Two Concepts of Locality:
The *Respectively*-interpretation of *Fenbie*

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Abstract

The present work focuses on the *respectively*-interpretation of the adverb *fenbie* in Chinese and its counterparts in English and French. It is shown that intervention effects are observable in the respectively-interpretation in bi-clausal constructions in these languages, with the subject of the embedded clause functioning as an intervenor. However, the clausal or phasal boundaries are not involved in the account for the locality effects in the respectively-interpretation. The empirical study shows that the two concepts of locality, namely the Relativized Minimality and the Phase Impenetrability Condition, cannot be unified since they operate on different computational environments: the Phase Impenetrability Condition doesn't operate on the semantic component while the Relativized Minimality does.

Keywords

locality, *respectively*-interpretation, *fenbie*, Phase, Minimality

1. Introduction

Locality conditions are conceived as general principles which restrict syntactic operations in the computation of grammar (Hu 2002). Under the framework of the Minimalist Program (MP), locality conditions have been generalized into two concepts: one is based on phase, i.e. the Phase Impenetrability Condition (PIC), and the other is based on intervention, i.e. the Relativized Minimality (RM).

This paper explores the application domain of the two conditions and answers the question whether one of them can be canceled or whether one condition can be incorporated into the other. Based on the comparative study of the *respectively*-interpretation (R-I) in Chinese and in English/French, this paper argues that the two locality conditions apply at different syntactic levels, with PIC at the overt syntactic level and RM at the covert syntactic level. Therefore, neither of them can be cancelled, nor can one condition be subsumed under the other, as proposed by Bošković (2007) and Rouveret (2016b).

Furthermore, this paper compared the syntactic and semantic properties of the preverbal adverb *fenbie* 'separately/respectively' in Chinese and those of *respectively* and *respectivement* in English and French. It is found that different from the counterpart *respectively/respectivement* in English and French, *fenbie* has a more restricted syntactic distribution in Chinese, and it is ambiguously interpreted either as 'separately' or as 'respectively'.

This paper is organized as follows. In section 2, the two types of locality conditions, namely PIC and RM are introduced. In section 3, the syntactic and semantic properties of *respectively/respectivement* in English/French and *fenbie* in Chinese are explored. In section 4, the internal structures of different types of pivotal constructions in both French and Chinese are compared. In section 5, the application domain of the two locality conditions is examined by analyzing the *respectively*-interpretation in both French and Chinese within the bi-clausal constructions. The final section is the conclusion.

2. The Relativized Minimality and the Phase Impenetrability Condition

The minimality condition was one of the conditions defining the notion of *barrier*, as originally proposed by Chomsky (1986).[1] Afterwards, Rizzi (1990, 1991) formulated the condition in terms of Relativized Minimality based on the idea that no syntactic relation (A, A', head agreement or movement) between two elements in identical types of positions or with identical features can be established across another element in the same type of the position or bearing the same features. Ever since Rizzi's works, many conditions involving minimality have been proposed, such as those proposed by Chomsky (1993, 1995, 2000, 2001): the Shortest Movement Condition, the Attract Closest and the Minimal Link Condition; the Feature-relativized Minimality proposed by Ferguson (1996), Bianchi (2006), and Béjar & Rezac (2009); and the Gross Minimality proposed by Cecchetto & Donati (2015). According to these conditions, the syntactic relation between X and Y as in (1) is blocked by the presence of another element A, if A occupies the same type of the position as X and Y or carries the same features as X or Y. But they differ in that some conditions are relativized based on the positions whereas others are relativized based on the features.

(1)　$X_{[F]} \ldots A_{[F]} \ldots Y_{[F]}$[2]

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[1]　The other condition defining *barrier* is based on *L-marking*, where *L* is short for *Lexical*.

[2]　The following abbreviations are used in the present work:
Aux: auxiliary; Cl: Clitic; CL: Classifier; ECM: Exceptional Case Marking; LF: Inf: Infinitive; Logical Form; M: Masculine; Obj: Object; Perf: Perfective; PIC: Phase Impenetrability Condition; Pl: Plural; Pres: Present Tense; Prog: Progressive; R-I: *Respectively*-Interpretation; RM: Relativized Minimality; Sg: Singular; Subj: Subject; 3: the Third Person.

In addition to the minimality conditions, another concept of locality is founded by stipulating that certain projections may determine absolute computational domains prohibiting outside syntactic operations. According to Chomsky (2001), syntactic objects are transferred phase by phase. Phases are determined by the projections of CP and v*P, with C and v* as the heads of the phases and TP and VP as the complements of the phase heads. According to the Phase Impenetrability Condition proposed by Chomsky (2001, 2004), X and Y are the phase heads in (2) respectively. The domain of Y is inaccessible to the outside of YP once X is introduced into the structure. Although the notion of phase is originally proposed to characterize the syntactic computation, the impenetrability condition can be conceived as a locality condition.

(2)　… [$_{XP}$ … X … [$_{YP}$ … Y …]]

Recently, several researchers attempt to subsume one of the concepts of locality under the other. Abels (2003) suggested that the phasal locality be subsumed under the minimality, whereas Müller (2011) proposed an opposite position. Furthermore, Bošković (2007) argued that the two concepts of locality are applied to different syntactic operations. While PIC constrains Move, RM constrains both Move and Agree. The present work shows that the two concepts of locality cannot be unified as one since they operate at different syntactic levels. This conclusion is achieved by comparing the R-I of the preverbal adverb *fenbie* in Chinese with its counterpart *respectively/respectivement* in English/French.

3. The *respectively*-interpretation and *fenbie* in Chinese

The R-I refers to a bijective distributive reading between two elements: an antecedent, e.g. *John and Mary* in (3), and a connected element, i.e. *sang and danced* in (3). In this section, we will investigate the syntactic and semantic properties of the R-I.

(3)　*John and Mary sang and danced respectively.*

3.1. The distributivity and cumulativity of *respectively*

Chaves (2012) is one of the most important studies concerning the R-I, according to which, the adverb *respectively* can trigger a distributive reading, as shown in (4a). Without the adverb *respectively*, the relevant sentence may be ambiguous in having various possible mappings, as shown in (4b).

