get rich, yet don’t take to dare risks.’

That is the reason why for conjunctions such as *rúguǒ* ‘if’, *suīrán* ‘although’ etc. we have so far pursued both possibilities in parallel, *viz.* complementizer and adverb status.³²

- (181) Zhāngsān rúguǒ è-le
 Zhangsan if hungry-Perf
 tā huì qù mǎi dōngxi de.
 3SG will go buy thing DE
 ‘If Zhangsan is hungry he will go buy something.’

This sentence can be accommodated by an analysis of *rúguǒ* ‘if’ as an adverb occupying the canonical preverbal position below the subject, as shown in (182):

- (182) [[_{TP} Zhāngsān [_{T°} \emptyset] [_{vP} rúguǒ è -le]]
 Zhangsan if hungry-PERF
 [_{Main cl.} tā huì qù mǎi dōngxi de]].
 3SG will go buy thing DE
 ‘If Zhangsan is hungry he will go buy something.’

By contrast, if *rúguǒ* ‘if’ is analysed as a complementizer, the grammaticality of (182) above is at first sight unexpected, because the adverbial clause subject *Zhangsan* occupies a position to the left of the complementizer. In other words, *Zhangsan* seems to have been extracted from a position within the adverbial clause, *i.e.* from a strong island (cf. (183)). However, as already mentioned in section 4.1 above, there exists an alternative acceptable parsing with *ruguo* ‘if’ as complementizer, as shown in (183b).

³² Recall that in the discussion of temporal adjuncts, we already identified *yílái* ‘since’, *yǐqián* ‘before’, *yǐhòu* ‘after’ as postpositions, and *zài* ‘at’, *dāng* ‘at’, *zìcóng* ‘from...on’ as prepositions, *i.e.* all these items are (adpositional) heads (cf. sections 3.5.1 and 3.5.2 above) and therefore not included in the discussion here.

(183) a. # Zhāngsān [CP [C° rúguǒ] [TP Zhāngsān è-le]]
 Zhangsan if Zhangsan hungry-Perf
 [Main cl. tā huì qù mǎi dōngxi de].
 3SG will go buy thing DE
 ‘If Zhangsan is hungry he will go buy something.’

b. [TopP Zhāngsān_i [CP [C° rúguǒ] [TP *pro*_i è -le]]]
 Zhangsan if hungry-Perf
 [Main cl. tā huì qù mǎi dōngxi de]. (= (140) above)
 3SG will go buy thing DE
 ‘If Zhangsan is hungry he will go buy something.’

Zhangsan in (183b) has *not* been extracted, but instead instantiates a base-generated topic, binding the null pronoun occupying the subject position of the adverbial clause. Recall that this is possible via the *Generalized Control Rule* (GCR) proposed by Huang (1984) and adopted in Huang, Li and Li (2009: 209, (49)) which posits that an empty pronoun must be coindexed with the closest nominal. In the case at hand, this ensures that the subject *pro* in the adverbial clause is bound by *Zhangsan*.

In order to decide between adverb status vs. complementizer status for *rúguǒ* ‘if’, we will now examine more closely the extraction possibilities for *object* DPs in the adverbial clause:

(184) a. Rúguǒ Zhāngsān dǎ zhè-ge xuéshēng,
 if Zhangsan beat this-CL student
 Xiǎohóng jiù huì hěn bùgāoxìng.
 Xiaohong then will very be.unhappy
 ‘If Zhangsan beats this student, then Xiaohong will be very unhappy.’

b. * [TopP Zhè-ge xuéshēng [CP [C° rúguǒ] [TP Zhāngsān dǎ zhè-ge xuéshēng]]]
 • this-CL student if Zhangsan beat this-CL student
 [Main cl. Xiǎohóng jiù huì hěn bùgāoxìng].
 Xiaohong then will very be.unhappy
 (Intended: ‘This student, if Zhangsan beats (him), Xiaohong will be very unhappy.’)

In (184b), *zhè-ge xuéshēng* ‘this student’ is the object of the verb *dǎ* ‘beat’ inside the adverbial clause. If the understood object of *dǎ* ‘beat’ were a *pro*, then it would not be able to be bound by *zhè-ge xuéshēng* ‘this student’, since *zhè-ge xuéshēng* is not the closest nominal. Consequently, *zhè-ge xuéshēng* in the sentence-initial position must have been *extracted* as indicated in (184b). This extraction is illicit, because it involves the violation of the island constraint, hence the ungrammaticality of (184b).

