ON GAPLESS RELATIVE CLAUSES IN CHINESE*

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1.   Introduction

This paper discusses the so called "gapless relative constructions" in Chinese.[1] Previous studies tend to assume that gapless relative clauses as one type of relative clauses, and thus provide unify analysis (cf. Tsai 1997, Ning 1993). Yet, it requires extra language-specific stipulations. Also, empirically, those unify theories are not without counterexamples. We thus argue that gapless relative clauses are not true relative clauses, and they should be analyzed as complex noun phrases parallel with simple noun phrases. That is, gapless relative clauses have clausal modifiers; while simple noun phrases have adjectival modifiers. This proposal is further supported by the apparent relatives in Japanese (cf. Murasugi 1991).

Our argumentation is organized as follows: Section 2 is the introduction of the properties of gapless relative clauses. We first argue that the tests for distinguishing gapless relative constructions and regular ones in Korean are not viable in Chinese (cf. Cha 1998, Zhang 2007). Section 3 is the review of Tsai's (1997) and Ning's (1993) arguments: gapless constructions as one type of relative clauses. Then we propose that gapless relative constructions cannot be deemed as true relatives. This kind of analysis is substantiated by the discussions in Japanese in Section 4. Murasugi (1991) argues that relative constructions are complex noun phrases in Japanese. Finally, this paper is concluded in section 5.

2.   Properties of Gapless Relative Constructions in Chinese

Since Tang (1979), many linguists have discussed the syntactic and semantic properties of special relative constructions --- gapless relative clauses --- which are absent in English. Yet, it is still controversial whether "gapless relative constructions" are really relative clauses. In this section, we review Zhang's (2007) arguments. She treats gapless relative constructions

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[1]   The term of "gapless relative constructions" is embraced with the quotation mark because the author thinks that this kind of construction is not relative clause.

as one kind of relative clauses in Chinese.

2.1. Distinctions between Gapless Relative Clauses and Regular Relative Ones

Zhang (2007) proposes that gapless relative constructions are indeed distinct from regular relative clauses and noun-complement constructions. She claims that the head nouns of gapless relative constructions are relational nouns, and the clauses are their licensors. Syntactically, the head nouns are predicates and the clauses are subjects. Compare to regular relative constructions, gapless relative constructions denote a reversed predication relation between the head nouns and the clauses.

Zhang (2007) following Cha (1998, 1999) suggests that gapless relative clauses differ from regular ones in the following ways:

I.   Gapless relative clauses indeed have no gaps.
II.   The heads of gapless relative clauses must be relational.
III. The adnominal clauses of gapless relative clauses are not optional.
IV.   Gapless relative clauses may not be conjoined with the regular relative clauses.
V.   Gapless relative clauses may not be stacked, but the regular relative clauses may.

First, it is true by the name of "gapless" that there is indeed no gap in "gapless relative clauses", since the argument structure of *play* has been fulfilled, as shown by (1).[2]

(1)   張三彈鋼琴的聲音

        Zhangsan tan   gangqin de   shengyin
        Zhangsan play   piano   DE   sound

        'the sound of Zhangsan's playing piano'

Second, Zhang (2007) following Huang et al. (2000) claims that the head nouns of gapless relative clauses must be relational, while it is not the case for regular relative clauses, as shown by the contrast between (2) and (3):

(2)   炒菜的那個人

        chao cai   de   na   ge   ren
        fry   vegetable DE   that CL   person

        'the person who fried vegetables'

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[2]   Abbreviations used in this paper include: ASP: aspect markers; DE: verbal suffix or marker for modifying phrases like genitive phrases, relative clauses, and noun complement clauses; RC: relative clause.

(3)　　*媽媽炒菜的那個人

　　　　mama chao cai　　　de　na-ge　ren
　　　　mom　fry　vegetables　DE　that-CL　person

　　　　Intended: 'the person for whom Mom fried vegetables'

The head noun *ren* 'person' in (3) is not a relational noun, yielding the ungrammaticality of the sentence. However, this may not be the case. The head noun *bisai* 'games' of regular relative clause is a relational noun, but this does not make the sentence ungrammatical, as in (4).