(4)　a. *The two soldiers hit two targets respectively.*
　　　　Intended interpretation: 'Soldier A hits target 1 and soldier B hits target 2.'

b. *The two soldiers hit two targets.*

Possible mappings: 1. $S_A \to T_1$ 2. $S_A \to T_1$ 3. $S_A \to T_1$ 4. $S_A \to T_1$ 5. $S_A \to T_1$
$S_B \to T_2$ $S_B \to T_2$ $S_B \to T_2$ $S_B \to T_2$ $S_B \to T_2$
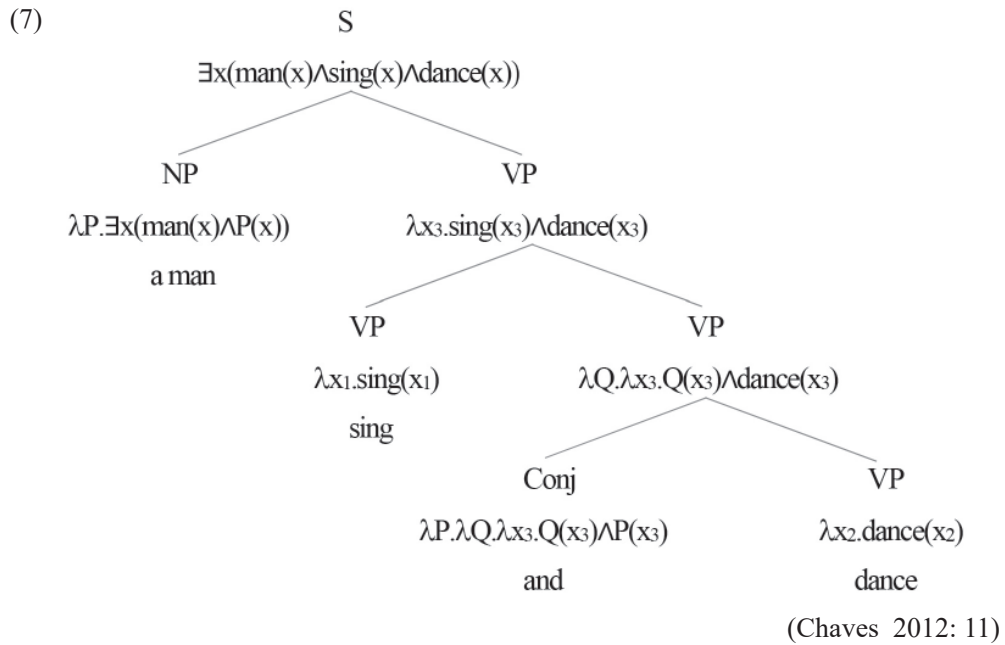
Among all the cumulative interpretations represented by the possible mappings in (4), only two are bijective, namely the first and second ones. The interpretation of (4a) with the presence of *respectively* only corresponds to the first mapping. Thus, as pointed out by Chaves (2012), the function of the adverb *respectively* is to single out one of the bijective relations in the set of possible independently obtained cumulative interpretations. The examples in (4) seem to involve the cumulative process on arguments, but sometimes the cumulative process can also target on verbal expressions, as in (5). In fact, even for the argument conjunction in (4), the bijective cumulative process can also be viewed as targeting on two predicates denoting two events: the first refers to *soldier A hits target 1* and the second refers to *soldier B hits target 2*.

(5) *For their talent exposition, the top three pageant winners sang, breathed fire, and played the kazoo respectively.* (Chaves 2012: 10)

In order to account for the R-I on predicate conjunction, Chaves (2012) explored the semantic properties of conjunction and the function of the adverb *respectively*. Given the contrast in (6), the first sentence without the adverb *respectively* is ambiguous. In the 'strict reading', *Tom* and *Sue* perform both the two actions of *sing* and *dance*. The 'weak reading' corresponds to the R-I, in which *Tom sang* and *Sue danced*. With the adverb *respectively* in (6b), the R-I is enforced, and the strict reading is no longer possible in this case.

(6) a. *Tom and Sue sang and danced.*
   Strict reading: 'Tom and Sue sang, and Tom and Sue danced.'
   Respectively-reading: 'Tom sang, and Sue danced.'
   b. *Tom and Sue sang and danced respectively.*
   Respectively-reading: 'Tom sang, and Sue danced.'

Admitting that the VP coordination assumes that conjuncts must necessarily share the subject, the subject *Tom and Sue* in (6a) can be viewed as a single entity, as shown in (7):

(7)　　　　　　　　　　　　　　S

$\exists x(man(x)\wedge sing(x)\wedge dance(x))$

NP　　　　　　　　　　　VP

$\lambda P.\exists x(man(x)\wedge P(x))$　　$\lambda x_3.sing(x_3)\wedge dance(x_3)$

a man

VP　　　　　　　　　　VP

$\lambda x_1.sing(x_1)$　　　$\lambda Q.\lambda x_3.Q(x_3)\wedge dance(x_3)$

sing

Conj　　　　　　　　VP

$\lambda P.\lambda Q.\lambda x_3.Q(x_3)\wedge P(x_3)$　　$\lambda x_2.dance(x_2)$

and　　　　　　　　　dance

(Chaves 2012: 11)

Chaves adopted Link (1983)'s sum operator '$\oplus$' (defined as $[[x\oplus y]]=[[x]]\sqcup[[y]]^3$) to account for (6a). The logical form (LF) of (6a) is represented in (8), which captures the two readings of the sentence: if $x_1=x_2$, then the sum operator '$\oplus$' doesn't form a plurality and the strict reading is obtained according to which both *Tom* and *Sue* are agents of *sing* and *dance*; when $x_1\neq x_2$, then '$\oplus$' is interpreted as a plurality-forming cumulation, where $t\sqcup s=x_1\sqcup x_2$. However, the sum operator cannot distinguish whether $t=x_1$, $s=x_2$ or $t=x_2$, $s=x_1$. As such, in the R-I, the adverb *respectively* is added to single out one of the two above correspondences.

(8)　$\exists e(e=e_1\oplus e_2\wedge sing(e_1,x1)\wedge dance(e_2,x2)\wedge(t\oplus s)=(x1\oplus x2))$　　　(Chaves 2012: 13)

Chaves proposed that *respectively* is similar to other adverbs, restricting the semantics of the verbal structure that it adjoins to. According to his account, *respectively* "construes two sets X and Y. X contains all tuples describing an event *e'* where *e'* is part of *e*, and Y is composed of all pairs of entities occupying two fixed positions *n* and *m* in the tuples of X, and Y must be a bijection according to a contextual ranking *r*", as represented in (9).

3　According to Link (1983), a plural noun phrase like *John and Mary* denotes a plural individual that is the sum (represented by $\sqcup$) of the singular individuals *John* and *Mary*.

(9) respectively:$\lambda P.\lambda x.\lambda e.(P(x)(e)\wedge respectively(e))$, where e is the event variable.

$[[respectively(e)]] = 1$ iff

$X=\{\tau:\exists P\exists e'(\tau\in I(P)\wedge\tau=<e', \ldots>\wedge e'\leq[[e]])\}\wedge\exists n\exists m(Y=\{(p_n, q_m):<\ldots, p_n, \ldots, q_m, \ldots>\in X\}\wedge[[Bij_r(Y)]])^4$

$[[Bij_r(Y)]] = 1$ iff

$\neg\exists a\exists b\exists c(a\neq b\neq c\wedge(\{(a, b), (a, c)\}\subseteq Y\vee\{(a, b), (c, b)\}\subseteq Y))$. (Chaves 2012: 16–17)

Based on Link (1983), Krifka (1990) and Chaves (2012), the LF of (10a) is formulated as in (10b), and the LF of (10c) is formulated as in (10d).