Under the analysis of *rúguǒ* as an adverb, the ungrammaticality of (184b) cannot be explained, for the simple reason that there is no island involved:

(185) # Zhè-ge xuéshēng [TP rúguǒ Zhāngsān dǎ zhè-ge xuéshēng]
 this-CL student if Zhangsan beat this-CL student
 [Main cl. Xiǎohóng jiù huì hěn bù gāoxìng].
 Xiaohong then will very be.unhappy

Importantly, as mentioned in section 4.1 above, the violation of island constraints is only clearly observable for predicates implying episodic eventualities (cf. Niina Zhang 2002).

Accordingly, if the (episodic) verb *dǎ* ‘beat’ in (185) is replaced by the (non-episodic) verb *xǐhuān* ‘like’, the acceptability of the sentence is considerably improved:

- (186) ? [TopP Zhè-ge xuéshēng [CP [C° rúguo] [TP Zhāngsān bù xǐhuān
 this-CL student if Zhangsan neg like
 zhè-ge xuéshēng]]] [Main cl. Xiǎohóng jiù huì hěn bùgāoxìng].
 this-CL student Xiaohong then will very be.unhappy
 ‘This student, if Zhangsan doesn’t like him, Xiaohong will be very unhappy.’

According to Niina Zhang (2002) who was the first to notice this contrast, sentences such as (186) still involve extraction of *zhè ge xuéshēng* ‘this student’; why the episodic vs non-episodic nature of the verbs plays a role for extraction here is left open. By contrast, for Y.-H. Audrey Li (2014), cases such as (186) do not involve extraction, but a base-generated *true empty category* (TEC). A TEC is different from the *pro* in subject position; while the latter is subject to the *Generalized Control Rule* (cf. Huang 1982), a TEC takes as its closest c-commanding antecedent a (null) topic or a higher subject. Pan (2017b) likewise assumes that there is no extraction with non-episodic predicates; instead, a *pro* occupies the “surface” object position without being selected as an internal argument. With episodic predicates, however, a true gap is always left after extraction, which systematically gives rise to island effects. The comparison between a verb of the type *dǎ* ‘beat’ and a verb of the type *xǐhuān* ‘like’ suggests that in addition to episodicality, the verb should also convey a high degree of “impact” on the patient (for further discussion, cf. Victor Pan 2014, 2016 ch.2).

When the conditional clause is merged below the matrix subject, extraction of an object DP from within the adverbial clause is likewise illicit due to island constraints, irrespective of the landing site assumed, i.e. in the left periphery of the adverbial clause or the matrix sentence:

- (187) a. [Matrix-TP Xiǎohóng [adv.cl. rúguo Zhāngsān dǎ -le Lǐsì]
 Xiaohong if Zhangsan beat-PERF Lisi
 jiù huì hěn shēng qì].
 then will very produce air
 ‘If Zhangsan beats Lisi, Xiaohong will be very angry.’
- b. *[Matrix-TopP Lǐsì [Matrix-TP Xiǎohóng [adv.cl. rúguo Zhāngsān
 Lisi Xiaohong if Zhangsan
 dǎ-le Lǐsì]³³ jiù huì hěn shēng qì]].
 beat Lisi then will very produce air
- c. *[Matrix-TP Xiǎohóng [adv.cl. Lǐsì [rúguo Zhāngsān dǎ -le Lǐsì]]

³³ Extraction of the adverbial clause object is likewise excluded for non-episodic predicates here:

- (i) [Matrix-TP Xiǎohóng [adv.cl. rúguo Zhāngsān bù xǐhuān Lǐsì]
 Xiaohong if Zhangsan beat Lisi
 jiù huì hěn shāngxīn.
 then will very be.sad
 ‘If Zhangsan does not like Lisi, Xiaohong will be very sad.’
- (ii) *[Matrix-TopP Lǐsì [Matrix-TP Xiǎohóng [adv.cl. rúguo Zhāngsān
 Lisi Xiaohong if Zhangsan
 bù xǐhuān Lǐsì] jiù huì hěn shāngxīn.
 NEG like Lisi then will very be.sad

The presence of two potential binders for the empty object of the psychological verb *xǐhuān* ‘like’ seems to create a processing problem.

