

The Relative Constructions and the Intervention Effect in Chinese*

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Two types of analysis of relative constructions have been proposed in the literature: the matching (or *wh*-operator movement) and the promotion (or head-raising) analysis. The matching analysis has been proposed by Lees (1960, 1961), Chomsky (1965, 77), and Kuroda (1968) among others.¹ In this analysis, nominal expressions, to which relative clauses are adjoined, are base-generated in the head positions of NP, and *wh*-phrases or invisible operators move to the spec of the relative clauses to match themselves with the nominal expressions. Thus, the nominal expressions in the head positions do not move for the sake of deriving relative clauses. According to the promotion analysis, on the other hand, which has been suggested by Brame (1968), Schachter (1973), Vergnaud (1974) among others, nominal expressions are base-generated inside relative clauses and then, they are moved to the head positions of NP. Thus, it is not a *wh*-phrase but a nominal expression that moves into the head position in order to derive a relative clause. In other words, nominal expressions not only head relative clauses but also serve as (*wh*-)operators. Following Carlson (1977) and Afarli (1994), Aoun and Li (2003) show that both the matching and the promotion method are necessary to account for all types of relative constructions in English. Specifically, Aoun and Li claim that although *wh*-relative constructions (i.e. relative clauses in which *wh*-phrases are used) can resort to only the matching method, *that*-relative constructions (i.e. relative clauses in which “that” is employed) can choose either of the two methods. They have come to this conclusion on the basis of three types of evidence: (i) idiom chunks, (ii) binding, and (iii) scope interaction. Aoun and Li (2003) extend their analysis to Chinese and argue that although Chinese also allows the promotion as well as the matching

method as in English, the (promoted) head of a relative clause is projected up to NP, not DP, at the time of raising to the spec of CP, unlike in English. As a result, (some) Chinese relative clauses do not show scope interaction even if the heads are reconstructed into the base-generated positions within the relative clauses. In this paper, I would like to present three new claims about relative clauses in Chinese. First of all, the intervention effect is observed not only in *wh*-questions but also in relative clauses in Chinese, which indicates that the same type of WH movement is involved in both constructions and that optional movement sometimes must be obligatorily applied to derive relative clauses. Second, Chinese relative clause constructions show quantifier interaction as the result of head reconstruction, in other words, the head, at the time of being in the base-generated position, projects higher than NP and at least up to NumP, the claim of which is contra Aoun and Li's (2003) claim. This paper is organized in the following order. I will present Aoun and Li's (2003) analysis of English and Chinese relative constructions first. In section 2, I will show that Chinese relative clauses show scope interaction contra Aoun and Li (2003). Furthermore, I will argue that the derivations of relative clauses may be subject to the intervention effect, and that "dou" ('each' or 'even') as well as "ye" ('also') is an intervener in Chinese.

1. Aoun and Li (2003)

1.1. English relative clauses

In this section I will review Aoun and Li's (2003) analysis of relative constructions in English first, and then in Chinese. Aoun and Li argue that the head of a relative clause is first base-generated inside the relative clause and is raised across this clause via WH movement to function as part of DP in the superordinate clause, and that this promotion analysis is necessary to derive *that*-relative constructions. Three pieces of evidence are presented for this claim. First, part of a relative clause and its head can form an idiom chunk in *that*-relatives. Examine the following examples:

- (1) a. The careful track that she's keeping of her expenses pleases me.

b. The headway that Mel made was impressive.

c. I was offended by the lip service that was paid to civil liberties at the trial. (Schachter (1973: 31–32))

The above relative clause examples are derived from VP idioms such as “keep track of”, “make headway”, and “pay lip service to”; specifically, the nominal parts of the idioms serve as the heads of the relative clauses. Considering the fact that the idiomatic meanings are retained in all of the examples, each head is expected to be base-generated within and be raised across the relative clauses. In contrast, in the case of *wh*-relatives, all of the corresponding examples lose the idiomatic interpretations:

(2) a. ?? The careful track which she’s keeping of her expenses pleases me.

b. ?? The headway which Mel made was impressive.

c. ?? I was offended by the lip service which was paid to civil liberties at the trial. (Aoun and Li (2003: 98))

These facts suggest that the promotion method is available in *that*-relatives while it is unavailable in *wh*-relatives.

The second evidence for the promotion analysis for *that*-relatives lies in a binding phenomenon. Consider the following examples:

(3) a. John_i painted a flattering portrait of himself_i.

b. *Himself_i painted a flattering portrait of John_i.

c. The portrait of himself_i that John_i painted is extremely flattering.