(10) a. *Tom and Sue sang and danced respectively.*
    b. $\exists e(e=e_1\oplus e_2\wedge sing(e_1,x_1)\wedge dance(e_2,x_2)\wedge(t\oplus s)=(x_1\oplus x_2)\wedge respectively(e))$
    c. *Tom and Fred love Sue and Mia respectively.*
    d. $\exists e(e=e_1\oplus e_2\wedge love((e_1,x_1,y_1),(e_2,x_2,y_2))\wedge(t\oplus f)=(x_1\oplus x_2)\wedge(s\oplus m)=(y_1\oplus y_2)\wedge respectively(e))$

3.2. The adverb *fenbie* in Chinese

The preverbal adverb *fenbie* in Chinese differs from its counterpart *respectively/ respectivement* in English/French in both syntactic and semantic properties. Besides it can trigger a R-I as *respectively* in English or *respectivement* in French, it has a default interpretation meaning 'separately', as in (11a). On the contrary, neither *respectively* in English nor *respectivement* in French can be interpreted as 'separately', as indicated by (11b).

(11) a. 張三和李四分別跳了舞。
     Zhangsan he Lisi   fenbie   tiao-le   wu.
     Zhangsan and Lisi separately dance-Perf dance
     'Zhangsan and Lisi danced separately.'
    b. **Jean et Marie ont   dansé respectivement.*
      John and Mary Aux$_{3PlPres}$ danced respectively
      ('John has danced, and Mary has danced too.')

In (12a), the sentence without *fenbie* is not ambiguous, bearing only one interpretation. That is, both *Zhangsan* and *Lisi* are the subjects of the two verbs *changge* 'sing' and *tiaowu* 'dance'. In (12b), the sentence with *fenbie* is ambiguous with the strict reading and the R-I

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4   'τ' stands for 'time', 'I' stands for 'interval', and '≤' means 'be part of'.

reading. Thus, it should be pointed out that the sentence with *fenbie* in Chinese corresponds to its counterpart in (6a) in English where *respectively* is absent. When the R-I is triggered by *fenbie*, there are two conjunct pairs, either NPs or predicates. We call the former pair the antecedent, e.g. *Zhangsan he Lisi* 'Zhangsan and Lisi' in (12b), and the latter pair the connected element, e.g. *Riben he Faguo* 'Japan and France' in (12b).

(12) a. 張三和李四唱歌和跳舞。
　　　 Zhangsan he Lisi　changge he tiaowu.
　　　 Zhangsan and Lisi sing　　and dance
　　　 'Zhangsan and Lisi sing and dance.'
　　　 '#Zhangsan sings and Lisi dances.'
　　b. 張三和李四分別去了日本和法國。
　　　 Zhangsan he Lisi　fenbie　　　　　　qu-le　　Riben he Faguo.
　　　 Zhangsan and Lisi separately/respectively go-Perf Japan and France
　　　 Strict reading 1: 'Zhangsan went to Japan and France, and Lisi went to Japan and France.'
　　　 Strict reading 2: 'Zhangsan and Lisi went to Japan, and Zhangsan and Lisi went to France.'
　　　 Respectively-reading: 'Zhangsan went to Japan and Lisi went to France.'

From the above discussion, it can be noticed that the R-I is established on the semantic component, i.e. at least in the covert syntax (or even later), rather than in the overt syntax. Semantically, the example (12b) shows that *fenbie* can denote several cumulative readings (bijective or not), contrary to *respectively* in English. Since *fenbie* can be interpreted as either 'separately' or 'respectively'. The following mappings may indicate the different readings of (12b).

(13) a. *Separately*-reading: 1. Zhangsan ⟶ Japan
　　　　　　　　　　　　　　 Lisi ⟶ France
　　　b. *Respectively*-reading: Zhangsan ⟶ Japan
　　　　　　　　　　　　　　 Lisi　　⟶ France

The LF representations of (11a) and (12b) are shown in (14) respectively:

(14) a. LF of (24a): $\exists e(sing(e,x) \wedge (z \oplus l)=x)$
　　　b. LF of (24c): $\exists e(go(e,x,y) \wedge (z \oplus l)=x \wedge (m \oplus f)=y)$

Syntactically, the syntactic distribution of *fenbie* in Chinese is more restricted than *respectively* in English or *respectivement* in French. The following examples show that *respectivement* in French can either follow the verb or appear at the end of the sentence.

(15) *Jean et Marie   ont   (respectivement) donné (respectivement) un livre*
     John and Mary Aux$_{3PlPres}$ respectively   given respectively   a book
     (*respectivement*) *à Paul et à Pierre   (respectivement)*.
     respectively   to Paul and to Pierre respectively
     'John has given a book to Paul and Mary has given a book to Pierre.'

Yang (2012) noticed that *fenbie* is situated locally in the v*P domain. He pointed out that *fenbie* must follow the aspectual, modal and temporal adverbs, as shown in (16), and it must precede the v*P-internal manner adverbials, as in (17).

(16) a. 約翰和瑪麗（＊分別）上星期（分別）去了台北和巴黎。 Time adverb > *fenbie*
     *Yuehan he Mali (*fenbie)   shang-xingqi (fenbie)   qu-le Taibei he Bali.*
     John and Mary   respectively last-week   respectively go-Perf Taipei and Paris
     'John and Mary went respectively to Taipei and Paris last week.'
   b. 約翰和瑪麗（＊分別）或許（分別）去了台北和巴黎。 Modal adverb > *fenbie*
     *Yuehan he Mali (*fenbie)   huoxu   (fenbie)   qu-le   Taibei he Bali.*
     John and Mary   respectively probably respectively go-Perf Taipei and Paris
     'John and Mary went probably to Taipei and Paris respectively.'
   c. 約翰和瑪麗（＊分別）已經（分別）去了台北和巴黎。 Aspectual adverb > *fenbie*
     *Yuehan he Mali (*fenbie)   yijing   (fenbie)   qu-le   Taibei he Bali.*
     John and Mary   respectively already respectively go-Perf Taipei and Paris
     'John and Mary went already to Taipei and Paris respectively.'
(17) 張三和李四（分別）狠狠地（＊分別）批評了約翰和瑪麗。 *fenbie* > Manner adverb
     *Zhangsan he Lisi (fenbie)   henhende (*fenbie)   piping-le Yuehan he Mali.*
     Zhangsan and Lisi respectively hardly   respectively criticize-Perf John and Mary
     'Zhangsan and Lisi criticized hardly John and Mary respectively.'

Suppose that the modal, aspectual and time adverbs are external of v*P. The fact that *fenbie* must follow such adverbs and precede the v*P internal manner adverb suggests that *fenbie* is adjoined to v*P.