Xiaohong Lisi if Zhangsan beat Lisi
 jiù huì hěn shēng qì].
 then will very produce air
 ('If Zhangsan beats Lisi, Xiaohong will be very angry.')

In (187b), *Lisi* is extracted to the matrix topic position, while in (187c), *Lisi* is extracted to the periphery of the adverbial clause. Irrespective of the landing site for *Lisi*, the resulting sentence is unacceptable.

Concerning the other conjunctions with still undetermined status (*jíshǐ* 'even if', *jìrán* 'given that, since', *suīrán* 'although', *chúfēi* 'only if', *yīnwèi* 'because' etc.), they all turn out to be complementizers as well. For reason of space, we will only illustrate the unacceptable extraction to matrix topic position as argument in favor of their complementizer status.

- (188) a. [_{adv.cl.CP} *Jíshǐ* /*jiùsuàn* *Zhāngsān piàn Mǎlì*],
 even.if/even.though Zhangsan cheat Mary
 [_{Matrix-TP} *dàjiā* *háishì rènwéi Zhāngsān shì ge hǎo rén*].
 everyone still think Zhangsan be Cl good person
 ('Even if Zhangsan cheats on Mary, everybody still thinks
 that Zhangsan is a good person.')
- b. * *Mǎlì* [_{adv.cl.CP} *jíshǐ* /*jiùsuàn* *Zhāngsān piàn Mǎlì*],
 Mary even.if/even.though Zhangsan cheat Mary
 [_{Matrix-TP} *dàjiā* *háishì rènwéi Zhāngsān shì ge hǎo rén*].
 everyone still think Zhangsan be Cl good person
 ('Even if Mary, Zhangsan cheats on her, everybody still thinks
 that Zhangsan is a good person.')
- c. * *Mǎlì* [_{CP} *suīrán* *Zhāngsān piàn Mǎlì*],
 Mary although Zhangsan cheat Mary
 [_{Matrix-TP} *dàjiā* *háishì rènwéi Zhāngsān shì ge hǎo rén*].
 everyone still think Zhangsan be Cl good person
 ('Although Mary, Zhangsan cheats on her, everybody still thinks
 that Zhangsan is a good person.')

In (188a, b), the illicit extraction is shown for the adverbial clause in sentence-initial position. However, it is not excluded that (188b) is unacceptable because it is difficult to establish a discourse link between the matrix topic *Mary* and the comment sentence "everybody still thinks that Zhangsan is a good person". Nevertheless, (189c) further below shows that even when such processing difficulties are not given (because *Mary* does not occupy matrix TopP), the same configuration with the object DP to the left of the C gives rise to ungrammaticality, thus confirming the impossibility of extraction.

The paradigm in (189) uses *yīnwèi* 'because', because the *yīnwèi* 'because' adverbial clause is fully acceptable both in sentence-initial position as well as below the matrix subject. (189a) illustrates the illicit extraction of the object DP *Mary* from the adverbial *yīnwèi* clause in sentence-initial position. (189b, c) involves the adverbial clause merged below the matrix subject; extraction of *Mary* to either matrix TopP or to the periphery of the adverbial clause is likewise illicit. The same holds for object extraction from inferential clauses with *jìrán* 'since' (cf. (190)) (*modulo* the lack of inferential clauses *below* the matrix subject):