(Schachter (1973: 32))

The binding condition A requires “himself” to be bound in its governing category, so the grammatical contrast between (3)*a* and *b* follows. Interestingly, “himself” in (3)*c* is bound by “John”. Since it is implausible to assume that “The portrait of himself” is base-generated in the head position, the promotion analysis is a natural conclusion. In other words, “The portrait of himself” is reconstructed into the base-generated position within the relative clause and there “himself” is bound by “John”. Expectedly, the *wh*-relative counterpart results in ungrammaticality:

(4) ?* The portrait of himself_i which John_i painted in art class is impressive.

(Aoun and Li (2003: 111))

The binding fact above indicates that the promotion method is applied to *that*-

relative constructions.

The third evidence is found in scope interaction as follows:

(5) a. Every doctor will examine two patients.

b. I phoned the two patients that every doctor will examine tomorrow.

(Aoun and Li (2003: 98))

(5)a is ambiguous: the object, “the two patients”, can be interpreted as having either wide or narrow scope with respect to the subject, “every doctor”. If the object takes wide scope, there are only two patients for all doctors, whereas if the object takes narrow scope, there can be twice as many patients as the doctors. Interestingly, (5)b is ambiguous in the same way as (5)a. This fact suggests that “two patients” is reconstructed into the object position in the relative clause. Thus, the promotion method must have been applied. If “that” is replaced with “who” as in (6), the ambiguity disappears:

(6) I phoned the two patients who every doctor will examine tomorrow.

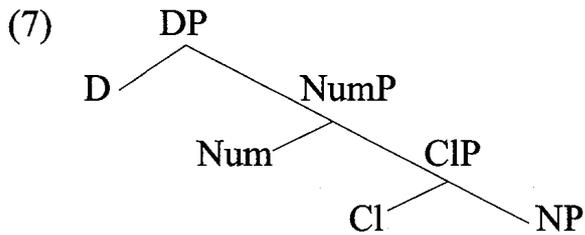
(Aoun and Li (2003: 113))

“(the) two patients” has only wide scope with respect to “every doctor”. Hence, reconstruction is unavailable in *wh*-relative constructions such as (6).

On the basis of the three pieces of evidence shown above, Aoun and Li (2003) argue that both the matching and the promotion method are necessary and only *that*-relatives can employ the promotion method in English relative constructions.

1.2. Chinese relative clauses

Aoun and Li (2003) apply the same methodology to Chinese relative constructions and conclude that Chinese shows both the promotion and the matching method as in English, but what is promoted in the promotion method is not DP but NP. As a result, Chinese does not show scope interaction caused by the reconstruction of the head. Specifically, because NumP (or quantifier phrase) is between DP and NP and NumP is not raised in the promotion method, reconstruction of quantifiers is unavailable, and hence, no scope interaction is expected in Chinese relative clauses. They present the following DP structure for Chinese:



(Aoun and Li (2003: 140))

According to (7), if what is raised from a relative clause is NP, it does not include NumP. Hence, even if the head is reconstructed, the quantifier part will not be reconstructed. Therefore, Aoun and Li argue that scope interaction is unavailable in Chinese unlike in English. In this subsection, data which seem to support Aoun and Li's (2003) claim will be presented.

As in English, Chinese relative clauses show clear reconstruction with regard to idiom chunks and binding as follows:

(8) Idiom chunks (Aoun and Li (2003: 138))

a. [[ta *chi* e_i de] *cu*_i] bi shei dou da
 he eat DE vinegar compare who each big
 '(Lit.) The vinegar he eats is greater than anyone else's.'
 'His jealousy is greater than anyone else's.'

b. wo ting-bu-dong [[ta *you* e_i de] *mo*_i]
 I listen-not-understand he hu- DE -mor
 '(Lit.) I do not understand the -mor that he hu-ed.'
 'I do not understand his humor.'

(9) Binding (Aoun and Li (2003: 132))

a. wo jiao zhangsan quan meigeren_i kai ziji de chezi lai
 I ask Zhangsan persuade everyone drive self DE car come
 'I asked Zhangsan to persuade everyone to drive self's car over.'
 b. [[wo jiao zhangsan quan meigeren_i kai t lai de] ziji_i de chezi]
 'self's car that I asked Zhangsan to persuade everyone to drive over.'

In (8), idioms such as “chi-cu” (‘eat vinegar’ meaning ‘be jealous’) and “you-mo” (meaning ‘humor’), which have a V+O structure, are employed in relative constructions. The grammaticality of (8)*a* and *b* suggests that the promotion method is applied in both examples. Similarly, in (9), the reflexive “ziji” (‘self’) needs to be bound by the antecedent “meigeren” (‘everyone’).

The grammaticality of (9)*b* shows that “*ziji de chezi*” is reconstructed into the relative clause and “*ziji*” is bound by “*meigeren*”. Hence, the promotion analysis is the only possibility available for “*ziji*” to successfully refer to “*meigeren*” in (9)*b*.