(4)　　[張三參加 t_i]的比賽 $_i$ 很多

　　　　[Zhangsan canjia t_i] de bisai$_i$　hen　duo
　　　　Zhangsan attend　　de　games　very many

　　　　'games which Zhangsan attend are a lot'

　　　Third, Zhang (2007) argues that the optionality of the adnominal clauses can differentiate gapless relative clauses from regular ones, as shown by (5)-(6).

(5)　　他不喜歡(我買的)手機　(regular RC)
　　　　Ta bu xihuan (wo mai de)　shouji
　　　　He not like　　I　buy DE　cell phone

　　　　'He does not like the cell phone that I bought.'

(6)　　他不喜歡(*我炒菜的)味道　(gapless RC)
　　　　Ta bu xihuan (*wo　chao　cai　　　de) weidao
　　　　He not like　　I　fry　vegetables DE　smell

　　　　'He does not like the smell of my frying vegetables.'

With careful scrutiny, gapless relative clause remains grammatical even if the clause is deleted, as in (7).

(7)　　張三沒聽到(李四彈鋼琴的)聲音
　　　　Zhangsan mei tingdao (Lisi tan gangqin de)　shengyin
　　　　Zhangsan not hear　　　Lisi play piano　　DE　sound

　　　　'Zhangsan does not hear the sound of Lisi's playing piano.'

　　　Fourth, with regard to the case of coordination, generally, the semantic type of conjuncts should be of the same. Thus, Zhang (2007) attributes the ungrammaticalities of (8) to the effects that different types of relative clauses can not be coordinated. Namely, the regular relative clause *the vegetables that Lisi bought* cannot be conjoined with the gapless relative clauses *the smell of his cooking*. Besides, different types of heads of relative clauses cannot be conjoined, either. Thus, the gapless relative head noun cannot be coordinated with the regular

relative head noun, as shown by the contrast between (9)-(11).

(8)   *[我感覺到了[[露露買的菜] 和[他炒菜的] 味道 (*regular RC &gapless RC)
       *Wo ganjuedao-le [[Lulu mai de cai]   he [ta chao cai   de weidao]]
       I   fell-ASP   [[Lulu buy DE vegetable] and [he fry   vegetable DE smell]

(9)   *張三散步的[後果和時間]
       *Zhangsan sanbu de [houguo   he   shijian]
       Zhangsan walk   DE [consequence and time]

(10)   張三常常散步的[時間和地方]
       Zhangsan changchang sanbu de [shijian he   defang]
       Zhangsan often   walk DE [time   and place]

       'the time when and the place where Zhangsan often takes a walk'

(11)   他做惡的[代價和後果]
       Ta   zuo-e   de [daijia he   houguo]
       He   do-evil DE [price and consequence]

       'the price and the consequence for his evil-doing'

Yet, sentence (12) where regular relative clause is conjoined with gapless relative clause will
challenge Zhang's (2007) analysis.

(12)   張三同時聞到[媽媽炒菜的]跟[他最懷念的]味道 (gapless & regular RC)
       Zhangsan tongshi   wendao [mama chao cai   de] gen [ta zui
       Zhangsan simultaneously smell   [Mom   fry   vegetable DE] and [he most
       huainian de]   weidao
       miss   DE]   smell

       'Zhangsan simultaneously smells the smell of Mom's frying vegetables and also what
       he misses.'

There is also an alternative way to explain the ungrammaticalities of (8) and (9). They can be
ascribed to semantically anomaly. In (8), it is reasonable for the smell of the cooking to be felt,
but it is weird for the relative clause *the vegetable that Lisi bought* to be felt. Also,
coordination construction requires the two conjuncts to be semantically relevant. In (9) it is
thus inappropriate to conjoin the consequence of walk and the time of walk. For (10) and (11),
Zhang (2007) does not rule out the possibility of noun phrase coordination. That is, the two
head nouns in either (10) or (11) are the result of coordination, and have nothing to do with
the types of relatives which they belong to.

    Besides, it is noticeable that [XP *de* [NP$_1$+NP$_2$]] is not necessarily equal to [[XP *de*
NP$_1$]+ [XP *de* NP$_2$]]. This is further validated by the false predication that (13) entails (14).

(13)　　張三和李四在公園裡見面
　　　　Zhangsan he　Lisi zai gongyuan li　　jianmian
　　　　Zhangsan and Lisi at　park　　inside meet

　　　　'Zhangsan and Lisi met in the park.'