- (189) a. *Mǎli [_{adv.cl.} yīnwèi Zhāngsān piàn Mǎli],³⁴
 Mary because Zhangsan cheat Mary
 [_{Matrix TP} dàjiā dōu rènwéi Zhāngsān shì ge huài rén.]
 everyone all think Zhangsan be CI bad person
 ('Because Zhangsan cheats on Mary, everybody thinks that Zhangsan is a bad guy.')
- b. * Mǎli [_{Matrix TP} dàjiā [_{adv.cl.} yīnwèi Zhāngsān piàn
 Mary everyone because Zhangsan cheat
 Mǎli] dōu rènwéi Zhāngsān shì ge huài rén].
 Mary all think Zhangsan be CI bad person
 ('Because Zhangsan cheats on Mary, everybody thinks that Zhangsan is a bad guy.')
- c. * Dàjiā [_{Matrix TP} Mǎli [_{adv.cl.} yīnwèi Zhāngsān piàn
 everyone Mary because Zhangsan cheat
 Mǎli] dōu rènwéi Zhāngsān shì ge huài rén].
 Mary all think Zhangsan be CI bad person
 ('Because Zhangsan cheats on Mary, everybody thinks that Zhangsan is a bad guy.')
- (190) a. [_{adv.cl.}CP Jìrán Zhāngsān dǎ -le Lǐsì],
 since Zhangsan beat-PERF Lisi
 [_{Matrix-CP} dàjiā jiù bù xiǎng gēn Zhāngsān
 everyone then NEG want with Zhangsan
 zuò péngyou le].
 make friend SFP
 'Since Zhangsan hit Lisi, nobody wants to befriend Zhangsan.'
- b. *Lǐsì [_{adv.cl.}CP jìrán Zhāngsān dǎ -le Lǐsì],
 Lisi since Zhangsan beat-PERF Lisi
 [_{Matrix-CP} dàjiā jiù bù xiǎng gēn Zhāngsān
 everyone then NEG want with Zhangsan
 zuò péngyou le].
 make friend SFP

As already mentioned, the analysis of conjunctions as adverbs cannot account for the island effects observed above. In addition, this adverb analysis would force us to posit a subclass of adverbs that are excluded from matrix clauses, an undesirable result.³⁵

To summarize the results obtained, the conjunctions occurring in the different types of adverbial clauses are all *heads*: (i) complementizers: *rúguǒ* 'if', *jíshǐ* 'even if', *jiùsuàn* 'even though', *jìrán* 'since', *suīrán* 'although', *yīnwèi* 'because' etc.); (ii) postpositions: *yilai* 'from...on, since', *yiqian* 'before (temporal)', *yihou* 'after'); (iii) prepositions selecting a DP or Postp complement: *zài* 'at', *dāng* 'at'; *zìcóng* 'from (on).'

³⁴ The extraction of the object of a bare episodic predicate such as *piàn* 'cheat', *dǎ* 'hit', *mà* 'scold', from inside an island is generally banned. Extraction improves slightly when these predicates are combined with aspect suffixes such as *-guo* 'experiential aspect':

(i) Mǎli [_{adv.cl.} yīnwèi Zhāngsān piàn-guo Mǎli],³⁴
 Mary because Zhangsan chea-EXP Mary
 [_{Matrix TP} dàjiā dōu juéde tāi hěn bèn]
 everyone all think 3SG very stupid

'Mary, because Zhangsan has cheated [on her], everybody thinks she is stupid.'

³⁵ Thanks to Thomas Hun-tak Lee for drawing our attention to this point.

6.2 Haegeman's (2012) dichotomy: central vs peripheral adverbial clauses

We have seen above that the DP preceding the conjunction (which is now analyzed as a complementizer) either occupies a position in the left-periphery of the matrix clause or in the left-periphery of the adverbial clause. In the latter case, the adverbial clause must project an additional TopP to host the DP and it is now this TopP that represents the domain of the adverbial clause, (cf.191).

- (191) [Adv.cl.-TopP *Lǐsì* [CP [C° *rúguǒ*] [TP *Zhāngsān bù xīhuān*
Lisi if *Zhangsan* NEG like
~~*Lisi*~~]], [Main cl. *Xiǎohóng jiù huì hěn bù gāoxìng*].
Lisi *Xiaohong* then will very NEG happy
 ‘Lisi, if Zhangsan doesn’t like him, Xiaohong will be very unhappy.’

So far, we have not discussed the possibility that the direct object *Lisi* in (191) can also be topicalized to a position to the right of *ruguo* ‘if’. In this case, it must be assumed that complementizers such as *ruguo* ‘if’ can take a TopP as complement, as shown in (192).

