

SYNTACTIC STRUCTURES OF COMPLEX SENTENCES IN MANDARIN CHINESE*

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1. Introduction

This paper analyzes complex sentences in Mandarin Chinese. There are quite a number of puzzles associated with the complex sentences in Mandarin Chinese, one of them being the word order problem. It is known that, in English, the word order of a complex sentence with an adverbial clause is quite free; the adverbial clause may precede or succeed the main clause, as in (1) and (2).

- (1) After John entered the room, Bill turned on the TV.
(2) Bill turned on the TV after John entered the room.

Mandarin Chinese, on the other hand, doesn't seem to have this option. Typically an adverbial clause has to precede the main clause. Look at the following examples for illustration (also see Tang 1990).

- (3) Zhangsan jinru fangjian zhihou, Lisi dakai dianshi.
Zhangsan enter room after Lisi turn-on TV

‘After Zhangsan entered the room, Lisi turned on the TV.’

- (4) *Lisi dakai dianshi, Zhangsan jinru fangjian zhihou.
Lisi turn-on TV Zhangsan enter room after

‘(Intended) Lisi Turned on the TV after Zhangsan entered the room.’

Gasde and Paul (1996: 272) comments: “The order in a Chinese complex sentence is always ‘adjunct clause – main clause’, a fact well established in the literature.” Unfortunately, however, there have been very few works that deal with the complex sentences in Mandarin from a generative perspective. This paper attempts to fill the gap, providing analyses of various kinds of complex sentences. It is shown that the complex sentences in Mandarin Chinese are predominantly of the “left-adjunction” structure, namely the structure in which a clause adjoins to another clause from the left. Sometimes conjunction structures are found,

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but none of the constructions that we examine employs “right adjunction” structures. This phenomenon, in fact, is part of a larger generalization that I call the “left proliferation” of the phrase structures in Chinese, which states that there is no right adjunction in Mandarin Chinese syntax.

In what follows we will discuss the following complex sentence:

- The conditional constructions.
- The telic construction.
- The reason construction.
- The concessive construction.
- The ‘unless’-‘otherwise’ construction.

Each of these constructions, in fact, deserves an individual paper, thus this paper does not pretend to be exhaustive and all covering. Instead, this paper focuses on the phrase-structural aspects of these constructions and certain related questions, with the hope to shed more light on the structure building of natural language.

Each of the following sections will deal with a particular construction. The last section is the concluding remarks, in which we will speculate on certain theoretical consequences that follow from the analyses of this paper.

2. The Conditional Constructions

We start with the conditionals in Mandarin Chinese. We will discuss three conditional constructions in this section: the *jiu*-conditional, the modal conditional, and the *cai*-conditional.

2.1. The *Jiu*-Conditional

A typical conditional sentence in Mandarin Chinese looks like (5), in which the element *ruguo* ‘if’ occurs in the antecedent clause, and the element *jiu* ‘then’ occurs in the consequent clause.

- (5) Ruguo Zhangsan lai, Lisi jiu lai.
 if Zhangsan come, Lisi then come
 ‘If Zhangsan comes, Lisi [will] come.’

There are other elements that have the meaning ‘if’, and they can replace *ruguo* ‘if’ in (5):

- (6) Tangruo / yaoshi / ruoshi Zhangsan lai, Lisi jiu lai.
 if if if Zhangsan come, Lisi then come
 ‘If Zhangsan comes, Lisi [will] come.’

The morpheme *ruguo* / *tangruo* / *yaoshi* / *ruoshi* (all meaning ‘if’) doesn’t have to occur in the initial position of the antecedent clause; they may occur between the subject and the predicate of the antecedent clause.

- (7) Zhangsan tangruo / yaoshi / ruoshi lai, Lisi jiu lai.
 Zhangsan if if if come, Lisi then come

‘If Zhangsan comes, Lisi [will] come.’

In Mandarin Chinese, a conditional can be formed with the morpheme *de-hua* (which may also be glossed ‘if’) appended to the end of the antecedent clause, as in (8). The morpheme *de-hua* may co-occur with those words meaning ‘if’ (which may occur in the initial position or between the subject and predicate of the antecedent clause). See (9).

- (8) Zhangsan lai de-hua, Lisi jiu lai.
 Zhangsan come, if Lisi then come

‘If Zhangsan comes, Lisi [will] come.’

- (9) Ruguo / tangruo / yaoshi Zhangsan lai de-hua,
 if if if Zhangsan come if
 Lisi jiu lai.
 Lisi then come

‘If Zhangsan comes, Lisi [will] come.’

Note that the element *jiu* ‘then’ occurs in all the conditional sentences above. In fact, the occurrence of the element *jiu* suffices to make a (complex) sentence conditional, as in (10).

- (10) Zhangsan lai, Lisi jiu lai.
 Zhangsan come, Lisi then come

‘[If] Zhangsan comes, Lisi [will] come.’

What is more, if all those elements meaning ‘if’ occur but *jiu* doesn’t, the sentence is ungrammatical, as in (16-19).

- (11) *Ruguo / tangruo / yaoshi Zhangsan lai, Lisi lai.
 if if if Zhangsan come Lisi come

- (12) *Zhangsan lai de-hua, Lisi lai.
 Zhangsan come if Lisi come

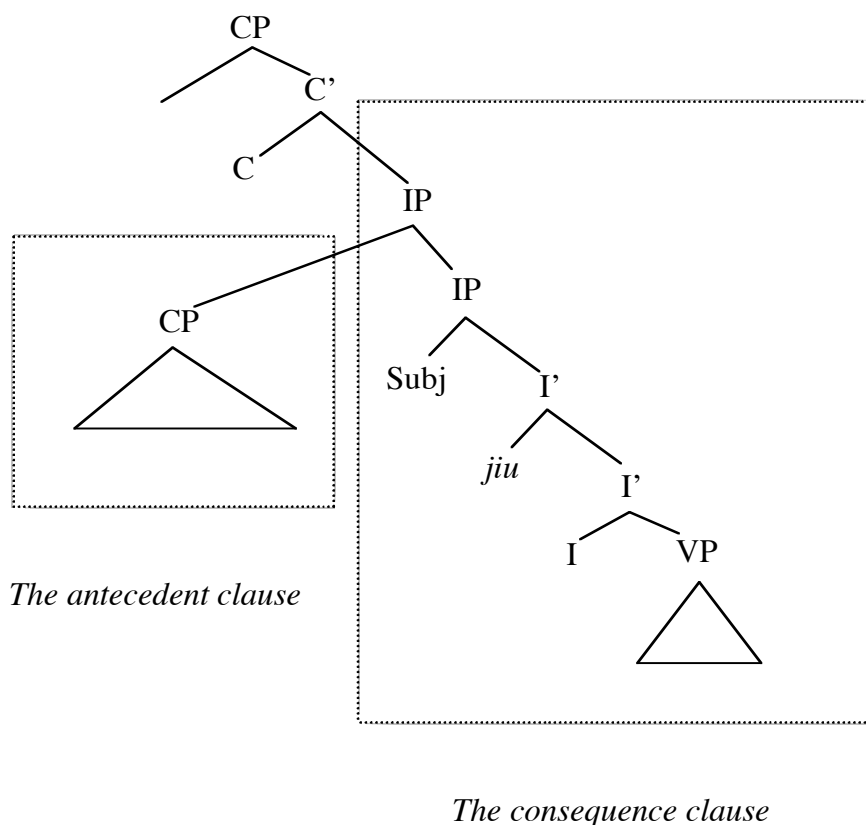
- (13) *Ruguo / tangruo / yaoshi Zhangsan lai de-hua,
 if if if Zhangsan come if
 Lisi lai.
 Lisi come

Of course, if none of these morphemes occurs, the sentence is ungrammatical (that is, the sentence doesn't make a legitimate conditional).

- (14) *Zhangsan lai, Lisi lai.
Zhangsan come, Lisi come

In view of the crucial role of the element *jiu* 'then', we propose that *jiu* is the real conditional morpheme. The antecedent clause itself is a syntactic adjunct. All those morphemes meaning 'if' are not real conditional operator; they are just adverbial elements freely adjoined to the antecedent clause. We call conditional sentences licensed by *jiu* the *jiu*-conditionals. The *jiu*-conditional can be analyzed as in (15).

- (15)



We need to provide syntactic evidence to show that the antecedent clause in the *jiu*-conditional is indeed a syntactic adjunct. In what follows we will use two tests to show the adjuncthood of a clausal structure.

The first test is to see if a clause may contain a wide-scoped A-not-A operator. A Chinese sentence can be turned into a yes-no question by having its verb changed to an "A-not-A" form. See the following examples:

- (16) Zhangsan xihuan Lisi.
Zhangsan like Lisi
'Zhangsan likes Lisi.'

- (17) Zhangsan xi-bu-xihuan Lisi?
 Zhangsan like-not-like Lisi

‘Does Zhangsan like Lisi?’

In (17) the first syllable of the verb *xihuan* ‘like’ is reduplicated, and the negation *bu* ‘not’ is inserted between the reduplicated part and the base form of the verb. The resulting form has the meaning of ‘like or not like’. Huang (1982) postulates an I^0 -level question operator, called the *A-not-A operator*, to handle this phenomenon. Morphologically, the A-not-A operator incorporates with the verb of the sentence and converts it into the A-not-A form as in (17). Syntactically and semantically, the A-not-A operator moves to CP Spec in LF and make the sentence a yes-no question. Of special interest to us is that the movement of the A-not-A operator is subject to the general locality constraints. For example, the A-not-A operator in (18) can assume the sentential scope even though it is base-generated in the embedded clause, but the A-not-A operator in (19) and (20) cannot assume the sentential scope, because it occurs in a relative clause ((19)) and a sentential subject ((20)), both being syntactic adjuncts. The CED (Huang 1982) is violated when the A-not-A operator moves to the matrix CP Spec in LF.

- (18) Zhangsan renwei [Lisi xi-bu-xihuan Amei]?
 Zhangsan think Lisi like-not-like Amei

‘Does Lisi like Amei—what does Zhangsan think?’