The above examples show the syntactic position of *fenbie* in simple sentences. If the R-I is established across clause boundaries in bi-clausal constructions, *fenbie* must be adjoined only to the matrix verb and targets on it, as shown in (18a), otherwise the conjunct antecedent

cannot be interpreted separately in two events and hence the R-I is prohibited, as shown in (18b). This suggests that *fenbie* must always be attached to its target predicate.[5]

(18) a. 張三和李四分別勸王五 ᵢ[PROᵢ 去學校和醫院]。
　　　Zhangsan he Lisi　fenbie　　quan　　Wangwui [*PROᵢ qu xuexiao he yiyuan*].
　　　Zhangsan and Lisi respectively persuade Wangwu　　go school and hospital
　　　'Zhangsan persuades Wangwu to go to the school and Lisi persuades Wangwu to go to the hospital.'
　　　'#Zhangsan and Lisi persuade Wangwu to go to the school and Zhangsan and Lisi persuade Wangwu to go to the hospital.'
　　b. 張三和李四勸王五 ᵢ[PROᵢ 分別去學校和醫院]。
　　　Zhangsan he Lisi　quan　　Wangwui [*PROᵢ fenbie　　qu xuexiao he yiyuan*].
　　　Zhangsan and Lisi persuade Wangwu　　respectively go school and hospital
　　　'#Zhangsan persuades Wangwu to go to the school and Lisi persuades Wangwu to go to the hospital.'
　　　'Zhangsan and Lisi persuade Wangwu to go to the school and Zhangsan and Lisi persuade Wangwu to go to the hospital.'

4. The pivotal constructions in Chinese

In this section focuses on the complementation constructions in Chinese. The relevant constructions are described as pivotal constructions in the literature (Ding, Lü & Li 1961). The internal structures of the pivotal constructions in Chinese will be determined in this section by comparing with the complementation constructions in French.

4.1. The subcategorizations of different complementation verbs in French

In Indo-European languages like French and English, complementation constructions are bi-clausal, such as the completive construction, e.g. (19); the subject and object control constructions, e.g. (20); and the ECM construction, e.g. (21). From the following examples, it can be noticed that the embedded clauses in different complementation constructions are in different tense status. The control verb and the ECM verb subcategorize a non-finite clause, whereas the embedded clause in the completive construction is finite.

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[5] One of the reviewers pointed out that to get the intended reading of (18), *fenbie* should be floated in a lower position, which means that (18b) should correspond to the intended R-I. However, our investigation on the natives' judgement confirms that only (18a) can have the R-I while (18b) implies that *Zhangsan* and *Lisi* are interpreted as a single unit.

(19) *Jean dit* [*que Paul a acheté le livre*]. Completive construction
John say$_{3SgPres}$ that Paul Aux$_{3SgPres}$ bought the book
'John says that Paul has bought the book.'

(20) *Jean a vu* [*Paul réparer la voiture*]. ECM construction
John Aux$_{3SgPres}$ seen Paul repair$_{Inf}$ the car
'John has seen Paul repair the car.'

(21) a. *Jean$_i$ veut* [PRO$_i$ *acheter le livre*]. Subject control construction
John want$_{3SgPres}$ buy$_{Inf}$ the book
'John wants to buy the book.'

b. *Jean a persuadé Paul$_i$* [*de* PRO$_i$ *venir*]. Object control construction
John Aux$_{3SgPres}$ persuaded Paul to come$_{Inf}$
'John persuaded Paul to come.'

Besides, the categorical status of the embedded clauses in these constructions are not identical either. The finite tense of the embedded clause in the completive construction implies that the embedded clause should carry a complete set of φ-features. Given that all the φ-features of the finite T are inherited from C (Chomsky 2008), the embedded clause of the completive construction is a CP. In the ECM construction in (20), the embedded subject values its φ-features with the matrix ECM verb. This can be justified by the cliticization of the embedded subject in the accusative form, reflecting the Case assignment and the feature valuation between the matrix verb and the embedded subject, as shown in (22a). In (21), the subject and the object control constructions involve a PRO in the subject position of the embedded clause. The co-reference between the matrix subject/object and the embedded empty subject cannot be established by movement due to the violation of the theta-criterion. Besides, the fact that the controlled PRO cannot be licensed in the embedded subject position under an ECM verb demonstrates that PRO cannot value the non-interpretable φ-features of the matrix verb as the lexical embedded subject in the ECM construction, as shown in (22b). This implies that a CP projection intervenes between the control verb and the controlled PRO.

(22) a. *Jean l'a vu* t̶e̶ *réparer la voiture*.
John CL$_{3MSg}$-Aux$_{3SgPres}$ seen repair$_{Inf}$ the car
'John has seen him repair the car.'

b. **Jean$_i$ a vu* PRO$_i$ *réparer la voiture*.
John Aux$_{3SgPres}$ seen repair$_{Inf}$ the car
(John has seen himself repair the car.)

Based on the above discussion, the internal structures of the different complementation constructions are shown in (23).

(23) a. Completive construction: … [$_{v*P}$ Subj$_{matrix}$ v* ([$_{VP}$ ⊻ Obj$_i$) [$_{CP}$ que [$_{TP}$ Subj$_{embedded}$ v*-T$_{finite}$ …

　　　b. ECM construction: … [$_{v*P}$ Subj$_{matrix}$ v* [$_{TP}$ Subj$_{embedded}$ v*-T$_{Inf}$ …

　　　c. Subject control construction: … [$_{v*P}$ Subj$_{matrix-i}$ v* [$_{CP}$ C [$_{TP}$ PRO$_i$ v*-T$_{Inf}$ …

　　　d. Object control construction: … [$_{v*P}$ Subj$_{matrix}$ v* [$_{VP}$ ⊻ Obj$_i$ [$_{CP}$ C [$_{TP}$ PRO$_i$ v*-T$_{Inf}$ …

Contrary to Indo-European languages, Chinese is described as an markedness language due to the lack of morphological inflections (Li & Thompson 1981, Klein, Li & Hendriks 2000, Mei 2002, Lin 2006, among many others). Since Tense is not morphologically manifested on the verbs in Chinese, it is difficult to distinguish different types of pivotal constructions in Chinese.

4.2. Finite vs. non-finite distinction in Chinese

Many researchers insist that there exists a distinction between finite and non-finite clauses in Chinese, though such a distinction is not morphologically manifested (Huang 1982, Li 1985, Ernst 1994, and among others). Huang (1982) argued that verbs like *shuo* 'say', *zhidao* 'know', *renwei* 'think' and *gaosu* 'tell' can be classified as completive verbs which select a finite clause, and those like *zhubei* 'prepare' and *bi* 'force' can be taken as control verbs which select a non-finite clause, as shown in (24). Several attempts have been proposed to test the distinction between the finite and non-finite clauses in Chinese, such as the lexicalized subject in finite clauses, the affixation of the modal auxiliary *hui* 'will', etc. According to Huang (1982), the finite clauses selected by completive verb in Chinese in (24a) allow lexical subjects and the modal auxiliary *hui* 'will', while the non-finite ones selected by control verbs in (24b) cannot. However, some researchers argue that the alleged finite and non-finite distinction does not exist at all. For example, Hu, Pan and Xu (2001) pointed out that in (24b) the modal auxiliary *hui* 'will' in the embedded clause denotes an objective futurity, while the main verb *zhunbei* 'prepare' cannot ensure the happening of its embedded event, thus causing an incompatibility between the verb in the matrix clause and the verb in the embedded clause.