However, scope interaction, which would further support the existence of reconstruction, is not always available in Chinese relative constructions. Examine the following data:

(10) a. *wo hui zhengli* [[*meigeren dou hui kan t de*] *san-ben shu*]

I will arrange everyone each will read DE three-CL book

‘I will put the three books that everyone will read in order.’

‘three books’ >> ‘everyone’; * ‘everyone’ >> ‘three books’

b. *wo hui zhengli* [[*meigeren hui kan t de*] *san-ben shu*]

‘three books’ >> ‘everyone’; ‘everyone’ >> ‘three books’

(Aoun and Li (2003: 133–134))

The existence of “*dou*” (‘each’) is important as to whether scope interaction is possible or not. (10)*a*, which has “*dou*” after “*meigeren*” (‘everyone’), is unambiguous whereas (10)*b*, which has no “*dou*”, is ambiguous. Specifically, “*meigeren*” can have only narrow scope with respect to “*san-ben shu*” (‘three books’) in (10)*a*, so there are only three books for everyone (which is represented as ‘three books’ >> ‘everyone’). On the other hand, “*meigeren*” can have wide or narrow scope with respect to “*san-ben shu*” (‘three books’) in (10)*b*, so in addition to the reading which (10)*a* has, another reading exists: there can be three times as many books as the number of the people (which is represented as ‘everyone’ >> ‘three books’). If the reconstruction of the entire phrase is available as observed in the idiom chunks and binding data, it is easy to account for the ambiguity in (10)*b*.

Nevertheless, Aoun and Li (2003) claim that the promoted phrase cannot project up to NumP, and hence, quantifier interaction due to the reconstruction of heads should not be observable in Chinese relative constructions. For example, in (10)*a* and *b*, only “*shu*” (‘book’) is first generated in the object position of the verb, “*kan*” (‘read’), and then is raised into the head position, to which “*san-ben*” (‘three-CL’) is attached. Therefore, even if the promoted phrase, “*shu*” (‘book’), is reconstructed into the relative clause, it does not

induce scope interaction because the reconstructed phrase does not contain any quantifier. If this argument is correct, the unambiguity in (10)*a* follows. However, the ambiguity in (10)*b*, on the other hand, poses a problem to their account. In order to resolve this problem, Aoun and Li attribute the ambiguity in (10)*b* to the movement of “meigeren”, which is independent of relative clause derivation. More specifically, “meigeren” is raised out of the relative clause by QR (quantifier raising) and takes scope over the head, “san-ben shu” (‘three books’). As in Aoun and Li (1993), they assume that “meigeren” must be within the “government” domain of “dou”. Hence, “meigeren” in (10)*a* cannot be raised out of the relative clause due to the presence of “dou”. One reason why Aoun and Li (2003) do not regard “dou” as an intervener to the head raising is that “dou” itself does not block raising or reconstruction of quantifiers in other context. Consider the following example:

- (11) san-ben shu, wo xiang meigeren (dou) hui kan *t_i*, bu zhi liang-ben shu
 three-CL book I think everyone each will read not only two-CL book
 ‘Three books, I think everyone will read, not just two books.’
 ‘three books’ >> ‘everyone’; ‘everyone’ >> ‘three books’

(Aoun and Li (2003: 134))

A phrase can be optionally fronted in order to stress contrast with another phrase as in (11), which Aoun and Li (2003) call “a contrastive topic construction”. Furthermore, (11) is ambiguous: “san-ben shu” (‘three books’) can have either wide or narrow scope with respect to “meigeren” (‘everyone’).² The fact that the narrow scope reading is available indicates that reconstruction into the base-generated position is possible despite the presence of “dou” (‘each’). Hence, Aoun and Li claim that “dou” itself does not block reconstruction of quantifiers, but “meigeren” must be governed by it.

One may wonder why QR, which is supposed to be clause-internal, allows “meigeren” to move across its own clause in (10)*b*. To this question, Aoun and Li (1993) answer by arguing that this movement is possible because the governing category of the subject in a relative clause is not over the relative clause but over the matrix clause due to the lack of Agr (unlike English), so the adjunction of “meigeren” to VP in the matrix clause is possible, and

hence, the wide scope reading of the subject in a relative clause is available. However, since the governing category of the object in a relative clause is over the relative clause (i.e., the object adjoins to VP in the relative clause), scope ambiguity is not observed. This contrast is indeed the case. Consider the following example:

(12) Wo xihuan [[jieshao meige luyoudian] de shu].

I like introduce every tourist spot DE book

'I like books that introduce every tourist spot'

'books' >> 'every'; * 'every' >> 'books' (Aoun and Li (1993: 132))

When the universal quantifier is in an object position in a relative clause, it cannot take scope over the head noun, "shu" ('book'). This is because the governing category of the object is limited to the relative clause.³ Accordingly, Aoun and Li (2003) conclude that ambiguous examples such as (10)*b* are not due to reconstruction but due to Chinese specific QR rules.