(14)　*張三在公園裡見面和李四在公園裡見面
　　　　*Zhangsan zai gongyuan li　　jianmian he　Lisi zai gongyuan li　　jianmian
　　　　Zhangsan at park　　inside meet　　and Lisi at park　　inside meet

　　　　'*Zhangsan met in the park and Lisi met in the park.'

It is clear that the collective predicate *jianmian* 'meet' requires the plural nominal; thus, (14) is ungrammatical.

　　　　Last, Zhang (2007) tries to mark the boundaries of regular clause and gapless relative clause by the properties of stacking. Namely, regular clause may be stacked; whereas gapless relative clause may not, as seen by the contrast between (15) and (16).

(15)　　媽媽炒的李四洗的菜
　　　　Mama chao de　Lisi xi　　de　cai
　　　　Mom　fry　　DE　Lisi wash DE　vegetables

　　　　'the vegetables that are washed by Lisi are fried by Mom'

(16)　*媽媽炒菜的李四洗菜的聲音
　　　　*Mama chao cai　　　　de　Lisi xi　　cai　　　　de　shengyin
　　　　Mom　fry　　vegetables DE　Lisi wash vegetables DE　sound

However, this test is invalid by the following reason. McCawley (1988) argues that restrictive relative clauses can be stacked but nonrestrictive relatives cannot; however, Vries (2000) finds that nonrestrictive relative clauses can be stacked in Dutch, but such examples are rare. This indicates that whether the relative clause can be stacked or not is not a universal property, and it may neither be appropriate evidence to support that gapless relative clauses are distinct from regular relative clauses.

2.2. Distinctions between Gapless Relative Clauses and Noun-Complement Constructions

　　　　Zhang (2007) argues that gapless relative constructions behave differently from the noun-complement constructions: (i) the occurrence of evaluative adverbs; (ii) coordination and (iii) accommodation of the animate adnominal. First, Zhang (2007) proposes that an evaluative adverb is not allowed in gapless relative constructions, but it is allowed in noun-complement constructions, as shown by the pairing in (17) and (18). Yet, the ungrammaticality of (19) shows that evaluative adverbs are also excluded from regular relative clauses.

(17) *我聞到了[李四居然煮飯的味道]　(gapless RC)
　　　*Wo　wendao-le　[Lisi **juran**　　　　zhu-fan　　de weidao]
　　　I　　smell-ASP　Lisi **unexpectedly** cook-rice　DE smell

　　　Intended:'I smelled the smell of Lisi's **unexpectedly** cooking.'

(18)　我聽說了[李四居然搶了銀行的報導]　(noun-complement)
　　　Wo tingshuo-le　[Lisi　juran　　　　　qiang-le yinhang　de baodao]
　　　I　　hear-ASP　　Lisi　unexpectedly　rob-ASP　bank　　　DE report

　　　'I heard the report that Lisi unexpectedly robbed a bank.'

(19)　*張三聽說了[李四居然賣房子的消息]　(noun-complement)
　　　*Zhangsan tingshuo-le [Lisi　juran　　　　　mai fangzi de　xiaoxi]
　　　Zhangsan hear-ASP　　Lisi　unexpectedly　sell house DE　news

　　　'Zhangsan heard the news that Lisi unexpectedly sold his house.'

It is known that evaluative adverbs are unlikely to be embedded in the adnominal sentences. According to the syntactic analysis of adverbs by Cinque (1999), speaker-oriented adverbs, such as the evaluative adverbs are placed in relatively high position in sentences. In addition, we do not share the same intuition with Zhang in (18), and the grammaticality of this sentence is quite low.

　　Second, Zhang (2007) argues that gapless relative constructions cannot conjoin with a noun-complement constructions; thus, (20) is ungrammatical.

(20) *[橡皮燃燒的味道]和[那種氣體沒有毒的謠言]
　　　*[xiangpi ranshao de　weidao] he [na　zhong qiti meiyou　du　　de　yaoyan]
　　　Rubber burn　　DE smell　and that kind　air not-have poison DE　rumor

In fact, the above sentence can be rescued by the insertion of certain information, as seen in (21). Another coordinator *erqie* 'and' is used to link clausal conjuncts, and the additive predicate *scare everyone* make the two conjuncts, *the smell of the rubber's burning and the rumor that the air is poison* relevant.