- (192) [CP [C° *Rúguǒ*] [Adv.cl.-TopP *Lǐsì* [TP *Zhāngsān bù xīhuān*
 if *Lisi* *Zhangsan* neg like
~~*Lǐsì*~~]], [Main cl. *Xiǎohóng jiù huì hěn bù gāoxìng*].
Lisi *Xiaohong* then will very neg happy
 ‘Lisi, if Zhangsan doesn’t like him, Xiaohong will be very unhappy.’

Recall that the same type of extraction is banned with an episodic eventuality predicate such as *mà* ‘scold’:

- (193) *[CP [C° *Rúguǒ*] [Adv.cl.-TopP *Lǐsì* [TP *Zhāngsān mà* ~~*Lǐsì*~~]],
 if *Lisi* *Zhangsan* scold *Lisi*
 [Main cl. *Xiǎohóng jiù huì hěn bù gāoxìng*].
Xiaohong then will very neg happy

The case illustrated in (193) reminds us of the extraction test used by Haegemann with regard to the dichotomy *central adverbial clauses vs peripheral adverbial clauses*. A natural question to ask is whether this dichotomy also exists in Chinese.

Haegeman (2012 and earlier works) establishes a correlation between the internal syntax of adverbial clauses, i.e. the (non) availability of argument fronting, on the one hand, and their degree of “integration” (central vs peripheral) with the main clause, on the other.

- (194) a. *If [these final exams] you don’t pass, you won’t get the degree.

- b. If [his syntactic arguments] we can’t criticize, there is a lot to be said against his semantic analyses. (Haegeman 2002, ex. (17a))

Phenomena such as argument fronting are considered to be typical of main clauses, hence *Main Clause Phenomena* (MCP). Importantly, MCP are not restricted to main clauses, but also exist in a relatively well-defined subset of adverbial clauses, viz. the “peripheral” adverbial clauses in Haegeman’s work. (192b) illustrates a peripheral adverbial clause (PAC), while (192a) shows a central adverbial clause (CAC).

Lu Peng (2003, 2008: 206ff) is the first attempt to replicate Haegeman's (2002) test of argument fronting to Chinese in order to distinguish between central and peripheral adverbial clauses; she postulates that adverbial clauses preceding the main clause involve PAC, whereas adverbial clauses merged below the subject of the matrix clause instantiate CAC. Accordingly, object topicalization would be expected to be possible in the former, but not in the latter. As demonstrated in (195) - (196) below, however, this prediction is not borne out by the data:

(195) a. ?[Main cl. Xiǎohóng [Adv.cl.-CP [C° rúguǒ] [Adv.cl.-TopP tā de
Xiaohong if 3SG SUB
nán péngyou [TP bàba bù xǐhuān tāde nán péngyou]],
boy.friend dad NEG like her boy.friend
jiù huì fēicháng nánguò].
then will very sad
'If her boyfriend, dad doesn't like, Xiaohong will be very unhappy.'

b. ? [CP [C° Rúguo] [Adv.cl.-TopP tā de nán péngyou
if 3SG SUB boy.friend
[TP bàba bù xǐhuān tāde nán péngyou]],
dad NEG like her boy.friend
[Main cl. Xiǎohóng jiù huì fēicháng nánguò].
Xiaohong then will very sad
'If her boyfriend dad doesn't like, Xiaohong will be very unhappy.'

(196) a. ?[Main cl. Xiǎohóng [Adv.cl.-CP [C° jìshǐ] [Adv.cl.-TopP tā de
Xiaohong even.if 3SG SUB
nán péngyou [TP bàba bù xǐhuān tāde nán péngyou]],
boyfriend dad NEG like her boy.friend
yě yào bǎ tā dài huí jiā qù].
also will BA 3sg bring home go
'Xiaohong even if her boyfriend, dad doesn't like, (she) nevertheless brings him home.'

b. ? [CP [C° Jìshǐ] [Adv.cl.-TopP tāde nán péngyou
even.if her boy.friend
[TP bàba bù xǐhuān tāde nán péngyou]],
dad neg like her boy.friend
[Main cl. Xiǎohóng yě yào bǎ tā dài huí jiā qù].
Xiaohong also will BA 3sg bring home go
'Xiaohong, even if her boyfriend dad doesn't like, (she) nevertheless brings him home.'