Judging from the conclusion that the reconstruction of the head is available in idiom chunks and binding, but not in quantifiers, Aoun and Li (2003) reach a conclusion that what is raised into the head position out of a relative clause is not DP but NP in Chinese.

To sum up this section, according to Aoun and Li (2003), Chinese relative constructions can choose either the matching or the promotion method as *that*-relatives in English. Nonetheless, what is raised into the head position in the promotion method is smaller than NumP, and hence, scope interaction does not arise as the result of reconstruction in Chinese unlike in English. However, I will argue that promoting NumP is possible, and hence, scope interaction is observable in Chinese relative clauses contra Aoun and Li (2003).

2. The evidence for scope reconstruction

In this section, I would like to show that the Chinese data presented by Aoun and Li (2003) do not necessarily indicate the unavailability of scope interaction in Chinese. Instead I will claim that Chinese allows scope interaction due to the reconstruction of the head. Therefore, phrases to which

promotion out of relative clauses is applied can project up to at least NumP contra Aoun and Li (2003).

2.1. Reconsidering the aforementioned data and presenting a new data

Despite Aoun and Li's (2003) conclusion that scope interaction as a result of reconstruction of the head is not observed in Chinese, they are aware that there are counterexamples to their conclusion. Consider (10) and (12) again, which are repeated below:

(10) a. wo hui zhengli [[meigeren **dou** hui kan *t* de] san-ben shu]

I will arrange everyone each will read DE three-CL book

'I will put the three books that everyone will read in order.'

'three books' >> 'everyone'; * 'everyone' >> 'three books'

b. wo hui zhengli [[meigeren hui kan *t* de] san-ben shu]

'three books' >> 'everyone'; 'everyone' >> 'three books'

(Aoun and Li (2003: 133–134))

(12) Wo xihuan [[jieshao meige luyoudian] de shu].

I like introduce every tourist spot DE book

'I like books that introduce every tourist spot'

'books' >> 'every'; * 'every' >> 'books' (Aoun and Li (1993: 132))

As in (10)*b*, scope interaction is observable if there is no “dou” after “meigeren”. However, Aoun and Li (2003), following Aoun and Li (1993), claim that this example is exceptional. They argue that due to the lack of Agr in Chinese, the subject in a relative clause may adjoin to VP in the matrix clause through QR, which allows “meigeren” to take scope over the head “shu”. Therefore, the ambiguity in (10)*b* arises not because of the head reconstruction but because of QR of the subject. This is why (12) is unambiguous: the universal quantifier, “meige luyoudian” (‘every tourist spot’), is in an object position, and hence, it cannot be adjoined to the matrix VP because the VP in the relative clause is closer. However, the ambiguity of the following example is not expected of Aoun and Li’ (1993) account:

(13) [John gei meigeren de] wenzhang zai zher.

give everyone DE article at here

‘The articles that John gave everyone are all here.’

‘every’ >> ‘article’; ‘article’ >> ‘every’

The universal quantifier in (13) is in an (indirect) object position, so if Aoun and Li (1993) were right, the sentence would be unambiguous because objects are expected to adjoin to the embedded VP, not the matrix VP. However, (13) is ambiguous. Therefore, resorting to the lack of Agr (and hence, subject/object asymmetry) as in Aoun and Li (1993) is untenable to account for the existence of scope interaction in (10)*b* and (13). Accordingly, Aoun and Li’s (2003) claim that scope interaction is not observed in Chinese relative clauses is unattested.

Suppose the entire phrase, that is, the one with a quantifier, is promoted to the head position of a relative clause and scope interaction is available due to the head reconstruction contra Aoun and Li (1993, 2003). Then, the ambiguity in (10)*b* and (13) is naturally accounted for. However, it is necessary to account for the question of why (10)*a*, which has “dou” after “meigeren” (‘everyone’), is unambiguous. To explain this data, I claim that “dou” is an intervener to WH movement. In other words, the unavailability of scope interaction in (10)*a* is due to the intervention effect. Below I will show that this line of thinking is indeed correct. But before presenting the main argument, I will discuss the intervention effect in wh-questions in Chinese first.