(24) a. 張三 $_i$ 說 [李四 / 他 $_i$ 會去學校]。

　　　　Zhangsan$_i$ shuo [*Lisi/ta$_i$　　hui qu xuexiao*].

　　　　Zhangsan say　　Lisi/3MSg will go school

　　　　'Zhangsan says that Lisi/he will go to the school.'

　　　b. 張三 $_i$ 準備 [* 他 $_i$/PRO$_i$（ * 會）去學校]。

　　　　Zhangsan$_i$ zhunbei [*ta$_i$/PRO$_i$ (*hui) qu xuexiao*].

　　　　Zhangsan prepare　　3MSg　　　will go school

　　　　'Zhangsan prepares to go to the school.'

However, it appears that Hu, Pan and Xu's (2001) argument based on the semantic conflict between the verb *quan* 'persuade' and the modal auxiliary *hui* 'will' confirms the existence of the finite/non-finite distinction in Chinese. As argued by Bresnan (1972), non-finite clausal complements describe a hypothetic or a non-realized event. Stowell (1982) also argued that a non-finite clause is not specified for the feature [±past], and that non-finite clauses only express a possible realization of an event in the future. For example, the verb *quan* 'persuade' suggests that the persuaded event can be realized only if *Lisi* follows *Zhangsan*'s suggestion. The modal auxiliary *hui* 'will' denotes a future event of which the realization is objective. On the contrary, the embedded clause of *quan* 'persuade' cannot specify the realization of its denoted event. As a result, the semantic conflict reflects the non-finiteness of the embedded clause. Recently, some researchers have provided further evidence in support of the finite vs. non-finite distinction in Chinese. Sybesma (2007) proposed that the TP projection exists in Chinese. Lin (2011, 2015) noticed that the epistemic and root modals respectively select a finite clause and a non-finite clause as their complements. According to Lin (2011), the progressive marker *zai* can only occur in finite clauses since it needs a reference time to anchor the denoted progressive event time and only finite clauses expose the reference time. The examples in (25) confirm Lin's (2011) proposal. The progressive marker *zai* can be licensed in the finite complement of *zhidao* 'know' and is excluded in the non-finite complement of *zhunbei* 'prepare'.

(25) a. 張三知道 [李四在看書]。
　　　Zhangsan zhidao [*Lisi zai　kan　shu*].
　　　Zhangsan know　　Lisi Prog　read　book
　　　'Zhangsan knows that Lisi is reading books.'
　　b. * 張三準備 [在看書]。
　　　*Zhangsan_i zhunbei [*PRO_i zai　kan　shu*].
　　　 Zhangsan　prepare　　　　Prog　read　book
　　　('Zhangsan prepared to be reading books.')

Furthermore, following Fu (1994), Paul (2002) pointed out that only finite clauses in Chinese exhibit Object Shift, as in (26):

(26) a. 張三認為 [李四漢堡吃了~~漢堡~~]。
　　　Zhangsan renwei [*Lisi hanbao　　chi-le　~~haobao~~*].
　　　Zhangsan think　　Lisi hamburger　eat-Perf
　　　'Zhangsan thinks that Lisi has eaten the hamburger.'

b. * 張三勸李四 ᵢ[PROᵢ 漢堡吃漢堡-]。

　　*Zhangsan quan　　　Lisiᵢ [PROᵢ hanbao　　chi ~~hanbao~~].

　　　Zhangsan persuade Lisi　　　hamburger eat

　　('Zhangsan persuades Lisi to eat the hamburger.')

Based on the evidence given above, it is plausible to distinguish the finite clauses from the non-finite ones in analyzing the internal structures of the pivotal constructions in Chinese, in which the R-I is explored.

4.3. Internal structures of the pivotal constructions

The first question concerning the internal structures of the pivotal constructions is whether they are bi-clausal or not. As proposed by Tang (2001) and Li (2015), adjuncts indicating benefactive or purpose can adjoin to TP. As shown in (27), *wei jiaren* 'for family members' or *wei shengzhi* 'for promotion' is a sentential adjunct when it appears in the initial position of the sentence.

(27) [TP 為家人 / 為升職 [TP 張三 [AspP 努力 [v*P 工作]]]]。

　　[TP *Wei jiaren/wei shengzhi*　　　　[TP *Zhangsan* [AspP *nuli* [v*P *gongzuo*]]]].

　　　for family members/for promotion　Zhangsan　　　hard　　work

　　'Zhangsan works hard for family members/for his promotion.'

Tsai (1994) further noticed that *weishenme* in Chinese is interpreted ambiguously either as 'why' or as 'for-what', and that the sentential adjunction can be tested by answering the question of how *weishenme* is answered, as in (28). Pan (2011) pointed out that the purpose reading of *weishenme* in (28c) suggests that in this case *weishenme* 'for-what' is generated in the sentential position instead of the left periphery.[6] Following Sybesma's proposal that

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6　The overt syntactic structures of (28a) with respect to the two different answers are shown below, in the case of answering for reason *weishenme* 'why' is moved to Spec,TopP, while in the case of answering for purpose *wei-shenme* 'for what' is generated in the original subject adjunct position.

(i)　a. [CP C [TopP 為什麼 [TP 張三去法國]]]?　　　　　　　　Question on reason
　　　　[CP C [TopP *Weishenme* [TP *Zhangsan qu faguo*]]]?
　　　　　　　why　　　　　Zhangsan go France
　　　'Why Zhangsan goes to France?'
　　b. [CP C [TP 為什麼 [TP 張三去法國]]]?　　　　　　　　　Question on purpose
　　　　[CP C [TP *Wei-shenme* [TP *Zhangsan qu faguo*]]]?
　　　　　　　for-what　　　Zhangsan go France
　　　'For what (purpose) does Zhangsan go to France?'

sentences in Chinese contain the TP projection, we assume that *wei jiaren* 'for (his) family'/ *wei shengzhi* 'for promotion' in (27a) is adjoined to TP.

(28) a. 為什麼張三去法國？
  Weishenme Zhangsan qu faguo?
  why   Zhangsan go France
  'Why Zhangsan goes to France?'
 b. 因為他想去讀書。   Answer for reason
  Yinwei ta   xiang qu du shu.
  because 3MSg want go read book
  'Because he wants to study there.'
 c. 張三為學法語（去法國）。   Answer for purpose
  Zhangsan wei xue fayu (qu faguo).
  Zhangsan for study French go France
  'Zhangsan (goes to France) for studying French.'