As far as we can see, there is no sharp difference between TP-external and TP-internal adverbial clauses: both marginally allow for the topicalization of the object, as likewise noted by Wei & Li (this volume, Part 1, section 3.2, 3.4.1.1). By contrast, using other diagnostics than object topicalization, Wei & Li provide extensive evidence in favour of the existence of the dichotomy CAC vs PAC in Chinese as well. In particular, only CACs (i.e. reason and causal clauses) are allowed below the matrix subject, in contrast to PACs (i.e. concessive and inferential clauses), which are banned from this position (also cf. our observations on this distribution in sections 3.3 and 3.4 above). Their result thus partly confirms Lu Peng's (2003, 2008) initial hypothesis, *modulo* the necessity of applying different tests.

6.3. Status of conjunctions in the main clause

So far we have not discussed the status of the so-called conjunctions in the main clause. The issue is in principle the same as for conjunctions in the adverbial clause: are they adverbs, i.e. XPs, or heads? The possible tests at our disposal, however, differ somewhat, given that it is the main clause that is examined here.

One possible test that exploits the main clause character is to see whether the main clause on its own (without the preceding adverbial clause) is acceptable; if yes, the conjunctions are to be analyzed as adverbs. With conjunctions *qua* C, by contrast, the ability to “stand alone” is not expected.

In the case of TP-internal adverbs such as *jiù* ‘then’, *háishì* ‘still’ whose adverbial status is beyond doubt (because they are confined to the canonical preverbal adverb position below the subject), a main clause containing them can naturally stand alone.

(197) a. Tā háishì měitiān dōu hē yī píng kělè.
 3SG still every.day all drink 1 CL Cola
 ‘He still drinks a bottle of coke every day.’

b. Tā mǎshàng jiù líkāi.
 3SG immediately then leave
 ‘He is about to leave.’

If we now apply this “stand alone” test to *nàme* ‘so, therefore, then’ and *suǒyǐ* ‘therefore’ (which are present in the main clause following a conditional or a causal clause, respectively), the situation becomes a bit more complex. First, a sentence starting with *nàme* is wellformed on its own, allowing us to analyze *nàme* as an adverb confined to the pre-subject position, on a par with *so* in English.

(198) Nàme wǒmen jiù dōu huí jiā qù.
 so 1PL then all return home go
 ‘So we will all go home.’

A sentence such as (199) beginning with *suǒyǐ* ‘therefore’, however, is not acceptable on its own, i.e. in the absence of a causal clause, when uttered “out of the blue”. (Recall from section 3.2.1 above that *suǒyǐ* ‘therefore’ is confined to the pre-subject position.) Accordingly, when *suǒyǐ* is followed by a particle such as *ne* which precisely invokes a link with the preceding discourse, the sentence becomes acceptable.

(199) a. ??Suǒyǐ tā kěndìng bù xiāngxìn nǐ.
 therefore 3SG certainly NEG believe 2SG
 ‘Therefore he will certainly not believe you.’

b. Suǒyǐ ne, tā kěndìng bù xiāngxìn nǐ.
 therefore TOP/SFP 3SG certainly NEG believe 2SG
 ‘Therefore he will certainly not believe you.’

Irrespective of whether *ne* is analyzed as Top° or as SFP, its compatibility with *suǒyǐ* ‘therefore’ precludes C-status for the latter and points to its adverbial status (cf. section 3.2.1 above for further examples).³⁶

Let us now extend this test using particles to other main clause conjunctions in sentence-initial position, i.e. to *dànshi* ‘but’, *kěshì* ‘but’, *bùguò* ‘but, however’ *rán’ér* ‘nevertheless, however’ in concessives. As already observed for *suǒyǐ* ‘therefore’ in (199), these items are fully acceptable in sentence-initial position when a particle such as *ne* and the associated pause are added, but only marginally acceptable with a simple pause:

- (200) a. ?{Dànshi/kěshì}/{bùguò/rán’ér}, Mǎlì bìng
 but / however Mary at.all
 bù xǐhuān chuān qúnzi.
 NEG like wear skirt
 ‘But/However, Mary doesn’t like to wear skirts at all.’
- b. {Dànshi/kěshì} ne/ {bùguò/rán’ér} ne,
 but TOP/SFP however TOP/SFP
 Mǎlì bìng bù xǐhuān chuān qúnzi.
 Mary at.all NEG like wear skirt
 ‘But/However, Mary doesn’t like to wear skirts at all.’