(21)　[橡皮燃燒的味道]而且[那種氣體有毒的謠言]嚇壞了大家
　　　[xiangpi ranshao de　weidao] erqie [na　zhaong qiti you　du　　　de
　　　Rubber burn　　DE smell　and　that kind　air　have poison DE
　　　yaoyan] xiahuai-le dajia
　　　rumor　scare-ASP everyone

　　　'The smell of the rubber's burning and the rumor that the air is poison scare everyone.'

Third, according to Zhang (2007), an adnominal may occur to the left of a noun-complement construction, with an agent reading, whereas no such an adnominal may occur to the left of gapless relative constructions, illustrating by the contrast between (22) and (23).

(22) 露露的寶玉發表了論文的謠言
      Lulu de Baoyu fabia-le   lunwen de   yaoyan
      Lulu DE Baoyu publish-ASP article DE   rumor

      'Lulu's rumor that Baoyu published an article'

(23) *露露的寶玉彈鋼琴的聲音
      *Lulu de Baoyu tan   gangqin de   shengyin
      Lulu DE Baoyu play piano   DE   sound

Obviously, this analysis is challenged by (24) where the agent 張三 'Zhangsan' can precede the gapless constructions.

(24) 張三(所)看見的李四做惡的後果
      Zhangsan(suo) kanjian de   Lisi zuo-e   de   houguo
      Zhangsan(suo) see   DE Lisi do-evil DE   result

      'Zhangsan saw the result of Lisi's evil-doing.'

From the above discussions, the tests provided by Cha (1998) and Zhang (2007) for distinguishing gapless relative clauses from normal ones are not viable in Chinese. Next chapter, we will review previous studies about gapless relatives clauses and then provide our analysis.

3. Analysis

In terms of previous studies, gapless relative clauses are assumed to be a subpart of normal relative clauses. To provide an unify analysis, researchers have to stipulate extra language- specific requirements exclusively for gapless relative clauses to lump them together with the phenomenon of normal relative clauses (cf. Huang (1982), Tsai (1997), and Ning (1993). In what follows, we will introduce Tsai's (1997) implicit event argument analysis and also Ning's (1993) VP adjunct analysis.

3.1. Tsai's (1997) Implicit Event Argument Analysis

Tsai (1997) observes that gapless relative clauses are typically relevant with actions or events, as shown by the ungrammaticality of stative predicate in (25) and (26).

(25) *張三(很)固執的下場很慘
      *Zhangsan (hen) guzhi   de xiachang hen   can
      Zhangsan (very) stubborn DE result   very miserable

      'The result of Zhangsan's stubbornness is very miserable.'

(26)　*張三(很)聰明的好處很多

　　　*Zhangsan (hen)　congming de　haochu　　hen　duo
　　　Zhangsan (very) smart　　　DE　advantage　very many

　　　'The advantages of John's cleverness are a lot.'

Thus, Tsai (1997) proposes that it is an implicit event argument that is relativized. However, it is interesting that if certain degree adverbs or negative adverbs are added, sentences turn out to be grammatical. Consider (27) and (28).

(27)　張三(之前)太固執的下場是損失慘重

　　　Zhangsan (zhiqian) tai guzhi　　de　xiachang　shi　sunshi canzhong
　　　Zhangsan (before)　too stubborn DE　result　　is　loss　miserable

　　　'The result of Zhangsan's stubbornness was having terrible loss.'

(28)　張三不誠實的結果很慘

　　　Zhangsan bu　chengshi de　gieguo hen　can
　　　Zhangsan not　honest　DE　result　very　miserable

　　　'The result of Zhangsan's cheating is very miserable.'

　　Also, it is not the case that every eventive predicate can form gapless relative clauses, as in (29)-(30).

(29)　*張三寫作業的好處很多

　　　*Zhangsan xia　zuoye　　de　haochu　　hen　duo
　　　Zhangsan write homework　DE　advantages　very many

　　　'The advantages of Zhangsan's writing homework are a lot.'

(30)　*張三吃青菜的結果很棒

　　　*Zhangsan chi qingcai　　de　jieguo　hen　bang
　　　Zhangsan eat　vegetables DE　result　　very　wonderful

　　　'The result of Zhangsan's eating vegetables is wonderful.'