- (19) *Zhangsan renshi [Lisi xi-bu-xihuan *e* de] nage ren?
 Zhangsan know Lisi like-not-like MOD that person

- (20) *[Zhangsan xi-bu-xihuan Lisi] dui dajia zui hao?
 Zhangsan like-not-like Lisi to everyone most good

Now, if a clause cannot take a wide-scoped A-not-A operator, we may conclude that the clause is a syntactic adjunct, as the extraction of the A-not-A operator violates the CED.

The second test is the Coordinate Structure Constraint (CSC) effect. Though the CSC was proposed as an island to syntactic movement, we find that it also affects dependencies other than syntactic movement. In Mandarin Chinese topicalization doesn’t have to be syntactic movement; it can be licensed by an empty resumptive pronoun. Now the gist is that, topicalization out of a conjunct is ungrammatical:¹

¹ If (22) is re-parsed in the following way, the sentence become grammatical:

- (i) [Nawei jiaoshou, xuesheng xihuan *e*], dan laoshi taoyan xiaozhang].
 that professor student like but teacher hate principal
 ‘[That professor, the students like [him]]; but the teachers hate the principal.’

But this is no more topicalization out of a conjunct. We need to separate the two structures. This caution also applies to other complex sentences that we will discuss later.

- (21) Xuesheng xihuan nawei jiaoshou, dan laoshi taoyan xiaozhang.
 student like that professor but teacher hates principal
 ‘The students like that professor, but the teachers hate the principal.’

- (22) *Nawei jiaoshou, [xuesheng xihuan e dan laoshi taoyan xiaozhang].
 that professor student like but teacher hate principal

The ungrammaticality of (22) is the result of the CSC effect.² Notice that the across-the-board effect can be seen as well: if the topicalized element finds a gap in both of the conjuncts, the sentence is acceptable.

- (23) Nawei jiaoshou, [xuesheng xihuan e dan laoshi taoyan e].
 that professor student like but teacher hate
 ‘That professor, the students like [him] but the teachers hate [him].’

Remarkably, the CSC effect doesn’t show up in adjunction structures:

- (24) Naben shu, [[Zhangsan mai e de-shihou] Lisi bu zai jia].
 that book Zhangsa buy when Lisi not at home
 ‘That book, when Zhangsan bought [it] Lisi wasn’t home.’

So, we conclude that if a complex sentence permits topicalization out of one of its clauses, the complex sentence must have an adjunction structure.³

Now we return to the *jiu*-conditional. We find that the antecedent clause of the *jiu*-conditional cannot take the A-not-A operator.

² The consensus among syntacticians has been that the CSC has no effect on non-movement dependencies such as binding. However, there has been no discussion on the effect of the CSC on the control of the empty resumptive pronouns. See Lin (2002) (among others) for a general discussion on the CSC effect. It seems that the canonical kind of control submits to the CSC effect. For example, (i) is significantly better than (ii):

- (i) John wants [{Bill to leave} and [Mary to stay]].
 (ii) *John wants [[Bill to leave] and [PRO to stay]].

The across-the-board effect is also attested:

- (iii) John wants [[PRO to stay] and [PRO assert himself]].

³ In what follows these two tests will be frequently employed. But a caution word is needed. The grammatical judgments resulting from these tests sometimes are relative but not categorical; what we intend to show is the contrast. We do not claim that all grammatical examples are grammatical in the absolute sense. However, as long as the contrast is clear, the point made should be considered valid.

- (25) *(Ruguo) Zhangsan mai-bu-mai shu, Lisi jiu qu xuexiao?
 if Zhangsan buy-not-buy book, Lisi then go school

On the other hand, the consequent clause of the *jiu*-conditional can take the A-not-A operator.

- (26) (Ruguo) Zhangsan mai shu, Lisi jiu qu-bu-qu xuexiao?
 if Zhangsan buy book, Lisi then go-not-go school

‘Is Lisi going to school if Zhangsan buy or doesn’t buy the book?’

There doesn’t seem to be any semantic factor that would independently block the A-not-A operator in the antecedent clause of the *jiu*-conditional—the question would be asking which answer is the prerequisite for the fulfillment of the consequent clause. Thus the ungrammaticality of (25) results from syntactic islandhood of the antecedent clause, and this indicates that the antecedent clause of the *jiu*-conditional is an adjunct.

The CSC effect also shows that the *jiu*-conditional involves an adjunction structure. Look at the following example.

- (27) Naben shu, wo renwei [(ruguo) Zhangsan mai e,
 that book, I think if Zhangsan buy
 Lisi jiu fu qian].
 Lisi then pay money

‘That book, I think if Zhangsan buys [it], Lisi [will] pay the money.’

In conclusion, the *jiu* conditional in Mandarin Chinese is an adjunction structure, as the analysis in (15).

The *jiu*-conditional in Mandarin Chinese is very different from the English conditional. In the English conditional the morpheme *if* makes a (complex) sentence a conditional. Clearly the conditional force comes exclusively from *if*, but not some other element, such as *then* (though *then* may contribute specific semantics to the conditional; see Iatridou (1994)).

- (28) If John enters the room, Bill will turn on the TV.

- (29) *John enters the room, then Bill will turn on the TV.

Cheng and Huang (1996) may have been partially influenced by the function of the English *if* when they suggest that a conditional in Chinese with *jiu* only is a “reduced conditional.” They also suggest that in such sentences a phonetically null (conditional) necessity operator occurs in the sentence providing the conditional force. Their proposal accounts for the “donkey sentences” in Mandarin Chinese in which two *wh*-elements occur in a sentence (one in the antecedent clause and the other in the consequence clause) serving as bound variables (also see Lin (1996) and Chierchia (2000) for further discussion).

- (30) Zhangsan zanmei shei, Lisi jiu zanmei shei.
Zhangsan admire who Lisi then admire who

‘Lisi admires whoever Zhangsan likes.’

But Cheng and Huang’s analysis may be problematic in some aspects. For example, Cheng and Huang argue that the *ruguo* ‘if’ conditional and the “bare” conditional (i.e. conditional sentences with *wh*-variable that may optionally take *jiu*) exhibit different properties. (30) is an examples of the bare conditional. In a *ruguo* ‘if’ conditional, the consequent clause cannot take a *wh*-variable; it must take a definite description or a pronominal anaphoric to the *wh*-variable in the antecedent clause.

- (31) Ruguo Zhangsan zanmei shei,
if Zhangsan admire who
Lisi jiu xihuan *shei / nage ren / ta
Lisi then zanmei who that person him

‘If Zhangsan admires someone, Lisi [will] admire that person / him.’

However, on our analysis, the *ruguo* ‘if’ conditional and the bare conditional with *jiu* are not substantially different. The real conditional operator is *jiu*, and *ruguo* ‘if’ is just an adverbial element freely hinged on the antecedent clause. As a consequence the analysis of this paper is incompatible with Cheng and Huang’s theory, since the difference between these two kinds of conditional is crucial to their analysis.

This question deserves a different article and we will leave the relevant questions aside. Here we will simply note that, as a matter of fact, it doesn’t seem to be the case that *ruguo* ‘if’ is never compatible with a *wh*-variable in the consequent clause. One only needs to check Google to find examples like the following one:⁴

- (32) Ruguo shei chi-le ta, shei jiu hui biencheng gaolical.
if who eat-PERF it who then will become cabbage

‘Whoever eats it will become a cabbage.’

This kind of examples, don’t necessarily invalidate Cheng and Huang’s theory, but the abundance of sentences like (32) somehow needs explanation. Cheng and Huang argue that in the *ruguo* ‘if’ conditional, situations are quantified over, and in the *wh* donkey sentence, the *wh*-variables are bound (see Chierchia (2000) for detailed discussion). These two seem to be complementary to each other. Is it possible that these two ways of quantification/binding are simultaneously performed in sentences like (32)? At this point we are not sure, though we suspect that one might be able to get something along this approach. We will leave the questions to future investigation.

⁴ From <http://www.ylib.com/kids/inf02-LB.asp>.

2.2. The Modal Conditional

Sometimes a conditional sentence in Chinese doesn't need *jiu*; a modal suffices.

- (33) Zhangsan mai shu, Lisi hui fu qian.
 Zhangsan buy book Lisi will pay money

'[If] Zhangsan buys books, Lisi will pay the money.'

In the modal conditional, the modal can be an epistemic modal or a deontic modal, as in (34) and (35). The modal element doesn't have to be a syntactic modal; it can be a modal adverbial, as in (36).

- (34) Zhangsan mai shu, Lisi yinggai / bishu / keneng fu qian.
 Zhangsan buy book Lisi should must may pay money

'[If] Zhangsan buys books, Lisi should / must / may pay the money.'

- (35) Zhangsan mai shu, Lisi nenggou / keyi / yuanyi fu qian.
 Zhangsan buy book Lisi can may be-willing pay money

'[If] Zhangsan buys books, Lisi can / may / is willing to pay the money'

- (36) Zhangsan mai shu, Lisi juegui / biding fu qian.
 Zhangsan buy book Lisi absolutely definitely pay money

'[If] Zhangsan buys books, Lisi absolutely / definitely [will] pay the money'

The modal conditional can optionally take those morphemes meaning 'if', as in the case of the *jiu*-conditional.

- (37) Ruguo Zhangsan mai shu de-hua, Lisi hui fu qian.
 if Zhangsan buy book if Lisi will pay money

'If Zhangsan buys books, Lisi will pay the money.'

It is easy to see why modal elements license conditionals. Modals and conditionals have universal force. In modal constructions, the modal base—namely the kind of possible worlds quantified over—restricts the universal quantification; in conditionals, the antecedent clause provides the restriction (see Kratzer (1986); but see Higginbotham (2003)). Thus it is natural that a modal element licenses a conditional.

The modal conditional, again, involves left adjunction. Empirical evidence supports this claim. The antecedent clause of the modal conditional cannot take the A-not-A operator, but the consequence clause can.

- (38) *(Ruguo) Zhangsan mai-bu-mai shu, Lisi biding fu qian?
 if Zhangsan buy-not-buy book Lisi definitely pay money

- (39) (Ruguo) Zhangsan mai shu, Lisi biding fu-bu-fu qian?
 if Zhangsan buy book Lisi definitely pay-not-pay money
 ‘If Zhangsan buys books, then, will Lisi pay the money or not?’

The CSC effect also shows that the modal conditional has an adjunction structure, since topicalization out of the antecedent clause is acceptable.