2.2. The intervention effect in Chinese wh-questions

The intervention effect is a phenomenon observed in questions which include in-situ wh-phrases (i.e. wh-phrases which do not go through overt WH movement). Specifically, when an intervener appears between C and an in-situ wh-phrase, the covert movement of the wh-phrase is blocked and the sentence results in ungrammaticality (cf. Beck (1996) for German, Beck and Kim (1997) for Korean, Hagstrom (1998) for Japanese, Okinawan, and Sinhala, Pesetsky (2000) for English, German, Japanese and Korean, and Kim (2002) for Chinese).⁴ As Kim (2002) argues, the intervention effect is

observed in Chinese wh-questions too. Consider the following examples:

- (14) a. ?Lili **ye** kan-le naben shu?
 also read-Asp which book
 b. na-ben shu, Lili **ye** kan-le t_i ?
 ‘Which book did Lili, too, read?’
 ‘which’ >> ‘also’; *‘also’ >> ‘which’ (Kim (2002: 626))
- (15) a. ?? (**lian**) Lili **dou/ye** kan de dong naben shu?
 even even/also read understand which book
 b. na-ben shu, (**lian**) Lili **dou/ye** kan de dong t_i ?
 ‘Which book could even Lili understand?’
 ‘which’ >> ‘even’; *‘even’ >> ‘which’
- (16) a. * shei **ye/dou** kan bu dong naben shu?
 who also/even read not understand which book
 b. na-ben shu, shei **ye/dou**⁵ kan bu dong t_i ?
 ‘Which book did everyone fail to understand?’
 ‘which’ >> ‘everyone’; *‘everyone’ >> ‘which’ (Kim (2002: 626))⁶

These examples show that lexical items such as “ye” (‘also’) and “dou” (‘even’) are interveners to WH movement of wh-phrases. Furthermore, when wh-phrases are placed before the interveners as in the *b* examples in (14), (15), and (16), the sentences become grammatical. Interestingly, wh-phrases always take wide scope over interveners whether the wh-phrases go through dislocation or not. Note also that even if “lian” (‘even’) is omitted, the ‘even’ interpretation is retained and the intervention effect continues to arise as in (15)*a*. Considering these facts, it is most likely that the intervention effect is observed in Chinese wh-questions and “dou” as well as “ye” is an intervener.

I basically follow Hagstrom’s (1998) analysis of the intervention effect.⁷ According to him, interveners share the same feature(s) as C, so when an intervener is generated between C and an in-situ wh-phrase, the wh-phrase wrongly enters the checking relationship with the intervener due to the Minimal Link Condition (MLC) (cf. Chomsky (1995)). Since C and the wh-phrase do not check each other, the ungrammaticality follows. This is why (14)*a*, (15)*a*, and (16)*a* are ungrammatical. The reason why (14)*b*, (15)*b*,

and (16)*b* are grammatical is that after some optional movement of the wh-phrases, C will be the closest target for the wh-phrases, so nothing blocks WH movement. Following Aoun and Li (2003), I will call such an optional movement “a contrastive topic” movement in this paper.

If no intervener is generated between C and an in-situ wh-phrase, scope interaction is observable whether a contrastive topic movement is applied to the wh-phrase or not:

(17) a. ta baba he ta mama ge⁸ kan naben shu?

his father and his mother each read which book

b. naben shu, ta baba he ta mama ge kan *t_i*?

‘What did his father and mother each read?’

‘what’ >> ‘his father and mother’; ‘his father and mother’ >> ‘what’

Since “he” (‘and’) is not an intervener, (17)*a* is not subject to the intervention effect. Furthermore, the sentence remains ambiguous even after contrastive topic movement is applied to the wh-phrase. One reading arises when the wh-phrase takes wide scope with respect to ‘his father and mother’. This reading can be answered as in ‘they read Hamlet.’ In other words, both his father and his mother read the same book. This type of answer is called a *single-list* answer and the reading which induces a *single-list* answer is called a *single-list* reading. On the other hand, the other reading is available when ‘his father and mother’ takes wide scope. This reading can be answered as in ‘his father read Hamlet and his mother read Macbeth.’ Therefore, his father and mother read a different book. This type of answer is called a *pair-list* answer and the reading generating this answer is called a *pair-list* reading.

2.3. The intervention effect in Chinese relative clauses

In this subsection we will look at what happens when interveners are employed in relative clauses. Examine the following sentences:

(18) John mei kan [ta mama ye kan de] yi-ben shu.

not read his mother also read DE one-CL book

‘John didn’t read a book that his mother also read.’