To sum up, if more empirical data are taken into consideration, the proposal that the implicit event argument bound by the base-generated null operator cannot be substantiated.

3.2.　Ning's (1993) VP Adjunct Analysis

　　According to Ning (1993), the domain of the adjunct gap should be within four types <LOCATION>, <TIME>, <MANNER>/<INSTRUMENT> and <REASON>. The gapless relative clauses, however, do not follow this pattern, he thus proposes VP adjunct relative analysis. This type of adjuncts with which the NP head can associate must have the general

meaning of *dedao* "obtain", as shown in (32), (34) and (36). ³

(31)   他唱歌的聲音
Ta chang ge   de   shengyin
He sing   song DE   sound

'the sound of his singing'

(32)   他唱歌發出了聲音
[Ta [$_{VP}$ [$_{V'}$ chang ge] [$_{VP}$ [$_V$ fachu   le   shengyin]]]]
He   sing   song   produce ASP voice

'the voice is obtained from his singing.'

(33)   他救人的回報
Ta jiu   ren   de   huibao
He save   people DE   reward

'the reward of his saving people'

(34)   他救人得到了回報
[Ta [$_{VP}$ [$_{V'}$ jiu   ren] [$_{VP}$ [$_V$ dedao le   huibao]]]]
He   save   people   obtain ASP reward

'He saved the people and obtained the reward.'

(35)   他殺人的下場
Ta sha ren   de   xiachang
He kill people DE   consequence

'the consequence of his killing people'

(36)   他殺人得到了可恥的下場
[Ta [$_{VP}$ [$_{V'}$ sha ren] [$_{VP}$ [$_V$ dedao le   kechi-de   xiachang]]]]
He   kill people   obtain ASP ignominious-DE consequence

'He killed the man and obtained his ignominious consequence.'

Simply put, gapless relative clauses (31), (33), and (35) can be reinterpreted as (32), (34) and (36), respectively with the verb of "obtain". Ning (1993) further argues that if the verb does not have the meaning of "obtain", the relativization will be implausible, as illustrated by the ungrammaticalities of (38) and (40).

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³   Translations of (32), (34) and (36) are revised slightly by us. Also, sentences (31), (33) and (35) are provided by us for ease of exposition. If (32), (34) and (36) are relativized, they would be (31), (33) and (35), respectively. The distinctions of English translations should be neglected.

(37)　　他賣車還帳
　　　　Ta　mai　che huan　zhang
　　　　He sell　car pay　　bill

　　　　'He sold his car to pay the bill.'

(38)　*他賣車的帳
　　　*[Ta　mai che　de]　zhang
　　　　He　sell　car　DE　bill

　　　　[Intended] 'The bill he (paid) by selling his car.'

(39)　　他唱歌哄孩子
　　　　Ta chang ge　　hong haizi
　　　　He sing　　song lull　　baby

　　　　'He sang to lull the baby.'

(40)　*他唱歌的那個孩子
　　　*[Ta　chang ge　　de]　na-ge　haizi
　　　　He　sing　　song DE　that　　baby

　　　　[Intended] 'the baby he sang'

　　However insightful Ning's (1993) VP adjunct analysis is, it runs into empirical difficulties. Consider (41)-(43).

(41)　　張三買書的預算
　　　　Zhangsan mai shu　de　yusuan
　　　　Zhangsan buy book DE　budget

　　　　'the budget of Zhangsan's buying books'

(42)　　張三處理事情的效率
　　　　Zhangsan chuli　　　shiqin de　　xiaolu
　　　　Zhangsan deal with　things DE　efficiency

　　　　'the efficiency of Zhangsan's dealing with things'

(43)　　張三追求真理的精神
　　　　Zhangsan zhuiqiu zhenli de　　jingshen
　　　　Zhangsan pursue　truth　　DE　spirit

　　　　'the spirit of Zhangsan's pursuing truth'

From the above empirical data, it is not reasonable to paraphrase the above sentences with the verb interpreting "obtain". Thus, the VP adjunct analysis can not be justified. In what follows, our analysis is proposed.

3.3. Our Proposal

In terms of analysis proposed by Tsai (1997) and Ning (1993), they both assimilate gapless relative clauses with the normal ones. Yet, the unify analysis runs into empirical difficulties. As the above discussions have shown, some counterexamples have been provided.