- (40) Naben shu, wo renwei [ruguo Zhangsan mai e,
 that book I think if Zhangsan buy
 Lisi biding fu qian].
 Lisi definitely pay money
 ‘That book, I think if Zhangsan buys [it], Lisi definitely [will] pay the money.’

Modal conditionals can support the *wh* donkey sentences as well, though only those with a necessity modal adverbial can do so; see (41). If the modal element is a syntactic modal, then *jiu* must be inserted; see (42).

- (41) Shei bu yonggong, shei biding bei dang.
 who not work-hard who definitely get flunk
 ‘Whoever doesn’t work hard [will] definitely be flunked.’
- (42) Shei bu yonggong, shei *(jiu) hui bei dang.
 who not work-hard who then will get flunk
 ‘Whoever doesn’t work hard will be flunked.’

At this point we have no explanation as to why there is such a distinction. We will leave the relevant questions to future research.

2.3. The *Cai* Conditional

The element *cai*, which means ‘just’, ‘only when’ or ‘only if’, can license a conditional too, just like *jiu*. See the following examples.

- (43) Zhangsan qu, Lisi cai qu.
 Zhangsan go Lisi only-if go
 ‘Lisi [will] go only if Zhangsan goes.’

The *cai*-conditional can take those elements meaning ‘if’, though, again, they are optional.

- (44) Ruguo Zhangsan qu de-hua, Lisi cai qu.
 if Zhangsan go if Lisi only-if go
 ‘Lisi [will] go only if Zhangsan goes.’

Cai and *jiu* have a number of uses other than marking conditionals; see Lai (1999). Simply put, both *cai* and *jiu* presuppose a change of state of the truth value of a proposition; *cai* marks that the asserted value of change is “farther up” than the expected value, while *jiu* marks that the asserted change of value is “farther down” than the expected value (Lai 1999). See the examples below.

- (45) Xianzai *cai* san dian.
 now just three o'clock
 ‘It’s just three o’clock now.’ (Implication: It is still early.)

- (46) Zeme *kuai* *jiu* san dian!
 this fast then three o'clock
 ‘It’s three o’clock—so fast!’ (Implication: It is later than expected.)

Used as conditional markers, *cai* marks the necessary condition, and *jiu* marks the sufficient condition.

- (47) Zhangsan *lai*, Lisi *jiu* *lai*.
 Zhangsan come Lisi then come
 ‘If Zhangsan comes, Lisi [will] come.’
 (Implication: Zhangsan’s coming suffices to bring about Lisi’s coming.)

- (48) Zhangsan *lai*, Lisi *cai* *lai*.
 Zhangsan come Lisi only-if come
 ‘Only if Zhangsan comes will Lisi come.’
 (Implication: Only if Zhangsan comes is there a possibility of Lisi’s coming.)

The syntax of the *cai*-conditional, again, involves left-adjunction of the antecedent clause to the consequent clause, exactly as the structure (15). The consequent clause is the main clause of the construction. The tests of the A-not-A operator and the CSC effect confirm this analysis.

- (49) *(Ruguo) Zhangsan *mai-bu-mai* shu, Lisi *cai* fu qian?
 if Zhangsan buy-not-buy book Lisi only-if pay money

- (50) (Ruguo) Zhangsan *mai* shu, Lisi *cai* fu-bu-fu qian?
 if Zhangsan buy book Lisi only-if pay-not-pay money

‘If Zhangsan buys books, then, will Lisi pay the money or not?’

- (51) Naben shu, wo tingshuo [ruguo Zhangsan mai e,
 that book I heard if Zhangsan buy
 Lisi cai fu qian].
 Lisi only-if pay money

‘That book, I heard that only if Zhangsa buys [it] [will] Lisi pays the money.’

Conclusion: All the three types of conditionals have the consequent clause as the major constituent of the construction. The antecedent clause is licensed by some element in the consequent clause. The conditional constructions in Mandarin Chinese, therefore, crucially depend on left-adjunction of the antecedent clause.

3. The Telic Constructions

As we said above, the elements *cai* and *jiu* have a number of uses in Chinese sentences. However, there is a special use of *cai* which has not received specific analysis in the literature. We call this use of *cai* the “telic” use, because it resembles the telic result clause in English (see Whelpton (1995)). Look at the following example for illustration (in this example, *cai* is glossed as ‘only’.)

- (52) Zhangsan mai-le yiben xiaoshuo,
 Zhangsan buy-PERF one novel
 cai faxian ta taitai bu xihuan wenxue.
 only find his wife not like literature

‘Zhangsan bought a novel, only to find that his wife doesn’t like literature.’

This construction is of interest for two reasons. First, though it resembles the *cai*-conditional in form, it is not a conditional. Both clauses are meant to denote real events, and the second clause (henceforth the *cai*-clause) denotes certain consequence or result following the event denoted by the first clause. Second, though this construction looks as if the first clause is the main clause and the *cai*-clause an appendix (as the English gloss might suggest), this construction, in fact, involves left adjunction of the first clause to the *cai*-clause, exactly the same as the conditionals discussed in the previous section.

The *cai*-clause can have an overt subject of its own. This indicates that the *cai*-clause is a full-fledged clause.

- (53) Zhangsan mai-le yiben xiaoshuo,
 Zhangsan buy-PERF one novel
Lisi cai faxian ta taitai bu xihuan wenxue.
 Lisi only find his wife not like literature

‘Only after Zhangsan bought a novel did Lisi find that his wife doesn’t like literature.’

Furthermore, the first clause can be appended with the temporal adverbial marker *zhihou* ‘after’. This indicates straightforwardly that the first clause of this construction is an adjunct.

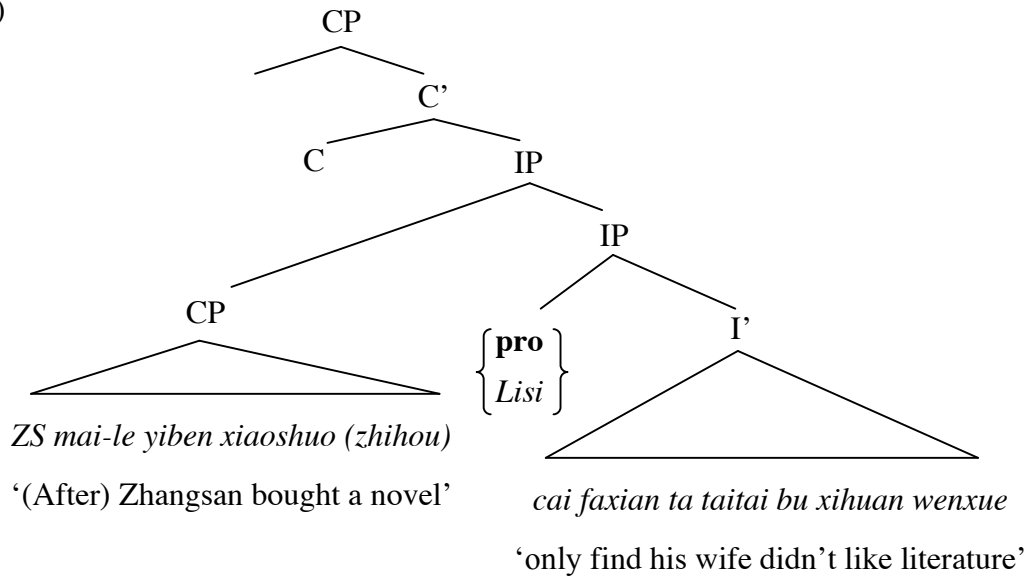
(54) Zhangsan mai-le yiben xiaoshuo zhihou,
 Zhangsan buy-PERF one novel after

(Lisi) cai faxian ta taitai bu xihuan wenxue.
 Lisi only find his wife not like literature

‘Only after Zhangsan bought a novel did he / Lisi find that his wife doesn’t like literature.’

All this confirms our claim: the first clause of the telic construction is an adverbial clause adjoined to the *cai*-clause, as follows.

(55)



Jiu also has such telic use. However, in the case of *jiu*, the adverbial marker cannot be dispensed with. only

(56) Zhangsan mai naben xiaoshuo *(zhiqian),
 Zhangsan buy that novel before

(Lisi) jiu zhidao ta taitai bu xihuan wenxue.
 Lisi then know his wife not like literature

‘Before Zhangsan bought that novel, he / Lisi [already] knew that his wife doesn’t like literature.’

In addition to *zhiqian* ‘after’ in (56) some other marker can be used as well, like *zhihou* ‘after’, *de-shihou* ‘when’, or *yi* ‘as soon as’. We will not go into the detailed phenomena of this construction. Our point is clear, however. In the telic construction, left adjunction is involved. The right clause is the main clause of the construction.

4. The Reason Constructions

4.1. Two Sentence Connectors in One Complex Sentence

In this section we discuss the reason construction in Mandarin Chinese, namely those sentences introduced by *yinwei* ‘because’ and *suoyi* ‘so’. The interesting point about this construction is that Mandarin Chinese permits the following kind of sentence.

- (57) Yinwei Zhangsan mai shu, suoyi Lisi fu qian.
 because Zhangsan buy book so Lisi pay money

‘Because Zhangsan buys books, Lisi pays the money.’ or
 ‘Zhangsan buys books, so Lisi pays the money.’

Notice that the “sentence connectors” *yinwei* ‘because’ and *suoyi* ‘so’ occur in one and the same (complex) sentence. Taiwanese students are most likely influenced by such sentences when they produce erroneous English sentences like:

- (58) *Because John entered the room, so Bill turned on the TV.

This is, of course, an ungrammatical English sentence, because the sentence connectors *because* and *so* are both conjunctions. A conjunction is a dyadic operator that takes two arguments, in the present case two propositions. The appearance of *because* excludes *so*, and vice versa.

As *yinwei* ‘because’ and *suoyi* ‘so’ can occur in one and the same (complex) sentence, they cannot be genuine conjunctions. So, what are they?

Consider the following paradigm.

- (59) Yinwei Zhangsan qu Taipei, suoyi laoshi jintian yao kaoshi.
 because Zhangsan go Taipei so teach today want exam

‘Zhangsan goes to Taipei, so the teacher is going to give an exam today.’

- (60) Zhangsan qu Taipei, suoyi laoshi jintian yao kaoshi.
 Zhangsan go Taipei so teach today want exam

‘Zhangsan goes to Taipei, so the teacher is going to give an exam today.’