‘a book’ >> ‘also’; * ‘also’ >> ‘a book’

- (19) John mei kan [(**lian**) ta mama **dou/ye** kan de] yi-ben shu.
not read even his mother even/also read DE one-CL book
'John didn't read a book that even his mother read.'
'a book' >> 'even'; * 'even' >> 'a book'

- (20) John mei kan [shei **dou/ye** kan de] yi-ben shu.
not read who even/also read DE one-CL book
'John didn't read a book that everyone read.'
'a book' >> 'everyone'; * 'everyone' >> 'a book'

When an intervener is in the subject and the head is derived from the object, scope interaction is unavailable, that is, the sentence is unambiguous. If no intervener is employed, the sentence becomes ambiguous as follows:

- (21) John mei kan [ta baba he ta mama ge kan de] yi-ben shu.
not read his father and his mother each read DE one-CL book
'John didn't read a book that his father and mother each read.'
'a book' >> 'his father and mother'; 'his father and mother' >> 'a book'

Here is another contrasting set of the intervention effect:

- (22) wo kanle [tamen **dou** xie] de liang-pian wenzhang.
I read they each write DE two-CL article
'I read the two articles that each of them wrote.'
'two articles' >> 'each'; * 'each' >> 'two articles'
- (23) wo kanle [tamen ge xie de] liang-pian wenzhang.
I read they each write DE two-CL article
'I read the two articles that each of them wrote.'
'two articles' >> 'each'; 'each' >> 'two articles'

Both “dou” and “ge” induce distributive interpretations as *each* and *every* in English. However, in the case of “dou”, scope ambiguity disappears. Hence, “dou” is an intervener. Accordingly, if interveners are employed in relative clauses in Chinese, scope interaction is absent. Although interveners alone do not cause ungrammaticality in relative clauses, they make scope interaction disappear as in wh-questions. Hence, the intervention effect is observed in relative clauses in Chinese too.⁹

To sum up the last two subsections, there is a difference and a similarity between wh-questions and relative clauses in terms of the intervention effect.

As observed in *wh*-questions such as (14), (15), and (16), if interveners are placed between *C* and *in-situ wh*-phrases, the sentences result in ungrammaticality. On the other hand, in the case of relative clauses, the use of interveners does not cause ungrammaticality as in (18), (19), (20) and (22). This is one difference between *wh*-questions and relative clauses. However, one similarity is that interveners never take scope over operators, that is, *wh*-phrases in *wh*-questions and promoted heads in relative clauses (i.e. the ones which go through *WH* movement) always take wide scope with respect to interveners. Accordingly, although it is necessary to explain the difference, the disappearance of ambiguity as observed in (10)*a*, which is repeated below, can be attributed to the existence of interveners.

- (10) a. wo hui zhengli [[meigeren **dou** hui kan *t* de] san-ben shu]
 I will arrange everyone each will read DE three-CL book
 ‘I will put the three books that everyone will read in order.’
 ‘three books’ >> ‘everyone’; * ‘everyone’ >> ‘three books’

(Aoun and Li (2003: 133–134))

Though both Aoun and Li’s (1993, 2003) account and the present account agree that the disappearance of ambiguity is due to the presence of “*dou*” in (10)*a*, the two accounts differ as follows. Aoun and Li argue that “*meigeren*” (‘everyone’) cannot be quantifier-raised to the matrix clause across “*dou*”, whereas I claim that “*dou*” interferes with the promotion (or *WH* movement) of “*san-ben shu*” (‘three-CL book’) to the head position. One counterexample to Aoun and Li’s claim has been presented above (cf. (13)). However, even if the present line of thinking is correct, two questions remain to be explained. First, why does ambiguity disappear when interveners are employed? Second, why does the presence of interveners cause ungrammaticality not in relative clauses but only in *wh*-questions? I am going to answer these questions next.

2.4. A condition on scope reconstruction

I will deal with the disappearance of ambiguity in *wh*-questions first. Above, following Hagstrom (1998), I have attributed the intervention effect to the MLC. This is why ungrammaticality follows when an intervener is generated

between C and an in-situ wh-phrase (cf. (14)*a*, (15)*a*, and (16)*a*) whereas the ungrammaticality is lifted if the wh-phrase is placed higher than the intervener due to the contrastive topic movement (cf. (14)*b*, (15)*b*, and (16)*b*). However, this argument alone does not account for the reason why scope interaction is undetected if interveners are employed. In other words, it is not clear why the reconstruction of the wh-phrases is disallowed in (14)*b*, (15)*b*, and (16)*b*, which would make them ambiguous. It seems that when there is more than one kind of movement involved, reconstruction to the base-generated position is blocked. This observation is indeed correct. Consider the following Chinese and English examples:

- (24) a. Someone_{*i*} is loved *t_i* by everyone. (ambiguous)
 b. Who_{*i*} *t'_i* is loved *t_i* by everyone? (unambiguous)
 (Aoun and Li (1993: 63))
- (25) a. (Yaoshi) yige nuren_{*i*} bei meigeren ma *t_i* ... (ambiguous)
 if a woman by everyone scold
 '(If) a woman was scolded by everyone ...'
 b. Shei_{*i*} *t'_i* bei meigeren ma *t_i*?¹⁰ (unambiguous)
 who by everyone scold
 'Who was scolded by everyone?' (Aoun and Li (1993: 65))

(24)*a* and (25)*a* show that objects are raised to subject positions due to passivization. In both English and Chinese, passivization causes ambiguity. Therefore, NP movement may make sentences ambiguous. However, as (24)*b* and (25)*b* exhibit, NP movement followed by WH movement does not allow scope interaction. The contrast in (24) and (25) is explained if chains made by NP and WH movement are of different kinds and reconstruction across distinct chains is disallowed. To generalize these phenomena, I posit the following condition:

(26) A condition on scope reconstruction:

Reconstruction of scope is possible only within the same chain.