If the purpose or benefactive adjunct is legitimated in the initial position of the complement of a pivotal construction, then the pivotal construction is bi-clausal. For example, the constructions formed by verbs like *gaosu* 'inform', *shuo* 'say', *quan* 'persuade' or *zhunbei* 'prepare' are bi-clausal, which allow the occurrence of the benefactive adjunct in the initial position of their complement. On the contrary, the constructions formed by causative verbs like *shi* 'make', *rang* 'let' or *jiao* 'let' are mono-clausal, because the benefactive adjunct cannot occur in the initial position of the complement. The causative construction in (29e) can be treated as an instance of the ECM construction, as argued by Yang (2003, 2004). The difference between the causative construction in Chinese and the typical ECM construction in English/French is that the former is mono-clausal whereas the latter is bi-clausal.

(29) a. 張三說 [$_{TP}$ 為家人 [$_{TP}$ 他會努力工作]]。
  Zhangsan shuo [$_{TP}$ *wei jiaren* [$_{TP}$ *ta hui nuli gongzuo*]].
  Zhangsan say for family 3MSg will hard work
  'Zhangsan says that he will work hard for his family.'
 b. 張三告訴李四 [$_{TP}$ 為家人 [$_{TP}$ 他會努力工作]]。
  Zhangsan gaosu Lisi [$_{TP}$ *wei jiaren* [$_{TP}$ *ta hui nuli gongzuo*]].
  Zhangsan inform Lisi for family 3MSg will hard work
  'Zhangsan informs Lisi that he will work hard for his family.'
 c. 張三 $_i$ 準備 [$_{TP}$ 為家人 [$_{TP}$ PRO$_i$ 努力工作]]。
  Zhangsan$_i$ zhunbei [$_{TP}$ *wei jiaren* [$_{TP}$ *PRO$_i$ nuli gongzuo*]].
  Zhangsan prepare for family   hard work
  'Zhangsan prepares to work hard for his family.'

d. 張三勸李四 ᵢ[_TP 為家人 [_TP PROᵢ 努力工作]]。
*Zhangsan quan　　　Lisi*ᵢ [_TP *wei jiaren* [_TP *PRO*ᵢ *nuli　gongzuo*]].
Zhangsan persuade Lisi　　for family　　　　hard　work
'Zhangsan persuades Lisi to work hard for his family.'

e. * 張三讓 / 叫 [ᵥ*P 為家人 [ᵥ*P 李四努力工作]]。
Zhangsan　rang/jiao [ᵥ*P *wei jiaren* [ᵥ*P *Lisi nuli　gongzuo*]].
　Zhangsan let　　　　　　for family　　Lisi　hard　work
('Zhangsan let Lisi work hard for his family.')

Meanwhile, the bi-clausal status of some pivotal constructions doesn't suggest that they share the same internal structure. As shown in (30), the verbs like *zhidao* 'know' and *gaosu* 'inform, tell' select an embedded clause allowing Object Shift, hence their embedded clause should be finite. However, the verbs like *zhunbei* 'prepare' and *jianyi* 'propose' select an embedded clause which prevents the object from shifting, confirming that the embedded clause is non-finite. The examples in (30a, b) are completive constructions, in which the embedded subject can be lexicalized. Examples in (30c, d), however, are control constructions where the embedded subject is a controlled PRO since it must be null and co-referenced with the matrix subject.

(30) a. 張三知道 [他 / 李四　晚飯吃了]。
　　　　Zhangsan zhidao [*ta*/*Lisi*　　*wanfan chi-le*].
　　　　Zhangsan know　　3MSg/Lisi dinner　eat-Perf
　　　　'Zhangsan says that he/Lisi has had the dinner.'

b. 張三告訴李四 [他 / 王五　晚飯吃了]。
　　Zhangsan gaosu　Lisi [*ta*/*Wangwu*　　　*wanfan chi-le*].
　　Zhangsan　inform　Lisi　3MSg/Wangwu dinner　eat-Perf
　　'Zhangsan informs Lisi that he/Wangwu has had the dinner.'

c. 張三 ᵢ 準備 [* 他 /* 李四 /PROᵢ * 晚飯吃 / 吃完飯]。
　　*Zhangsan*ᵢ *zhunbei* [*ta*/*Lisi*/*PRO*ᵢ **wanfan　chi*/*chi wanfan*].
　　Zhangsan prepare　　3MSg/Lisi　　　dinner eat/eat dinner
　　'Zhangsan prepares to have dinner.'

d. 張三建議李四 ᵢ[* 他 /* 王五 /PROᵢ * 晚飯吃 / 吃晚飯]。
　　*Zhangsan jianyi　Lisi*ᵢ [*ta*/*Wangwu*/*PRO*ᵢ **wanfan　chi*/*chi　wanfan*].
　　Zhangsan suggest Lisi　3MSg/Wangwu　　dinner　eat/eat dinner
　　'Zhangsan suggests Lisi to have dinner.'

The identification of finite and non-finite clauses is not enough to determine the internal structure of different types of pivotal constructions. The task remains to determine the

categorical status (whether it is a CP, or a TP) of the embedded clauses in the pivotal constructions. According to Chomsky (2001), the TP with a complete set of features is selected by the phase head C. Since the TPs of the embedded finite clauses in (30a, b) carry a complete set of features, there should exist a CP projection between the matrix verb and the embedded TP. As for (30c, d), whether the embedded non-finite clause is a TP or a CP remains as a question. Following Rouveret's (2012) proposal that ellipsis is a PF-deletion and that the elided category is the Spelled-out domain of a phase head, the categorical status of the non-finite clauses in the control constructions can be tested in terms of ellipsis. The object control construction in (31b) shows that the matrix object is excluded from the elided domain. If the embedded clause is only a TP that doesn't determine a phase, then the elided category should be the complement of the matrix v^*, which means that the matrix object should be contained in the elided domain as well. The ellipsis test suggests that the control verbs directly subcategorize a phasal category, which is a non-finite CP.

(31) a. 張三 $_i$[$_{v^*P}$ 準備 [PRO$_i$ 去學校]]，李四也 [$_{v^*P}$ 準備 [這樣]]。
    Zhangsan$_i$ [$_{v^*P}$ zhunbei [qu xuexiao]], Lisi ye [$_{v^*P}$ zhunbei [zheyang]].
    Zhangsan   prepare go school   Lisi too   prepare   like this
    'Zhangsan prepares to go to school, Lisi prepares it too.'

   b. 張三 [$_{v^*P}$ 建議 [$_{VP}$ Ɐ 李四 $_i$[PRO$_i$ 去學校]]]，王五也 [$_{v^*P}$ 建議 [$_{VP}$ Ɐ 李四 $_i$[$_{CP}$ C [$_{TP}$ 這樣]]]] / *[$_{v^*P}$ 建議 [$_{VP}$ 這樣]]。
    Zhangsan [$_{v^*P}$ jianyi [$_{VP}$ Ɐ Lisi$_i$ [PRO$_i$ qu xuexiao]]],
    Zhangsan   propose   Lisi   go school
    *Wangwu   ye [$_{v^*P}$ jianyi [$_{VP}$ Ɐ Lisi$_i$ [$_{CP}$ C [$_{TP}$ zheyang]]]] / *[$_{v^*P}$ jianyi [$_{VP}$ zheyang]].*
    Wangwu too   propose   Lisi   like this   propose like this
    'Zhangsan proposes to Lisi to go to school, Wangwu proposes to Lisi for it too.'