- (61) Yinwei Zhangsan qu Taipei, laoshi jintian yao kaoshi.
 because Zhangsan go Taipei teach today want exam

‘Zhangsan goes to Taipei, so the teacher is going to give an exam today.’

- (62) *Zhangsan qu Taipei, laoshi jintian yao kaoshi.
 Zhangsan go Taipei teach today want exam

Either *yinwei* ‘because’ or *suoyi* ‘so’ suffices to make a (complex) sentence a reason construction; only when both elements are gone is the sentence unacceptable (namely, not a legitimate reason construction anymore).

Yinwei ‘because’ may also occur in the second clause of the construction.⁵

- (63) Laoshi jintian yao kaoshi, yinwei Zhangsan qu Taipei,
 teach today want examin because Zhangsan go Taipei

‘The teacher is going to give an exam today, because Zhangsan goes to Taipei.’

Now the real intriguing thing about this construction is that the second clause seems to be always the main clause, and the first clause is an adjunct. First, in the *yinwei A suoyi B* construction, the first clause cannot take the A-not-A operator, but the second clause can.

- (64) *Yinwei Zhangsan qu-bu-qu Taipei,
 because Zhangsan go-not-go Taipei
 suoyi laoshi jintian yao kaoshi?
 so teach today want exam

- (65) Yinwei Zhangsan qu Taipei,
 because Zhangsan go Taipei
 suoyi laoshi jintian yao-bu-yao kaoshi?
 so teach today want-not-want exam

‘Because Zhangsan goes to Taipei – is the teacher going to give an exam today?’

Also, the test of the CSC effect shows that the two clauses of the *yinwei A suoyi B* construction involves adjunction rather than conjunction.

- (66) Naben shu, wo tingshuo [(yinwei) Zhangsan mai-le e,
 that book I heard because Zhangsan buy-PERF
 suoyi Lisi hen bu gaoxing]
 so Lisi very not happy

‘That book, I heard that [because Zhangsa bought [it], Lisi is is not pleased].’

Second, in the *B yinwei A* construction, the first clause appears to be an adjunct as well.

⁵ *Suoyi* ‘so’ can precede *yinwei* ‘because’ only when it occurs in an embedded context, as in (i), where the clause that *suoyi* ‘so’ occurs in is the sentential subject of the copula *shi* ‘be’.

- (i) Zhangsan suoyi qu Taipei, shi yinwei laoshi yao kaoshi
 Zhangsan so go Taipei be because teacher want exam

‘That Zhangsan goes to Taipei is because the teacher is going to give an exam.’

We will not go into this type of construction in this paper.

(67) *Laoshi jintian yao-bu-yao kaoshi. yinwei Zhangsa qu Taipei?
 teach today want-not-want examination because Zhangsan go Taipei?

(68) Laoshi jintian yao kaoshi. yinwei Zhangsan qu-bu-qu Taipei?
 teach today want examination because Zhangsan go-not-go Taipei?

‘The teacher is going to give an exam today—is it because Zhangsan goes to Taipei or because he doesn’t go to Taipei?’

(69) Naben shu, wo tingshuo [Zhangsan mai-le e,
 that book I heard Zhangsan buy-PERF
 yinwei Lisi hen bu gaoxing].
 because Lisi very not happy

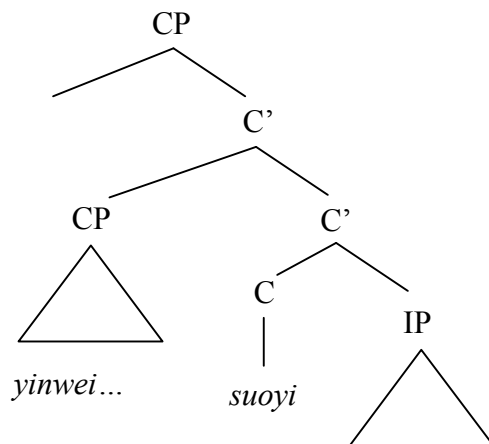
‘That book, I heard that [Zhangsan bought [it], because Lisi is not pleased.]’

These phenomena indicate that *yinwei* ‘because’ and *suoyi* ‘so’ are not conjunctions. They license a syntactic adjunct. The syntactic adjunct, furthermore, always adjoins from the left, and the clause at the right is always the major constituent of the construction, regardless which “sentence connector” is used.

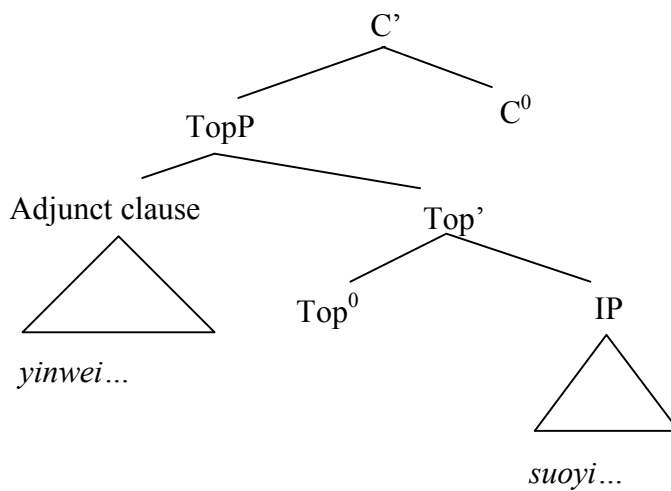
4.2. The Analysis

What are *yinwei* ‘because’ and *suoyi* ‘so’? There have been two analyses in literature, Tang (1990) and Gasde and Paul (1996).

(70) Tang (1990: 122)



(71) Gasde and Paul (1996: 271)

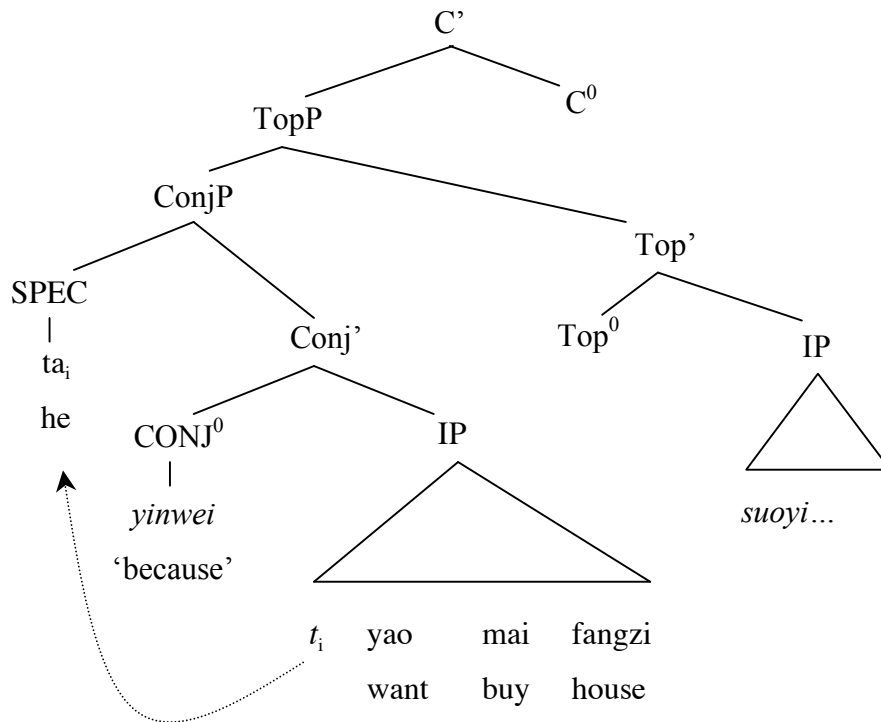


Both analyses regard the *yinwei*-clause as some sort of adjunct; this agrees with the evidence presented above. However, the two analyses have different treatments on the morphemes *yinwei* ‘because’ and *suoyi* ‘so’. In Tang (1990), *yinwei* ‘because’ and *suoyi* ‘so’ are both analyzed as complementizers; on the other hand, Gasde and Paul (1996) consider *yinwei* ‘because’ a conjunction and *suoyi* ‘so’ an adverb. The reason to treat *yinwei* ‘because’ as a conjunction, according to Gasde and Paul (1996), is that *yinwei* ‘because’ may occur between the subject and the predicate of the *yinwei*-clause, as in the following example.

(72) Ta yinwei yao mai fangzi, suoyi ...
 he because want buy house so
 ‘Because he plans to buy a house, ...’

Gasde and Paul suggest that *yinwei* ‘because’, as a conjunction, takes the reason-clause as its complement conjunct. *Yinwei* ‘because’ occurs between the subject and the predicate in (72) because the subject argument of the reason clause raises to the specifier of the conjunction phrase. (73) is a finer representation of Gasde and Paul’s analysis (adapted from (22), Gasde and Paul 1996: 273).

(73)



But this analysis is problematic. The reason expression that *yinwei* ‘because’ introduces can be a clause, but it can also be a nominal. When *yinwei* ‘because’ takes a nominal, it can still occur between the subject and the predicate.

(74) Yinwei najian shi, Zhangsan bu neng lai.
 because that event Zhangsan not can come
 ‘Because [of] that event, Zhangsan cannot come.’

(75) Zhangsan yinwei najian shi bu neng lai.
 Zhangsan because that event not can come
 ‘Zhangsan cannot come because [of] that event.’

Sentences like (75) doesn’t seem likely to involve raising of any kind from within the nominal *najian shi* ‘that event’. Further evidence against Gasde and Paul’s analysis comes from *suoyi* ‘so’. *Suoyi* ‘so’ may appear when *yinwei* ‘because’ occurs between the subject and the predicate, but in that case the *suoyi*-clause cannot take an independent subject.

(76) Zhangsan yinwei [najian shi] / [e yao hui jia]
 Zhangsan because that event want go home
 suoyi bu neng lai.
 so not can come
 ‘Zhangsan cannot come because [[of] that event] / [[he] plans to go home.’

- (77) *Zhangsan yinwei [najian shi] / [e yao hui jia]
 Zhangsan because that event want go home
 suoyi Lisi bu neng lai.
 so Lisi not can come

If the *yinwei*-clause is a ConjP, why would a raising movement internal to this ConjP affects the subject-taking ability of the clause introduced by *suoyi* ‘so’, which is presumably an independent clause under Gasde and Paul’s analysis? In conclusion, Gasde and Paul’s analysis doesn’t seem to be on the right track.