In this way, we argue that gapless relative clauses are not true relative clauses. Instead, they are complex noun phrases with adnominal clauses. This parallels with structures of simple noun phrases. They only differ in the following way: gapless relative clauses with clausal modifiers; simple noun phrases with adjectival modifiers. Consider the following pairs.

(44)   張三買書的預算
         Zhangsan mai shu   de   yusuan
         Zhangsan buy book DE   budget

         'the budget of Zhangsan's buying books'

(45)   玻璃的花瓶
         boli   de   huaping
         glass DE   vase

         'a vase made of glass'

Simply put, the clausal modifier and the adjectival modifier both restrict the domain of the head noun. To phrase it differently, in (44) the clausal modifier tells us that the budget is only for Zhangsan's buying books, but not for any other purposes. Similarly, in (45) the adjectival phrase reveals that the vase is made of glass but not of other materials.

An important question begged by this analysis is what differentiates gapless relative clauses from noun complement constructions. In terms of ellipsis structures, both gapless relative clauses and noun complement constructions are grammatical, as shown by (46) and (47).

(46)   張三作弊的下場很慘，李四也是/一樣
         Zhangsan zuobi de   xiachang hen   can,   Lisi ye   shi/yiyang
         Zhangsan cheat DE   result   very miserable Lisi also is/the same

         'The result of Zhangsan's cheating is miserable, and so does Lisi's.'

(47)　張三作弊的謠言令人驚訝，李四也是/一樣

Zhangsan zuobi de yaoyan ling ren jingya, Lisi ye shi/yiyang

Zhangsan cheat DE rumor make people surprise Lisi also is/the same

'The rumor of Zhangsan's cheating is surprising, and the rumor of Lisi's cheating is, too.'

With further scrutiny, the comparative construction of *bi* 'than' can distinguish gapless relative clauses from noun complement constructions, as seen in the pairings in (48) and (49).

(48)　張三作弊的下場比李四慘

Zhangsan zuobi de xiachang bi Lisi can

Zhangsan cheat DE result than Lisi miserable

'The result of Zhangsan's cheating is more miserable than Lisi's.'

(49)　*張三作弊的謠言比李四更令人驚訝

*Zhangsan zuobi de yaoyan bi Lisi geng ling ren jingya

Zhangsan cheat DE rumor than Lisi more make people surprise

'The rumor of Zhangsan's cheating is more surprising than the rumor of Lisi's cheating.'

The *bi* 'than' construction highlights the distinction between gapless relative clauses and noun complement constructions. Namely, the adnominal clauses in the former is an adjunct but in the latter is a complement. Thus, the noun complement cannot be torn apart and elided in (49). One may ask why the two constructions pattern differently in *bi* 'than' structure. We only provide empirical data, but with no proper explanation. We leave this for further research.

In this section, we propose that gapless relative clauses do not belong to relative clauses. They are more like complex noun phrases with adjunct sentential modifiers. Furthermore, this analysis can be supported by the case that Japanese also allows similar construals in NP structures (cf. Murasugi 1991).

4.　Japanese Relative Constructions

In this section, certain basic properties of Japanese relative clauses are introduced. We then illustrate Murasugi's (2000) hypothesis which provide well explanation for Chinese gapless relative clauses.

4.1.　Properties of Japanese Relative Clauses

According to Kuno (1973), Japanese relative clauses do not contain a gap as shown in (50), and also do not observe subjacency effects, as illustrated in (51).

(50)   [NP[IP syuusyoku-ga   muzukasii][NP buturigaku]]
             getting job-NOM is-hard   physics

     'physics, which is hard to get a job in'

(51)   [NP[IP [NP[IPe$_i$ e$_j$ kiteiru]   yoohuku$_j$]-ga yogoreteiru][NP sinsii$_i$]]
                is-wearing suit-NOM   is-dirty   gentleman

     'the gentleman who [the suit that he is wearing] is dirty'

On the basis of Hoji (1985), Japanese relative clauses cannot involve movement, and the straightforward hypothesis is that Japanese relative clauses are IPs rather than CPs. If they do not have a [Spec, CP] position for the relative operator to move to, they cannot be derived by movement. Along the same line, Murasugi (1991) provides evidence from the view of language acquisition. Some Japanese-speaking children, around the age 2 to 4, produce ungrammatical relative clauses, such as (52).