As a result, the internal structures of the different pivotal constructions are shown below. The completive and the control constructions all involve an embedded CP, whereas the ECM-like causative constructions in Chinese are mono-clausal, which involve a v^*P as the complement of the matrix verb. The embedded clauses in the completive constructions are finite, and those in the control constructions are non-finite. The relevant internal structures of different pivotal constructions are shown below:

(32) a. Completive construction: … [$_{v^*P}$ Subj$_{matrix}$ v^* [$_{VP}$ Ɐ (Obj$_i$) [$_{CP}$ C [$_{TP}$ … Subj$_{embedded}$ v^*-T$_{finite}$ …

   b. Causative construction: … [$_{v^*P}$ Subj$_{matrix}$ v^* [$_{VP}$ Ɐ [$_{v^*P}$ Subj$_{embedded}$ v^* …

   c. Subject control construction: … [$_{v^*P}$ Subj$_{matrix-i}$ v^* [$_{VP}$ Ɐ [$_{CP}$ C [$_{TP}$ … PRO$_i$ v^*-T$_{Inf}$ …

   d. Object control construction: … [$_{v^*P}$ Subj$_{matrix}$ v^* [$_{VP}$ Ɐ Obj$_i$ [$_{CP}$ C [$_{TP}$ … PRO$_i$ v^*-T$_{Inf}$ …

5. The *respectively*-interpretation and the two concepts of locality

This section concentrates on the interaction between the R-I of *fenbie* and the two locality conditions.

5.1. The *respectively*-interpretation in bi-clausal constructions in French

Most of the previous studies have treated the R-I as a construal process, sensitive to interpretive properties. However, Rouveret (2016b) noticed that the establishment of the R-I also respects some syntactic conditions. Taking French for example, when the R-I is established across a clausal boundary, the subject of the embedded clause may function as an intervenor to block the R-I, as shown below.

(33) a. Dative construction

Pierre et Paul   ont   envoyé respectivement un livre et un magazine à Julie et à Lucie.
Pierre and Paul Aux$_{3PlPres}$ given   respectively   a book and a magazine to Julie and to Lucy
'Pierre has given a book to Julie and Paul has given a magazine to Lucy.'
(Rouveret 2016b: 282)

b. Completive construction

Pierre et Paul   disent [$_{CP}$ *que* [$_{TP}$ **Lisa** *a*   *rencontré respectivement*
Pierre and Paul say$_{3PlPres}$ that   Lisa Aux$_{3SgPres}$ met   respectively
Roman et Noam]].
Roman and Noam
('Pierre says that Lisa has met Roman and Paul says that Lisa has met Noam.')
(Rouveret 2016b: 283)

c. Subject control construction

Pierre et Jean$_i$ *détestent* [$_{CP}$ C [$_{TP}$ *PRO*$_i$ *parler respectivement de littérature et de cinéma*]].
Pierre and John hate$_{3PlPres}$ talk$_{Inf}$ respectively   of literature and of cinema
'Pierre hates to talk about literature and John hates to talk about cinema.'
(Rouveret 2016b: 283)

d. Object control construction

Pierre et Jean   ont   persuadé Julie$_i$ [$_{CP}$ *de* [$_{TP}$ **PRO**$_i$ *lire   respectivement*
Pierre and John Aux$_{3PlPres}$ persuaded Julie   to   read$_{Inf}$ respectively
Montaigne et Pascal]].
Montaigne and Pascal
('Pierre has persuaded Julie to read Montaigne and John has persuaded Julie to read Pascal.')
(Rouveret 2016b: 283)

e. ECM construction

*Pierre et Paul ont   écouté respectivement [$_{TP}$ ***Julie*** *réciter une ode*

 Pierre and Paul Aux$_{3PlPres}$ listen   respectively   Julie recite$_{Inf}$ an ode

 de Hugo et un sonnet de Malherbe].

 of Hugo and a sonnet of Malherbe

('Pierre has listened Julie reciting an ode of Hugo and Paul has listened Julie

reciting a sonnet of Malherbe.')

(Rouveret 2016b: 283)

In (33a), when the R-I is established in a mono-clausal construction, no intervention effect is observed. However, the examples in (33b, d, e) are ungrammatical. Rouveret (2016b) argued that when the R-I is established between the matrix subject and the embedded object crossing the clausal boundary, the embedded subject functions as an intervenor for being a potential closer antecedent than the matrix subject. The subject control construction (33c) seems to be a counterexample. However, considering that the PRO bears the same reference of the matrix subject (the controller), the absence of the intervention effect can be well explained away: since the PRO in (33c) is controlled by the matrix subject, it is possible to assume that the R-I is actually established between the PRO and the embedded object.

In summary, the R-I in French is restricted by RM. On the one hand, taking a subject antecedent of the R-I as the probe, no potential closer subject should intervene between the probe and the connected element. In other words, to avoid the intervention effect in the R-I in bi-clausal constructions, there should be no intervening subject, which occurs in the same type of position and bears the same reference of the antecedent. On the other hand, the absence of intervention effects in the R-I in subject control constructions shows that PIC doesn't apply to the R-I. The R-I can still be legitimated even though more than one phase boundary, namely the embedded v*P and the embedded CP, are crossed.

5.2. The *respectively*-interpretation in pivotal constructions in Chinese

Now let's examine the R-I in the pivotal constructions in Chinese. The examples in (34) illustrate the R-I in the double object constructions, the completive constructions, the subject control constructions, the object control constructions and the ECM constructions in Chinese.

(34) a. Double object construction

張三和李四分別給了王五一本書和一幅畫。

Zhangsan he Lisi *fenbie   gei-le   Wangwu yi-ben shu he yi-fu   hua*]]]].

Zhangsan and Lisi respectively give-Perf Wangwu one-CL book and one-CL picture

'Zhangsan gives Wangwu a book and Lisi gives Wangwu a picture.

b. Completive construction

　*張三和李四 [ᵥ*ₚ 分別 [v*P 說 [cₚ C [ₜₚ 劉老師去了日本和法國]]]]。

　*<u>*Zhangsan he Lisi*</u> [ᵥ*ₚ *fenbie*　　[ᵥ*ₚ *shuo* [cₚ C [ₜₚ ***Liu-laoshi***　　*qu-le*　　<u>*Riben he Faguo*</u>]]]].