All these phenomena, we believe, indicate that *yinwei* is an adverbial marker that takes a clause or a nominal as complement, similar to *for* in English. So *yinwei* has a dual status: it can be a preposition or a complementizer, depending on its complement.⁶ It heads an adverbial phrase, which adjoins to the main clause of the construction. The adjunction site can be either IP (when the *yinwei*-expression occurs in the initial position of the sentence) or I’ (when the *yinwei*-expression occurs between the subject and the predicate). This analysis accounts for the two problems that we raised against Gasde and Paul’s analysis. First, there is no raising in the first place, so there is no problem when *yinwei* ‘because’ takes a nominal as complement. Second, (77) is ungrammatical because the *yinwei*-expression is adjoined between the subject and the predicate of the main clause, and, consequently, *Lisi* becomes an unlicensed subject.

In the *B yinwei A* construction, *yinwei* is a complementizer. It semantically licenses a result clause, namely B. In the *yinwei A (suoyi) B* construction, *(suoyi) B* provides the required result. This licensing is semantic in nature, because this licensing does not determine the syntactic structure, nor is it determined by the syntactic structure.

Notice that in the *B yinwei A* construction *yinwei* ‘because’ has to be a complementizer, not a preposition, because in this construction A is the main clause of the construction, and a nominal cannot be the main clause of a construction. A piece of evidence is that in the *B*

⁶ Sometimes the *yinwei*-clause behave as an independent conjunct in a conjunction structure:

- (i) Zhangsan bu hui [[yinwei meiyou luqu] er [bu kaixin]]
 Zhangsan not will because haven-not admitted and not happy
 ‘Zhangsan will not [feel unhappy for not being admitted].’

This kind of example has certain restriction, though. For instance, subject extraction seems to be a required condition for the conjunctive *yinwei*-clause.

- (ii) Zhangsan yinwei hen youqian, er bu yuanyi zuo gongche.
 Zhangsan because very rich and not willing take bus
 ‘Zhangsan doesn’t want to take a bus because he is rich.’

- (iii) *Yinwei Zhangsan hen youqian, er Lisi bu yuanyi zuo gongche.
 because Zhangsan ery rich and Lisi not willing take bus
 ‘(Intended) Lisi doesn’t want to take a bus because Zhangsan is rich.’

yinwei A construction, the position of *yinwei* ‘because’ is fixed. This is what we expect of a complementizer.

- (78) Zhangsan bu neng lai, yinwei Lisi qu Taipei.
 Zhangsan not can come because Lisi go Taipei
 ‘Zhangsan cannot come, because Lisi goes to Taipei.’

- (79) *Zhangsan bu neng lai, Lisi yinwei qu Taipei.
 Zhangsan not can come Lisi because go Taipei

Only in the *yinwei* A (*suoyi*) B construction can *yinwei* ‘because’ occur between the subject and the predicate, since in that case the *yinwei*-expression as a whole is an adjunct, adjoined between the subject and the predicate of the main clause.

What about *suoyi* ‘so’? Since *yinwei* ‘because’ alone suffices to make a (complex) sentence a reason construction, *suoyi* looks redundant. It is likely that *suoyi* is an adverb. It needs an antecedent reason expression. In the (*yinwei*) A, *suoyi* B construction, A is the required reason expression. The reason expression can entirely precede the main clause, as in (80). It can also occur between the subject and the predicate of the main clause, as in (81)

- (80) Yinwei Zhangsan chu-le wenti / Zhangsan-de wenti,
 because Zhangsan have-PERF problem Zhangsan’s problem
 suoyi Lisi qu-le Taipei
 so Lisi go-PERF Taipei

‘Because Zhangsan is having a problem / because of Zhangsan’s problem, Lisi went to Taipei.’

- (81) Lisi yinwei Zhangsan chu-le wenti / Zhangsan-de wenti,
 Lisi because Zhangsan have-PERF problem Zhangsan’s problem
 suoyi qu-le Taipei
 so go-PERF Taipei

‘Because Zhangsan is having a problem / because of Zhangsan’s problem, Lisi went to Taipei.’

In (81) the *yinwei*-expression adjoins to the I’ of the main clause. *Suoyi* ‘so’ in this sentence, therefore, cannot be in the initial position of the sentence; it probably adjoins to I’ as well. But this poses a problem. If I’-adjunction is possible for *suoyi* ‘so’, why is (82) ungrammatical?

- (82) *Yinwei Zhangsan chu-le wenti / Zhangsan-de wenti,
 because Zhangsan have-PERF problem Zhangsan's problem
 Lisi suoyi qu-le Taipei
 Lisi so go-PERF Taipei

‘Because Zhangsan is having a problem / because of Zhangsan’s problem, Lisi went to Taipei.’

A possible explanation is that *suoyi* ‘so’ must be adjacent to the reason expression. Under this explanation, (82) is ungrammatical because *Lisi* intervenes between the reason expression and *suoyi*. This explanation also accounts for the contrast between (83) and (84).

- (83) Yinwei Zhangsan chu-le wenti,
 because Zhangsan have-PERF problem,
 wo tingshuo Lisi qu-le Taipei
 I heard Lisi go-PERF Taipei

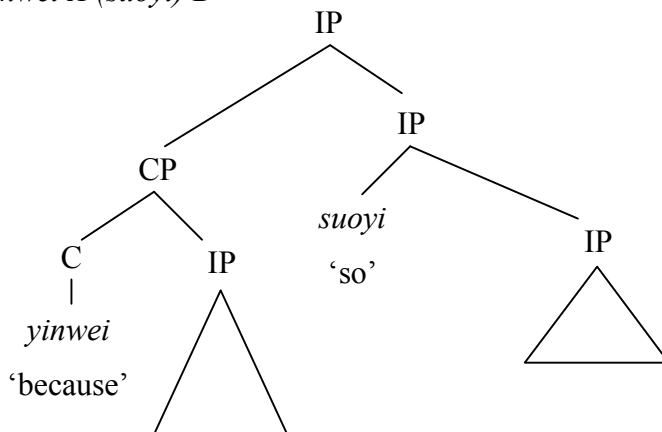
‘Because Zhangsan is having a problem, I heard that Lisi went to Taipei.’

- (84) *Yinwei Zhangsan chu-le wenti,
 because Zhangsan have-PERF problem,
 wo tingshuo suoyi Lisi qu-le Taipei
 I heard so Lisi go-PERF Taipei

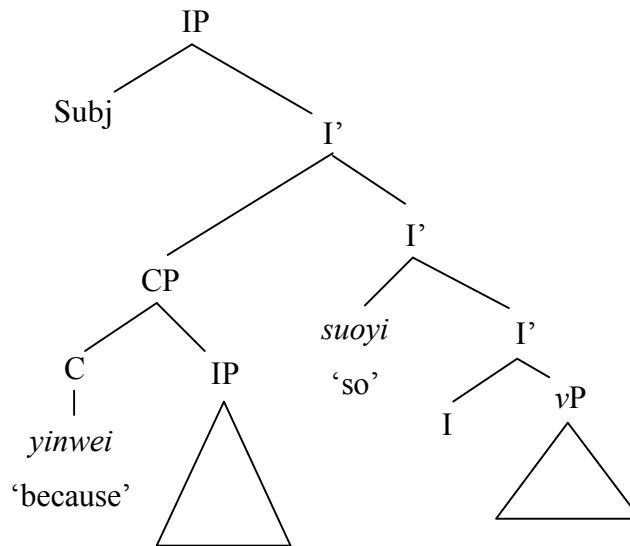
There is no reason for the ungrammaticality of (84) except that *suoyi* ‘so’ is separate from the reason expression introduced by *yinwei* ‘because’.

Here we provide the structural analyses for the various reason constructions in Mandarin Chinese. (In (85) and (86), the CP headed by *yinwei* ‘because’ can be replaced by PP with *yinwei* ‘because’ as P taking a DP complement).

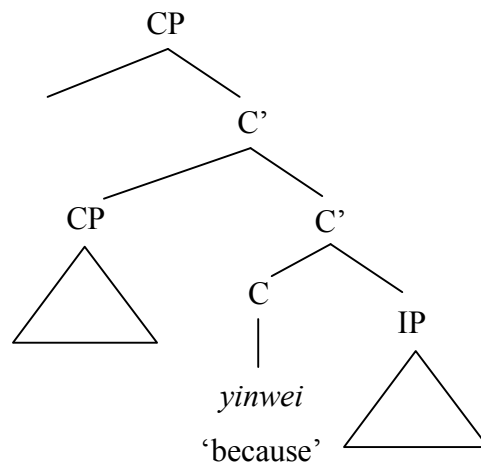
- (85) *Yinwei* A (*suoyi*) B



(86) Subj-[*yinwei*-A]-Predicate



(87) *B yinwei A*



In conclusion, the reason constructions in Mandarin Chinese involve left adjunction. The right clause is the main clause of the construction, regardless of the “sentence connectors” employed in the construction.

5. The Concessive Constructions

In this section we look at the concessive construction in Mandarin Chinese. Below are examples of this construction.

(88) Suiran Zhangsan qu Taipei, laoshi rengran yao kaoshi.
 though Zhangsan go Taipei teacher still want exam

‘Though Zhangsan goes to Taipei, the teacher still wants to give an exam.’

- (89) Jishi Zhangsan qu Taipei, laoshi rengran yao kaoshi.
 even-if Zhangsan go Taipei teacher still want exam

‘Even if Zhangsan goes to Taipei, the teacher still wants to give an exam.’

The element *rengran* ‘still’ can be substituted with *haishi* ‘still’ without change in meaning.

The concessive construction comes in two types. The first type is the concessive construction in the narrow sense, such as (88). In this type the element *suiran* ‘though’ is used. The clause introduced by *suiran* ‘though’ is presumed to denote a real event. The second type is exemplified by (89), which can be called the “concessive conditional.” In the concessive conditional a different introducing element is used, either *jishi* ‘even if’ or *jiusuan* ‘even if’. The clause they introduced doesn’t denote a real event; it corresponds to the antecedent clause of a conditional.⁷ The common feature of these two types of concessive is the occurrence of the element *rengran* ‘still’ in the second clause.