(52)   *buta san-ga   tataiteru no taiko
         piggy-NOM is-hitting no drum

       'the drum that the piggy is playing'

Simply put, the particle *no* following the relative clause is not allowed in adult grammar. Murasugi (1991) thus argues that *no* is of the category C. Japanese speaking children initially hypothesize that a Japanese relative clause is a CP, and hence, produce *no* in its head position. When children grow up, they eventually discover that Japanese relative clauses are IP, and thus, cease to produce *no*. The positive evidence comes from the cases that overt complementizers are not allowed in Japanese pure complex NPs in (53)-(54).

(53)   [NP[IP sakana-ga yakeru] nioi]
             fish-NOM burn   smell

     'the smell that a fish burns'(Lit.)

(54)   [NP[IP doa-ga   simaru] oto]
             door-NOM shut   sound

     'the sound that a door shuts' (Lit.)

Next section, we introduce evidence provided by Murasugi (1991) that Japanese relative clauses are complex noun phrases.

4.2.   Relative Constructions are Complex Noun Phrases in Japanese

Murasugi (1991) shows that Japanese relatives are virtually indistinguishable from sentential modifiers in pure complex NPs; that is, Japanese relatives are not relatives but pure sentential modifiers on independent grounds. First, Japanese allows relative clauses without

gaps, as in (50) which is repeated in (55) (cf. Kuno 1973).

(55)　　[_{NP}[_{IP} syuusyoku-ga　　muzukasii][_{NP} buturigaku]]
　　　　　　getting job-NOM　is-hard　　　　physics

　　　　'physics, which is hard to get a job in'

Also, many other kinds of Japanese relatives do not have counterparts in English. For example, the head noun is 'half', and the whole complex NP means "half of the thing obtained by boiling potatoes"; namely, sentence (56) refers to an amount instead of a thing.

(56)　　[_{NP}[_{IP} zyagaimo-o　yudeta] mono]
　　　　　　Potato-ACC　boild　　thing

　　　　'the thing that resulted from boiling potatoes = boiled potatoes'

Third, in general, the modification relation between the relative clause and the head noun is very loose in Japanese. Namely, the nominal head refers to a result of the action or event denoted by the sentential modifier, as in (57)-(58).

(57)　　[_{NP}[_{IP} sakana-ga yakeru] nioi]
　　　　　　fish-NOM burn　　smell

　　　　'the smell that a fish burns'(Lit.)

(58)　　[_{NP}[_{IP} doa-ga　　simaru] oto]
　　　　　　door-NOM shut　　sound

　　　　'the sound that a door shuts' (Lit.)

　　　In the same vein, like Japanese, the adnominal clauses of Chinese gapless relative clauses can be analyzed as sentential modifiers. First, consider the Chinese counterpart of (55).

(59)　　[[工作很難找的]物理系]
　　　　[_{NP}[_{IP} gongzuo hen　nan　　zhao]　　de [_{NP} wulixi]]
　　　　　　job　　very difficult look for DE　　physics

　　　　'physics, which is hard to get a job in'

Second, there also exists the aboutness relation between the adnominal clauses of gapless relative clause and the head noun (cf. Tsai 1997), as illustrated by (60) and (61).

(60)　　魚燒焦的味道
　　　　yu　　shao-jiao　de　weidao
　　　　fish　burn　　　De　smell

　　　　'the smell of fish's burning'

(61) 關門的聲音
      guan men de   shengyin
      close door DE   sound

      'the sound of closing door'

Significantly, the structures of the above gapless relative clauses parallel to the complex noun phases with adjectival modifier in (62).

(62) 瓷的花瓶
      ci   de   huaping
      porcelain DE   vase

      'a vase made of porcelain'

In short, we have demonstrated the drawbacks of characterizing Chinese gapless relative clauses as true relatives in previous discussions. We thus conclude that Chinese gapless relative clauses are complex noun phrases, as evidence by similar construals and relevant properties in Japanese (cf. Murasugi 1991).

5. Concluding Remarks

To sum up, we argue that the analysis assuming gapless relative clauses as one type of relative clauses is not substantiated, and runs into empirical difficulties. Thus, we present a view that Chinese gapless relative constructions, like Japanese relatives, are not real relative clauses; instead they are complex noun phrases with adnominal clauses restricting the domain of the head noun.

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