As a result, *dànshi* ‘but’, *kěshì* ‘but’, *bùguò* ‘but, however’ *rán’ér* ‘nevertheless, however’ as well as *suǒyǐ* ‘therefore’ can be plausibly analyzed as adverbs (not as Cs), on a par with *nàme* ‘so, therefore’ (also compatible with *ne*). More precisely, they belong to the subset of sentential adverbs or adverbial phrases expressing the speaker’s attitude that obligatorily precede the subject, such as *lǎoshi shuō* ‘frankly (speaking)’.

- (201) Lǎoshi shuō , wǒ (*lǎoshi shuō) méi xiǎngdào zhè diǎn³⁷
 frankly speak 1SG frankly speak NEG think this point
 ‘Frankly (speaking), I have not thought about that point.’

This subset of adverbs thus contrasts with the majority of sentential adverbs, which are acceptable in both pre- and post-subject position (*xiǎnrán* ‘obviously’, *qíshí* ‘in fact’ etc.)

³⁶ Lin & Tang (1993: 66) opt for *suǒyǐ* ‘therefore’ as C, based on the data below:

- (i) Yīnwèi jīngfèi bù gòu, suǒyǐ
 because outlay NEG enough therefore
 wǒ juéding qǔxiāo zhè cì huódòng
 1SG decide cancel this CL activity
- (ii) Yīnwèi jīngfèi bù gòu, suǒyǐ
 because outlay NEG enough therefore
 [zhè cì huódòng] wǒ juéding qǔxiāo
 this CL activity 1SG decide cancel
- (iii) *Yīnwèi jīngfèi bù gòu, [zhè cì huódòng]
 because outlay NEG enough this CL activity
 suǒyǐ wǒ juéding qǔxiāo
 therefore 1SG decide cancel
 ‘Because the outlay is not enough, I decided to cancel the activity.’

They interpret (iii) as evidence for the C status of *suǒyǐ* and the impossibility of extracting any XPs to its left. In our view, however, (iii) is unacceptable simply because the adverb *suǒyǐ* ‘therefore’ does not occupy the required sentence-initial position. The compatibility of *suǒyǐ* with *ne* further invalidates its analysis as C.

³⁷ *Lǎoshi shuō* ‘frankly speaking’ is acceptable in post-subject position when it is analyzed as the main verb preceded by an adverb: ‘I speak frankly (that) I have not thought about that point.’

- (202) {Qíshí /xiǎnrán} ((ne),) tāmen {qíshí /xiǎnrán}
 in.fact/evidently NE 3PL in.fact/evidently
 bù liǎojiě wǒmen de qíngkuàng.
 NEG understand 1PL SUB situation
 ‘In fact/Obviously, they don’t understand our situation.’

Note that a pause - with or without a particle - is completely optional for these adverbs when in sentence-initial position:

To summarize, the so-called conjunctions in the main clause all turn out to be sentential adverbs confined to the pre-subject position. However, they are obligatorily followed by a pause, preferably accompanied by a particle, clearly indicating that they occupy a position in the sentence periphery.

6.4 Interim summary

This section has shown that the so-called conjunctions in the adverbial clauses are not sentential adverbs, but heads: (i) complementizers: *rúguǒ* ‘if’, *jíshǐ* ‘even if’, *jiùsuàn* ‘even though’, *jìrán* ‘since’, *suīrán* ‘although’, *yīnwèi* ‘because’ etc.); (ii) postpositions: *yǐlái* ‘from...on, since’, *yǐqián* ‘before (temporal)’, *yǐhòu* ‘after’); (iii) prepositions selecting a DP or Postp complement: *zài... (de shíhòu)* ‘at the time when’; *zìcóng ...yǐlái* ‘from...on, since’. By contrast, the “conjunctions” occupying the sentence-initial position in the main clause are to be analyzed as sentential adverbs confined to the pre-subject position.³⁸

While from a perspective of general linguistics this result might seem trivial, this is the first time that the issue of conjunctions in Chinese has been systematically addressed in an extensive study that covers all types of complex sentences.