Rengran ‘still’ can only occur between the subject and the predicate. *Suiran* ‘though’ and *jishi* ‘even if’, on the other hand, can occur in the initial position, or between the subject and the predicate, of the concessive clause.

- (90) *Suiran / jishi Zhangsan qu Taipei, rengran laoshi yao kaoshi.
 though even-if Zhangsan go Taipei still teacher want exam

- (91) Zhangsan suiran / jishi qu Taipei, laoshi rengran yao kaoshi.
 Zhangsan though even-if go Taipei teacher still want exam

‘Though / even if Zhangsan goes to Taipei, the teacher still wants to give an exam.’

The A-not-A test indicates that the first clause (i.e. the concessive clause) is a syntactic adjunct.

- (92) *Suiran / jishi Zhangsan qu-bu-qu Taipei,
 though even-if Zhangsan go-not-go Taipei
 laoshi rengran yao kaoshi?
 teacher still want exam

- (93) Suiran / jishi Zhangsan qu Taipei,
 though even-if Zhangsan go Taipei
 laoshi rengran yao-bu-yao kaoshi?
 teacher still want-not-want exam

‘Though / even if Zhangsan goes to Taipei, does the teacher still wants to give an exam?’

⁷ *Jishi* doesn’t necessarily means ‘even if’; sometimes it can mean ‘even though’ or ‘even when’. In such cases the clause *jishi* introduces denotes a real event. We ignore this complication in the following discussion.

The test of the CSC effect also confirms that the concessive construction involves adjunction.

- (94) Naben shu, wo tingshuo [suiran / jishi Zhangsan mai-le e
 that book I heard though even-if Zhangsan buy-PERF
 Lisi rengran hen bu gaoxing].
 Lisi still very not happy
 ‘That book, I heard that [though / even if Zhangsan buys [it], Lisi is still not
 pleased.]’

In the concessive construction, the concessive force appears to originate from the element *rengran* ‘still’. That is, the element *rengran* ‘still’ alone can make a (complex) sentence a concessive construction. The presence of *suiran* ‘though’ or *jishi* ‘even of’ alone doesn’t make a grammatical concessive construction.

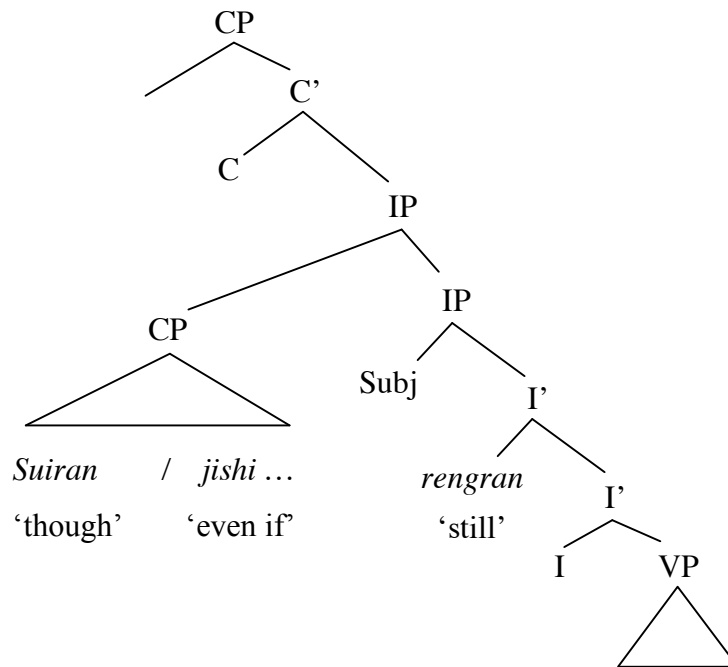
- (95) Zhangsan qu Taipei, laoshi rengran yao kaoshi.
 Zhangsan go Taipei, teacher still want exam
 ‘[Though / even if] Zhangsan goes to Taipei, the teacher still wants to give an exam.’

- (96) *Suiran / jishi Zhangsan qu Taipei, laoshi yao kaoshi.
 though even-if Zhangsan go Taipei teach want exam

Note incidentally that (95) is ambiguous; it can be a *suiran* ‘though’ concessive or a *jishi* ‘even if’ concessive. Which one is meant by the speaker depends on the context.

The above facts indicate that the concessive clause is an adjunct clause licensed by the element *rengran* ‘still’. *Suiran* ‘though’ and *jishi* are adverbs on the concessive clause. *Rengran* ‘still’ is an I’-adverb licensing a concessive clause, on a par with the conditional morpheme *jiu* discussed in section 2.

(97)



Now we move to a different set of phenomena. Some concessive sentences can be “reversed,” for instance the concessive conditional, as in (98). The *suiran* ‘though’ concessive doesn’t seem apt for reversion; the resulting sentence is somewhat degraded, and the *suiran*-clause sounds like a supplementary epithetic expression. See (99).

(98) Laoshi yao kaoshi, jishi Zhangsan qu Taipei.
 teacher want exam even-if Zhangsan go Taipei

‘The teacher wants to give an exam, even if Zhangsan goes to Taipei.’

(99) ?Laoshi yao kaoshi, suiran Zhangsan qu Taipei.
 teacher want exam though Zhangsan go Taipei

‘The teacher wants to give an exam—though Zhangsan goes to Taipei.’

But even if we consider the *jishi* ‘even if’ concessive only, such “inversion” still doesn’t seem to originate from a syntactic operation of inversion. There are several reasons for this claim. First, *rengran* ‘still’ doesn’t appear in these sentences. If a syntactic operation of inversion is at work, the appearance of *rengran* ‘still’ would be acceptable, because it is an indispensable part of the “underlying structure” of the concessive. But the fact is that the appearance of *rengran* causes the sentence to become seriously degraded.

(100) ??Laoshi rengran yao kaoshi, jishi Zhangsan qu Taipei.
 teacher still want exam even-if Zhangsan go Taipei

‘The teacher wants to give an exam, even if Zhangsan goes to Taipei.’

Second, both clauses of the “reversed” concessive conditional can take the A-not-A operator.

- (101) Laoshi yao-bu-yao kaoshi, jishi Zhangsan qu Taipei?
 teacher want-not-want exam even-if Zhangsan go Taipei
 ‘Does the teacher want to give an exam, even if Zhangsan goes to Taipei?’

- (102) Laoshi yao kaoshi, jishi Zhangsan qu-bu-qu Taipei?
 teacher want exam even-if Zhangsan go-not-go Taipei
 ‘The teacher wants to give an exam—even if Zhangsan goes to Taipei or not?’

Third, the test of the CSC effect shows that the “reversed” concessive conditional involves a conjunction structure. In other words, non-across-the-board topicalization of an element out of the construction leads to ungrammaticality.

- (103) *Naben shu, wo tingshuo [Zhangsan mai-le e,
 that book I heard Zhangsan buy-PERF
 jishi Lisi bu gaoxing].
 even-if Lisi not happy

All these phenomena indicate that in such “inversed” concessive, the two clauses are conjuncts of a conjunction structure. Though the *suiran* ‘though’ concessive is somewhat degraded when “inversed,” it exhibits the same result when tested; namely it has a conjunction structure (in spite of the less clear-cut grammatical judgments).

- (104) ?Laoshi yao-bu-yao kaoshi, suiran Zhangsan qu Taipei?
 teacher want-not-want exam though Zhangsan go Taipei
 ‘Does the teacher want to give an exam—though Zhangsan goes to Taipei?’

- (105) ?Laoshi yao kaoshi, suiran Zhangsan qu-bu-qu Taipei?
 teacher want exam though Zhangsan go-not-go Taipei
 ‘The teacher wants to give an exam—though Zhangsan goes to Taipei or not?’

- (106) *Naben shu, wo tingshuo [Zhangsan mai-le e,
 that book I heard Zhangsan buy-PERF
 suiran Lisi bu gaoxing].
 though Lisi not happy

So, the “inversed” concessive construction does not really originate from a syntactic operation of inversion; instead, it has its own way of structure building, namely, conjunction of the two clauses.

One last issue about the concessive construction is the following. Sometimes one finds sentences like (107):

- (107) Suiran laoshi yao kaoshi,
 though teacher want exam
danshi / raner Zhangsan haishi qu Taipei.
 but however Zhangsan still go Taipei

‘Though the teacher wants to give an exam, yet Zhangsan still goes to Taipei.’

One may quickly conclude that, since *danshi* ‘but’ and *raner* ‘however, yet’ are apparently conjunctions, (107) must involve conjunction of the two clauses. However, tests show that (107) still has an adjunction structure.

- (108) *Suiran laoshi yao-bu-yao kaoshi,
 though teacher want-not-want exam
 danshi / raner Zhangsan haishi qu Taipei?
 but however Zhangsan still go Taipei

- (109) Suiran laoshi yao kaoshi,
 though teacher want exam
 danshi / raner Zhangsan haishi qu-bu-qu Taipei?
 but however Zhangsan still go-not-go Taipei

‘Though the teacher wants to give an exam, does Zhangsan still go to Taipei?’

- (110) Naben shu, wo tingshuo [suiran Zhangsan mai-le e,
 that book I heard though Zhangsan buy-PERF
 danshi / raner Lisi haishi bu gaoxing].
 but however Lisi still not happy

‘That book, I heard that [though Zhangsan bought [it], yet Lisi is still not pleased].’

Danshi ‘but’ and *raner* ‘however, yet’ do not necessarily perform conjunction functions. In fact, we suspect that they are complementizers like *yinwei* ‘because’. Semantically they license an antithetic proposition, but syntactically they are monadic.

In conclusion, the concessive constructions in Mandarin Chinese are still predominantly of the left adjunction structure. Those “inversed” cases don’t result from syntactic movement; instead, they are of the conjunction structure.

6. The ‘Unless’-Conditional

The ‘unless’-conditional refers to the following kind of sentence, which contains the elements *chufei* ‘unless’ and *fouze* ‘otherwise’.

- (111) Chufei laoshi yao kaoshi, fouze Zhangsan yao qu Taipei.
 unless teacher want exam otherwise Zhangsan want go Taipei
 ‘Unless the teacher wants to give an exam, Zhangsan wants to go to Taipei.’