If this condition is correct, it follows that (14)*b*, (15)*b*, and (16)*b* do not allow the reconstruction of the wh-phrases into the base-generated positions. Similarly, it is possible to apply the same explanation to the question of why scope interaction of interveners and heads is unobservable as in (18),

(19), (20) and (22). For the sake of exposition, (18) is slightly modified and presented below:

- (18) John mei kan [_{CP} t'_i ta mama ye kan t_i de] yi-ben shu_i.
 not read his mother also read DE one-CL book
 'John didn't read a book that his mother also read.'
 'a book' >> 'also'; * 'also' >> 'a book'

The reason why (18) is unambiguous is the following. The promoted head, "yi-ben shu" ('one-CL book'), is first base-generated in the object position of the embedded verb, t_i . Normally the head is raised directly to the spec of CP via WH movement. However, in this case, the intervener, "ye" ('also'), intervenes with the movement. To avoid this intervener, the head goes through contrastive topic movement and reaches t'_i . As shown before, interveners do not block contrastive topic movement. Examine the following examples below, one of which is repeated:

- (11) san-ben shu_i, wo xiang meigeren **dou** hui kan t_i , bu zhi liang-ben shu
 three-CL book I think everyone each will read not only three-CL book
 'Three books, I think everyone will read, not just two books.'
 'three books' >> 'everyone'; 'everyone' >> 'three books'

(Aoun and Li (2003: 134))

- (27) san-ben shu_i, wo xiang Lili **dou/ye** hui kan t_i , bu zhi liang-ben shu
 three-CL book I think Lili even/also will read not only three-CL book
 'Three books, I think even/also Lili will read, not just two books.'
 'three books' >> 'even/also Lili'; 'even/also Lili' >> 'three books'

As in (11) and (27) indicate, the contrastive topic movement of "san-ben shu" ('three-CL book') is not blocked by interveners such as "dou" and "ye". Furthermore, the reconstruction of the phrase is possible. Hence, both examples are ambiguous.

Coming back to (18), the movement of "yi-ben shu" ('one-CL book') from t_i to t'_i is legitimate despite the presence of "ye". Here I also assume that contrastive topic movement is movement into the spec of CP. Then, the movement of the head to the spec of CP by WH movement is saved. Finally, the head is dislocated into the head position of the relative clause. As a result, two kinds of chain are generated as follows:

(28) a. contrastive topic movement chain: $\{ t'_p, t_i \}$

b. WH movement (or relativization) chain: $\{ \text{yi-ben shu}, t'_i \}$

Since reconstruction of the head with respect to scope is limited to the WH movement chain and none of the traces is lower than the intervener, the sentence permits only the wide scope reading of the head. The other examples are explained in the same way. This is why the existence of interveners makes wh-questions and relative clauses unambiguous.

If the account above is correct, the other question is naturally accounted for too. The reason why no ungrammaticality is detected in relative clauses is that contrastive topic movement is obligatory for successful derivation. In other words, if no contrastive topic movement is applied to wh-phrases to avoid interveners, the derivations crash, which we will not be able to observe because the presented examples are all grammatical sentences, that is, the results of successful derivations. This claim, if correct, has an interesting consequence. That is to say, optional movement such as contrastive topic movement sometimes must be initiated to successfully generate relative clauses. In other words, application of optional movement is sometimes obligatory.

To sum up, the intervention effect in wh-questions and relative clauses in Chinese has been discussed. The existence of interveners such as “dou” and “ye” makes wh-questions and relative clauses lose scope interaction. The reason for unambiguity is attributed to the claim that contrastive topic movement is applied before WH movement and scope reconstruction across different chains is disallowed. This argument in turn suggests that reconstruction of scope in relative clauses is possible contra Aoun and Li (2003). Accordingly, I conclude that the promoted heads of relative clauses can project up to at least NumP when they are base-generated inside relative clauses.

In this paper I have argued that the intervention effect, which is originally a phenomenon in wh-questions, is also observed in relative clauses in Chinese. This fact suggests that the same kind of WH movement is involved in both wh-question and relative clauses in Chinese. Furthermore, I have shown that

contra Aoun and Li (1993, 2003), the unavailability of scope interaction is due to the presence of interveners. Specifically, “dou” and “ye” are interveners in Chinese. To avoid interveners, contrastive topic movement must be applied before relativization. Therefore, without interveners, scope interaction is available in Chinese relative constructions. Hence, Aoun and Li’s claim that the promoted heads of relative clauses project up to only NP is untenable. In other words, as far as idiom chunks, binding and scope interaction are concerned, Chinese relative clauses are not different from English.