7. General conclusion

The reader may have been surprised by the numerous analytical possibilities presented throughout this article. In fact, the multiple parsings for the different types of complex sentences are due to two important characteristics of Chinese grammar: the lack of an overt morphological realization of T and the existence of *pro*-drop (null subject). As a result, a DP preceding the verb can in principle be analyzed either as subject in SpecTP (cf. (i)) or as a topic in the left periphery above TP controlling a null subject in SpecTP (cf. (ii)).

- (i) [TP DP [T' [T Ø] vP]]
 (ii) [TopP DP_i [TP *pro*_i [T' [T Ø] vP]]]

In the presence of conjunctions, this principled positional ambiguity (SpecTP vs SpecTopP) gives rise to even more parsing possibilities.

First, when the conjunction occurs at the *left edge* of the adverbial clause preceding all adverbial clause internal material (including the subject DP), the parsing (as well as the C status of the conjunction) seems at first sight as clear as in English *Because it rains, I will not come*. However, different from English, in Chinese even this case was shown not to be structurally unambiguous: the conjunction can either be analyzed as a sentential adverb preceding the DP (in SpecTP or SpecTopP) (cf. (iii-iv)), or as a complementizer (cf. (v-vi)):

³⁸ For conjunctions in the main clause, Chao Yuen Ren (1968: 791) arrives at the opposite conclusion from ours. Since the majority must occur in the sentence-initial position preceding the subject (e.g. *dànshi* ‘but’, in contrast to *kěshì* ‘but’ acceptable in both pre- and post-subject position), he does not treat them as adverbs, but as conjunctions.

- (iii) [adverb [TP DP [T' [T° Ø] vP]]]
 (iv) [adverb [TopP DP_i [TP *pro*_i [T' [T° Ø] vP]]]]
 (v) [CP C° [TP DP [T' [T° Ø] vP]]]
 (vi) [CP C° [TopP DP_i [TP *pro*_i [T' [T° Ø] vP]]]]

Second, when the conjunction occurs to the *right* of an overt DP ‘DP *conj*....’, we saw that not only do we have the choice between the analysis of this DP as an adverbial clause subject (with the conjunction as adverb, cf. (vii)) or an adverbial clause topic (with the conjunction as C, cf. (viii)), but depending on the presence/absence of an explicit subject in the main clause, there are the additional options with the sentence-initial DP as matrix subject (ix) or as matrix topic (x):

- (vii) [TP DP [T' [T° Ø] adverb vP]]]
 (viii) [adv.TopP DP_i CP [C° [TP *pro*_i [T' [T° Ø] vP]]]]
 (ix) [matrixTP DP [T' [T° Ø] [adv.cl. ...]]]
 (x) [matrixTopP DP [adv.cl. ...] [main cl.]]

The only reliable test to tease these alternatives apart is object extraction from the adverbial clause (with an episodic predicate). This test is based on the asymmetry observed for the control of a null subject vs that of a null object. Accordingly, if island effects are observed for the extraction of an adverbial clause object to the sentence-initial position, the conjunction must be analyzed as a C-head (cf. (v'-vi')); by contrast, the conjunction can be assigned adverb status in the absence of island effects (cf. (iii'-iv')).

- (iii') DP_{Object} [adverb [TP DP [T' [T Ø] [_{vP} V ~~DP~~_{Object}]]]]
 (iv') DP_{Object} [adverb [TopP DP_i [TP *pro*_i [T' [T Ø] [_{vP} V ~~DP~~_{Object}]]]]]]
 (v') *DP_{Object} , [CP C° [TP DP [T' [T Ø] [_{vP} V ~~DP~~_{Object}]]]
 (vi') *DP_{Object} , [CP C° [TopP DP_i [TP *pro*_i [T' [T Ø] [_{vP} V ~~DP~~_{Object}]]]]

As we have seen, object extraction does indeed give rise to island violations, thus providing evidence for the complementizer status of the conjunctions in adverbial clauses.

Besides the analytical complications due to the characteristics of Chinese grammar, general syntactic theory itself allows two analyses for the structural position of adverbial clauses: either the adverbial clause is adjoined to TP or it is treated as a sentential topic in SpecTopP. Given that there is no principled reason to reject either of these two alternatives, both possibilities need to be maintained.

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