This construction is a conditional construction because the *chufei* ‘unless’ clause doesn’t denote a real event. In the *chufei A fouze B* construction, A is a pre-condition for $\neg B$ to be true (Higginbotham 2003).

In English *unless* and *otherwise* are sentence connectors that connect two sentences. They do not occur in the same (complex) sentence, just like *because* and *so*.

- (112) Unless John is in his room, Bill will not turn on the TV.
 (113) John has to turn on the TV, otherwise Bill will not be pleased.

But in Mandarin Chinese *chufei* ‘unless’ and *fouze* ‘otherwise’ can occur in the same (complex) sentence, as in (111).

Chufei ‘unless’ or *fouze* ‘otherwise’ alone can make a (complex) sentence an ‘unless’-conditional.⁸

- (114) Laoshi yao kaoshi, fouze Zhangsan yao qu Taipei.
 teacher want exam otherwise Zhangsan want go Taipei
 ‘The teacher has to give an exam, otherwise Zhangsan wants to go to Taipei.’
 (115) Chufei laoshi yao kaoshi, Zhangsan (yiding) hui qu Taipei.
 unless teacher want exam Zhangsan definitely will go Taipei
 ‘Unless the teacher wants to give an exam, Zhangsan definitely will go to Taipei.’

In addition, the *chufei* ‘unless’ clause can be “reversed.”

⁸ There is a complication here. When an ‘unless’-conditional contains *fouze* ‘otherwise’ only but not *chufei* ‘unless’ (as in (114)), the antecedent clause has to be interpreted as an imperative. If *chufei* ‘unless’ is present, the antecedent clause doesn’t have to be an imperative. The contrast between the following two examples illustrate this point clearly: in (i) and (ii) the predicate of the antecedent clause is *si* ‘die / be dead’, which cannot be construed as an imperative (to make an imperative, one has to say *qu si* ‘go die’).

- (i) Chufei Zhangsan si, fouze Lisi na-bu-dao qian.
 unless Zhangsan die otherwise Lisi cannot-get money
 ‘Unless Zhangsan dies, Lisi cannot get the money.’
 (ii) *Zhangsan si, fouze Lisi na-bu-dao qian.
 Zhangsan die otherwise Lisi cannot-get money

We will not deal with this complication here.

- (116) Zhangsan yao qu Taipei, chufei laoshi yao kaoshi.
 Zhangsan want go Taipei unless teacher want exam

‘Zhangsan wants to go to Taipei, unless the teacher wants to give an exam.’

As expected, tests show that the ‘unless’-conditional involves left adjunction. First we look at the test of the A-not-A operator. The left clause invariably resists taking the A-not-A operator, but the right clause can take it. This is the case with the *chufei A fouze B* construction:

- (117) *Chufei laoshi yao-bu-yao kaoshi,
 unless teacher want-not-want exam
 fouze Zhangsan yao qu Taipei?
 otherwise Zhangsan want go Taipei

- (118) Chufei laoshi yao kaoshi,
 unless teacher want exam
 fouze Zhangsan yao-bu-yao qu Taipei?
 otherwise Zhangsan want-not-want go Taipei

‘Unless the teacher wants to give an exam—does Zhangsan want to go to Taipei?’

This is also the case with the *B chufei A* construction:

- (119) *Zhangsan yao-bu-yao qu Taipei,
 Zhangsan want-not-want go Taipei
 chufei laoshi yao kaoshi?
 unless teacher want exam

- (120) Zhangsan yao qu Taipei,
 Zhangsan want go Taipei
 chufei laoshi yao-bu-yao kaoshi?
 unless teacher want-not-want exam

‘Zhangsan wants to go to Taipei, unless the teacher wants to give an exam—or not?’

The test of the CSC effect also indicates that these two constructions have an adjunction structure.

- (121) Naben shu, wo tingshuo [chufei Zhangsan mai-le e
 that book I heard unless Zhangsan buy-PERF
 fouze Lisi hui bu gaoxing].
 otherwise Lisi will not happy

‘That book, I heard that [unless Zhangsan buys [it], Lisi will not be pleased].’

- (122) Naben shu, wo tingshuo [Zhangsan hui mai e,
 that book I heard Zhangsan will buy
 chufei Lisi bu gaoxing].
 unless Lisi not happy

‘That book, I heard that [Zhangsan will buy [it], unless Lisi is not pleased].’

Now we examine the grammatical categories of *chufei* ‘unless’ and *fouze* ‘otherwise’. The above discussions suggest that the *chufei A fouze B* construction is quite parallel with the *yinwei A suoyi B* construction. But in fact there are important differences. For instance, *yinwei* ‘because’ can take a nominal as complement, but *chufei* ‘unless’ can only take a clause. Also, we notice that (123) is an acceptable sentence, but (124) is not (cf. (77) in section 4.2).

- (123) Zhangsan chufei xian fu qian, fouze Lisi na-bu-dao shu.
 Zhangsan unless first pay money otherwise Lisi cannot-get book

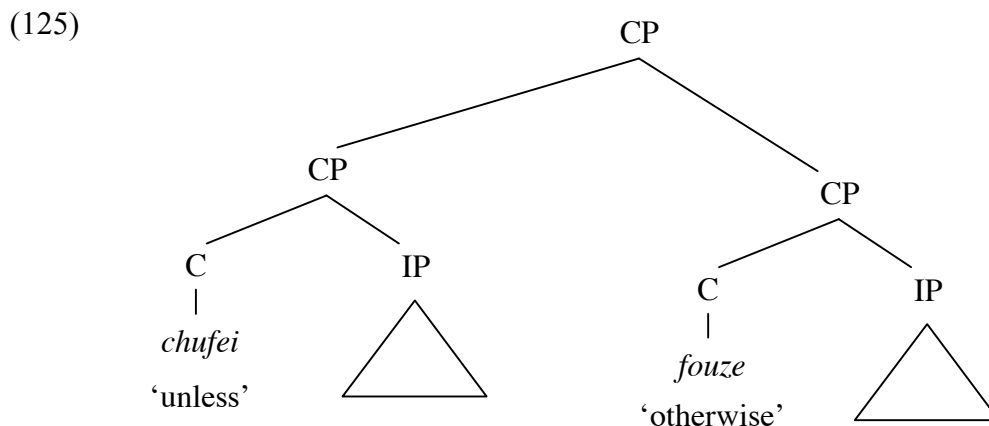
‘Unless Zhangsan pays the money first, Lisi will not get the book.’

- (124) *Zhangsan yinwei xian fu qian, suoyi Lisi na-bu-dao shu.
 Zhangsan because first pay money so Lisi cannot-get book

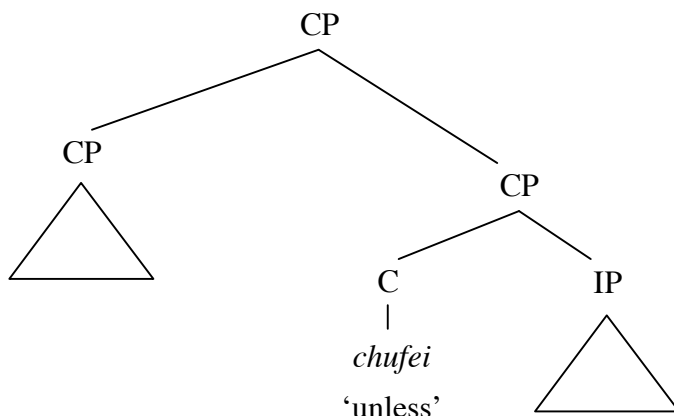
‘Because Zhangsan pays the money first, Lisi cannot get the book.’

(124) is unacceptable because when the *yinwei*-expression occurs between a subject and a predicate, it is in fact adjoined to the subject and the predicate of the main clause, and this renders *Lisi* in (124) an unlicensed subject (see the discussion in section 4.2). But in (123) the appearance of *Lisi* is acceptable. This indicates that the *chufei*-expression in (123) doesn’t adjoin to a position between the subject and the predicate of the main clause. Thus *Zhangsan* in (123), most likely, is a topicalized element out of the *chufei* ‘unless’ clause, with no direct bearing on the internal makeup of the *fouze* ‘otherwise’ clause.

We suggest that both *chufei* ‘unless’ and *fouze* ‘otherwise’ are complementizers. They introduce a clause and license an adjunct clause. We therefore propose the following analyses for the ‘unless’-conditional in Mandarin Chinese.



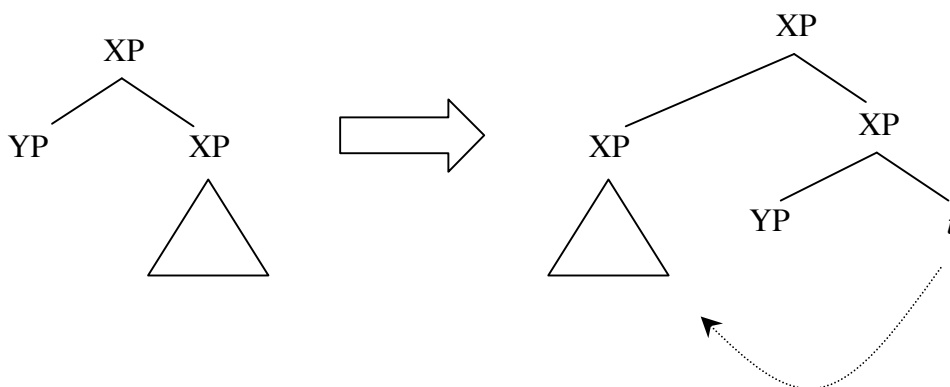
(126)



7. Concluding Remarks

In this paper we examined a number of complex sentences in Mandarin Chinese, and showed that they are predominantly of the left adjunction structure. Interesting theoretical questions follow from this discovery. In the beginning of this paper we showed that in Mandarin Chinese, an adverbial clause can only occur to the left of the main clause; inversion is by and large disfavored (see (3) and (4)). Now we can formulate a tentative hypothesis to account for this phenomenon. If the complex sentences in Mandarin Chinese are generally of the left adjunction structure, it is natural that “inversion” is not permitted, since the raising of the main clause will result in a presumably ungrammatical structure, as demonstrated in the following diagrams:

(127)



Now the resulting structure would be in such a situation that the adverbial clause YP is adjoined to a maximal projection whose substantial content is gone. Presumably this is not a good structure. An adverbial needs licensing from certain head; if the head is gone, it is doubtful that the licensing would still remain in force.