Notes

- * I would like to thank Liang Chua Morita, Donglan Huang, and Jie Hu for judgment of the Chinese examples in the paper. I am very thankful for their generosity despite repeated inquiries.
- 1 Strictly speaking, the matching and the *wh*-operator movement analysis are slightly different. In the former, two identical nominal expressions are involved to form a relative clause: one is base-generated in the head position, and the other is base-generated within a relative clause and raised (to spec of CP). Then, the latter nominal expression is deleted under identity. On the other hand, in the case of the *wh*-operator movement analysis, a raised element is not the identical nominal expression (to the head) but a *wh*-phrase. For the sake of exposition, I regard the two analyses as the same in this paper.
- 2 Actually, Aoun and Li (2003) are not clear on the availability of the wide scope reading of “san-ben shu” (‘three books’). However, according to my informants, this reading is possible, that is, the sentence is ambiguous.
- 3 As one can easily guess, even the other approach in which the reconstruction of the entire head is possible can account for the contrast. In other words, the head with the quantifier, even if this whole phrase is reconstructed into the relative clause, cannot take narrow scope with respect to “meige luyoudian” (‘every tourist spot’) because even the reconstructed (i.e. base-generated) position is higher than “meige luyoudian”. Thus, the argument here by Aoun and Li (1993) is not convincing enough to claim that promoting larger than NP is forbidden in Chinese.
- 4 I employ the term, “the intervention effect”, following Hagstrom (1998), Pesetsky (2000) and Kim (2002) in this paper.
- 5 When a *wh*-phrase is employed with “dou” or “ye”, it turns into a universal quantifier-like phrase. Following Ramchand (1997) and Morita (2005), this semantic

function of “dou” and “ye” can be treated in the same way as the semantic function of “dou” as ‘even’ and “ye” as ‘also’ in the previous examples. That is, all of them function as conjunction. With alternative sets due to contrastive focus (cf. Rooth (1985, 1996)), they can mean ‘even/also’ or ‘every’. See Morita (2005) for details.

- 6 In the original examples of Kim’s (2002), “dou” is not employed. But “dou” is added to Kim’s examples because “ye” and “dou” are interchangeable in those examples without affecting the grammatical judgment according to my informants.
- 7 For a pragmatic account of the intervention effect, see Lee and Tomioka (2000).
- 8 I have employed “ge” (‘each’) to prevent the collective reading of “ta baba he ta mama” (‘his father and his mother’). Plural NPs and conjoined NPs as in the example in the subject position only allow collective readings in Chinese. But with the addition of “ge” (‘each’) and “dou” (‘each’), distributive readings can be generated. See Li (1997) for details. Thus, the wide scope reading of “ta baba he ta mama” in the example is due to quantificational interaction.
- 9 The same conclusion is reached in Japanese too. See Morita (2006) for details.
- 10 This is an LF representation because WH movement is covert in Chinese (cf. Huang (1981/82)).

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インターベンション効果が中国語関係節の 派生に与える影響

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この論文は、中国語関係節の派生に、(i)名詞句自体が関係節内から移動することにより関係節を形成する繰上げ操作と(ii)目に見えないオペレータが移動するので、関係節を統治する名詞句は移動しないマッチング操作の両方が必要であると主張するAoun and Li (2003)を支持するものの、繰上げ操作において、移動する名詞句はNPまでしか投射しないという考えには異議を唱えるものである。Aoun and Li (2003)は移動する名詞句は数量詞を含まない(すなわち、NumPまで投射しない)ために、名詞句が再構築されることにより生じる数量詞相互作用現象は存在しないと述べている。しかしながら、Aoun and Li (2003)自身がデータで示しているように、普遍数量詞(*meigeren*)が単独で使用された場合は、数量詞相互作用現象を示し、*dou*と共に使用された場合は、数量詞相互作用現象を示さない。そこで、本論文では、名詞句が再構築されることにより生じる数量詞相互作用現象は存在することを新たなデータをもとに主張する。また、*meigeren*が*dou*と共に起した場合には、*dou*が名詞句繰上げを妨げるもの、すなわち、インタービナーであるために、移動された名詞句が数量詞相互作用を示すことの出来る場所に、再構築できないと指摘することにより、数量詞相互作用現象を示さないと提唱する。これにより、Aoun and Li (2003)の主張とは異なり、中国語関係節の繰上げ操作において、移動する名詞句は少なくともNumPまでは投射していることを示すことが可能になる。