This is only be part of the story, however. Remember that some complex sentences in Mandarin Chinese permit “inversion,” for instance the alternation between the *yinwei A suoyi B* (‘because A so B’) construction and the *B yinwei A* (‘B because A’) construction. We showed that these “inversions” do not involve syntactic movement. These alternations can be

derived in part from the fact that those “sentence connectors” such as *yinwei* ‘because’, are not real sentence connectors; they are just added to the clauses as extra material, so to speak. The “inversion” constructions have their own ways of merger and structure building. However, why is right adjunction not an option? For example, why doesn’t the *yinwei* ‘because’ clause simply adjoin from the right in the *B yinwei A* construction, on a par with the *yinwei A suoyi B* construction, in which it adjoins from the left? This question reminds one of an intriguing phenomenon that Tai (1985) points out: a locative expression in Mandarin Chinese is construed as an locative adverbial in the pre-verbal position but is construed as a complement-like goal expression in the post-verbal position:

(128) Zhansagn zai chuang-shang tiao.
 Zhangsan at bed-on jump
 ‘Zhangsan was jumping in the bed.’

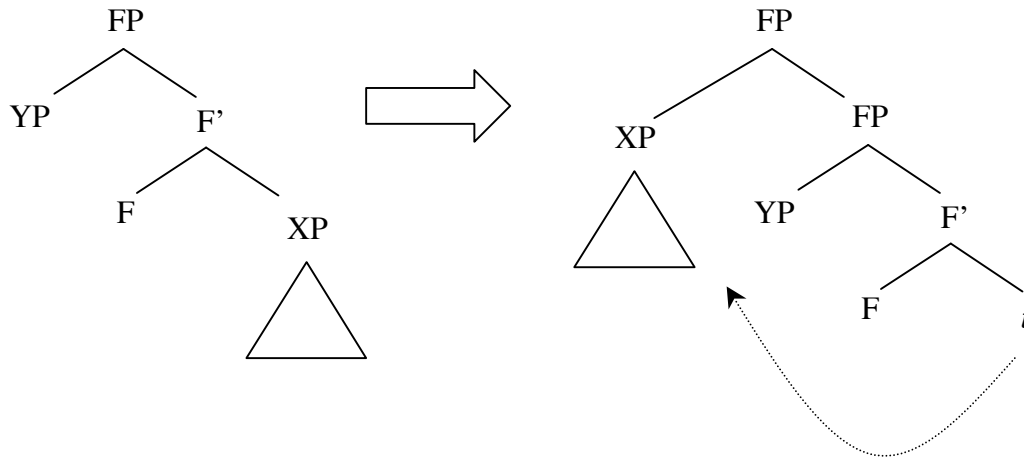
(129) Zhangsan tiao zai chuang-shang.
 Zhangsan jump at bed-on
 ‘Zhangsan jumped into the bed.’

It has long been observed that adverbials do not occur in post-verbal position in Chinese sentences (see, for example, Tang 1990, 2001 and references cited therein). Why can’t the locative expression *zai chuang-shang* ‘in the bed’ remain an adverbial in (129)? It looks as if some kind of “configurational” or “topographic” requirement imposes itself upon the Mandarin Chinese sentences, which mandates that all elements following the main verb of the sentence be merged lower than the main verb as complement. Such requirement—if it exists—seems to be responsible for the left adjunction of the clauses in Chinese complex sentences.

Of course we don’t need to make it so mysterious. One simple way to look at the question is to suppose that Kayne’s (1994) Linear Correspondence Axiom (LCA) is at work in mandarin Chinese in a transparent way. The merger of elements in the Chinese phrase structure has to be this way so as to result in successful linearization. See Moro (2000) for the claim that linearization can be a substantial force that helps to shape the structure of a sentence.

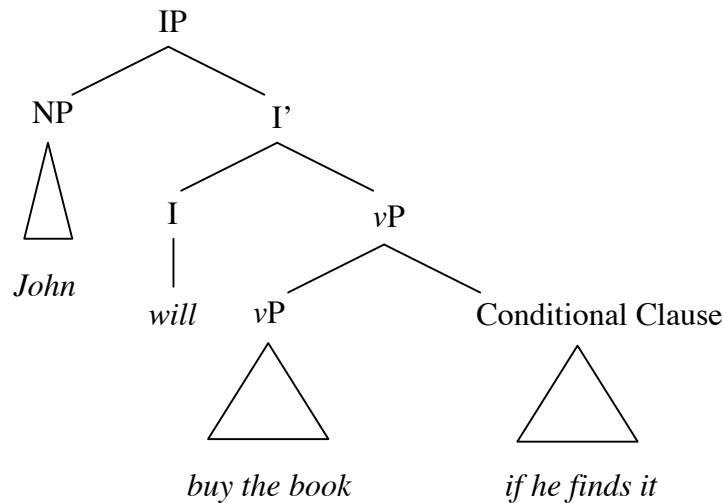
But the problem now shifts to English. English permits “inversion” of adverbial clause (see (1) and (2)). One possibility is to adopt the Kanyean approach (see in particular Cinque (1999)) and assume that an adverbial clause is hosted by certain functional projection FP as specifier. When inversion applies, the complement of FP adjoins to this FP, which the head F remain unmoved. This idea is illustrated in the following diagrams.

(130)



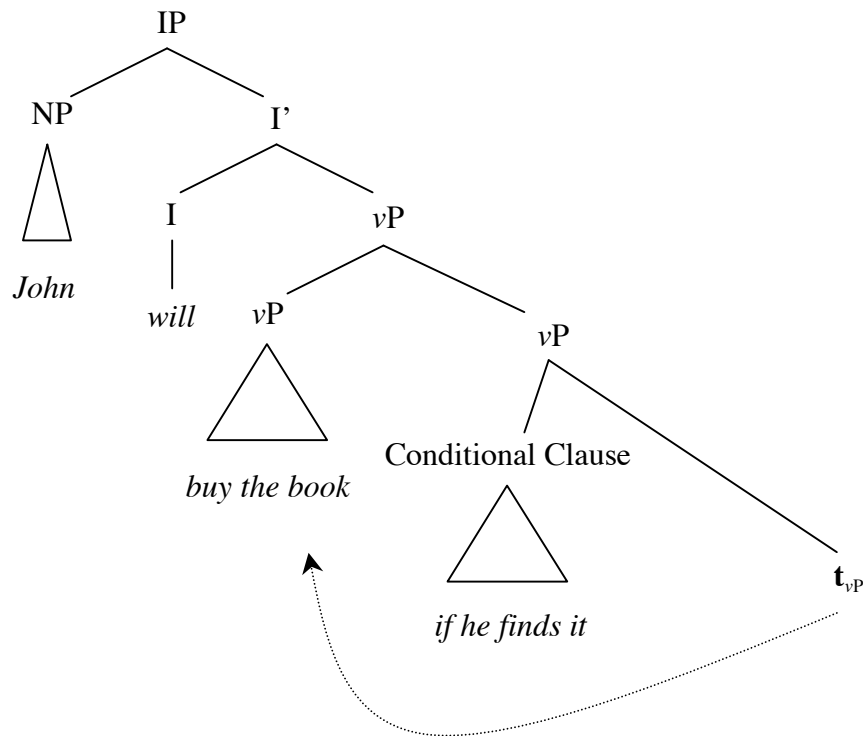
If this idea is feasible, then the difference between Mandarin Chinese, on the one hand, and English, on the other, boils down to the difference between pure adjunction and the function of FP. (See Tang (2001) for a claim similar to this.) But again, problems do not stop here. Some researchers have argued that certain adverbial clauses in English, such as the conditional clause, is based-generated to the right of the main clause (see, for example, Iatridou (1994), Haegeman (2003), and Higginbotham (2003) for details and references). Haegeman (2003), in particular, proposes that the English conditional *John will buy the book if he finds it* should be analyzed as in (131) (adapted from (22a) of Haegeman (2003)), in which the conditional clause adjoins to vP (cf. Nissenbaum 2000).

(131)



Now, when the *if*-clause raises, there is no problem; it simply adjoins to IP/CP. But when it stays within the vP, it will cause problems with linearization, since it is a right-adjunct. Considering this difficulty, we tentatively suggest the following derivation on the basis of (131).

(132)



Since the elements of a phrase structure are unordered in core computation, we assume that (131) is the right underlying structure, with the understanding that the conditional clause and the vP are unordered. To meet linearization, however, something must be done: the vP raises up and adjoins to itself, crossing the conditional clause. (We need to assume that if raising doesn't take place, the intervention of the conditional clause between the modal *will* and the vP will somehow result in ungrammaticality. The nature of such ungrammaticality remains unclear to us, though.) Now the vP is hierarchically higher than the conditional clause; the correct word order is derived.

This analysis has the following features. The raising of the vP to adjoin to itself is a minimal movement. It doesn't go any higher. Thus we assume that this movement meets the general requirement of least effort in grammatical derivation. This movement is motivated by the need for successful linearization (cf. Moro 2000); therefore it is not an arbitrary action. The resulting structure in (132) still maintains the essential characters of the different constituents: the conditional clause is still an adjunct—and a syntactic island for that matter—and the vP is a complement prior to the raising. Look at the following examples:

(133) What will John buy t if he finds a supermarket?

(134) *Which supermarket will John buy bottle waters if he finds t ?

The ungrammaticality of (134) can be readily accounted for. As to (133), one could suppose that the *wh*-word *what* has been moved away when the vP undergoes raising—a case of remnant movement.

But there are still problems, of course. One of them is that the structure in (132) has precisely the same defect for which we said that (127) is bad. We don't have an answer to this challenge. But notice that there is an important difference between (127) and (133). In (133), the adjunct YP is adjoined to a higher functional projection, a CP- or IP-level category. It does not play any role in the constitution of the event structure of the main clause. The *if*-clause in (133), on the other hand, is part of the event structure of the main clause and forms a complex predicate with the *v*P (Haegeman 2003). Being part of a complex predicate, the conditional clause is not licensed by the functional head *v*, but by *composition* with the category *v*P. This may make a difference. Certainly the technical details have to be worked out and justified. We will leave them to future research.

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