　 Zhangsan and Lisi　respectively say　　　　Professor-Liu go-Perf Japan and France

('Zhangsan says that Professor Liu went to Japan and Lisi says that Professor

Liu went to France.')

c. Completive construction

　*張三和李四 [ᵥ*ₚ 分別 [ᵥ*ₚ 告訴王五 [cₚ C [ₜₚ 劉老師去了日本和法國]]]]。

　*<u>*Zhangsan he Lisi*</u> [ᵥ*ₚ *fenbie*　　[ᵥ*ₚ *gaosu Wangwu* [cₚ C [ₜₚ ***Liu-laoshi***　　*qu-le*

　 Zhangsan and Lisi　respectively tell　　Wangwu　　　　Professor-Liu go-Perf

　 <u>*Riben he Faguo*</u>]]]].

　 Japan and France

('Zhangsan tells Wangwu that Professor Liu went to Japan and Lisi tells Wangwu

that Professor Liu went to France.')

d. Subject control construction

　<u>張三和李四</u> ᵢ[ᵥ*ₚ 分別 [ᵥ*ₚ 準備 [cₚ C [ₜₚ … PROᵢ 去學校和醫院]]]]。

　<u>*Zhangsan he Lisi*</u>ᵢ [ᵥ*ₚ *fenbie*　　[ᵥ*ₚ *zhunbei* [cₚ C [ₜₚ *PROᵢ qu xuexiao he yiyuan*]]]].

　Zhangsan and Lisi　　respectively prepare　　　　　go　school and hospital

　'Zhangsan prepared to go to the school and Lisi prepared to go to the hospital.'

e. Object control construction

　<u>張三和李四</u>分別 [ᵥ*ₚ 勸 [ᵥₚ 王五 ᵢ[cₚ C [ₜₚ … PROᵢ 去學校和醫院]]]]。

　<u>*Zhangsan he Lisi*</u>　*fenbie*　　[ᵥ*ₚ *quan* [ᵥₚ *Wangwu*ᵢ [cₚ C [ₜₚ *PROᵢ qu xuexiao he yiyuan*]]]].

　Zhangsan and Lisi respectively persuade Wangwu　　　　　　go school and hospital

　'Zhangsan persuades Wangwu to go to the school and Lisi persuades Wangwu to

　go to the hospital.'

f. ECM construction

　<u>張三和李四</u> [ᵥ*ₚ 分別 [ᵥ*ₚ 讓 / 叫 [ᵥ*ₚ 王五去學校和醫院]]]。

　<u>*Zhangsan he Lisi*</u> [ᵥ*ₚ *fenbie*　　[ᵥ*ₚ *rang/jiao* [ᵥ*ₚ *Wangwu qu xuexiao he yiyuan*]]].

　Zhangsan and Lisi　　respectively make/let　　Wangwu go school and hospital

　'Zhangsan let Wangwu go to the school and Lisi let Wangwu go to the hospital.'

Clearly, the intervention effect is only observed in completive constructions, as in (34b, c). In this case, *fenbie* targets on the matrix verbs *shuo* 'say' and *gaosu* 'tell', and the embedded verbs fall in the scope of *fenbie* as well. However, the grammatical counterpart in (34d, e) shows that the ungrammaticality in (34b, c) is not caused by clausal or phasal boundaries. As shown in (34d, e, f), the object of the embedded clause is located in the domain of the embedded v*P, but the R-I is still established even across more than one phase boundary. As such, PIC doesn't constrain the R-I of *fenbie* in Chinese either. On the contrary, the contrast

in (34) suggests that the R-I in Chinese should also respect RM, in which only the lexical subject of the embedded finite clause functions as an intervenor. In all the bijective relations established in the bi-clausal constructions between the matrix subject (i.e. *Zhangsan⊕Lisi* in 34b) and the embedded object (i.e. *Riben he Faguo* 'Japan⊕France' in 34b), only those with an explicit intervening subject (i.e. *Liu-Laoshi* 'Professor Liu' in 34b) are blocked. Unlike French, the R-I in the object control construction in Chinese does not exhibit the intervention effect, even though the object control construction is bi-clausal in Chinese and the PRO (i.e. the embedded subject) doesn't bear the same reference of the matrix subject. The R-I in the causative constructions in Chinese has no intervention effect neither since these constructions are mono-clausal.

5.3. The *respectively*-interpretation and the two concepts of locality

One may ask why intervention effects are observed in the R-I in object control and ECM constructions in French while absent in those constructions in Chinese. According to Lin (2011), there is neither Case feature nor φ-features in Chinese. Actually, the categorical status of the embedded clauses in pivotal constructions in Chinese is deduced by ellipsis (see section 4.3.), rather than by the Case assignment and the φ-feature checking (see section 4.1.).

According to Chomsky (2000, 2001, 2008), CP determines a phase. Considering that phase heads bear an EPP feature (Chomsky 2001) and T inherits features from C (Chomsky 2008), any TP selected by C should carry an EPP feature inherited from C. Since PRO is assumed to have a null Case (Chomsky & Lasnik 1993), the non-finite T in control constructions in English and French should carry an EPP feature which attracts the embedded subject to the position of Spec,TP_{inf}. Considering English and French, Chomsky (2000), Atkinson (2001, 2007) and Rouveret (2016a) showed that even a defective non-finite T carries an EPP feature as well. A relevant example is the long-distance agreement found in the *there*-construction, as shown in (35). As a result, the embedded non-finite TP in the ECM construction also carries an EPP feature, attracting the embedded subject to the position of Spec,TP_{Inf}.

(35) *There*$_{[u-\varphi]}$ *seem*$_{[EPP]}$ [$_{TP}$ ~~*there*~~ *to*$_{[EPP]}$ *be likely* [$_{TP}$ ~~*there*~~ *to*$_{[EPP]}$ *have arrived three generals*$_{[i-\varphi]}$]].

Given that Chinese has no Case, it is possible to assume that the non-finite TP in Chinese doesn't need the EPP feature to attract the subject and hence the subject doesn't move in non-finite clauses in Chinese. As a result, the controlled PRO in French and in English moves to the embedded Spec,TP position as in (36a); whereas it remains in the embedded Spec,v*P position in Chinese, as in (36b).

(36) a. Subject control construction in English/French:

$[_{TP}$ **Subj**$_i$ T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ ~~V~~ $[_{CP}$ C $[_{TP}$ **PRO**$_i$ $[_{v*P}$ ~~PRO~~ v* …

b. Object control construction in English/French:

$[_{TP}$ **Subj** T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ ~~V~~ Obj$_i$ $[_{CP}$ C $[_{TP}$ **PRO**$_i$ $[_{v*P}$ ~~PRO~~ v* …

c. Subject control construction in Chinese:

$[_{TP}$ **Subj**$_i$ T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ ~~V~~ $[_{CP}$ C $[_{TP}$ T $[_{v*P}$ **PRO**i …

d. Object control construction in Chinese:

$[_{TP}$ **Subj** T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ ~~V~~ Obj$_i$ $[_{CP}$ C $[_{TP}$ T $[_{v*P}$ **PRO**$_i$ …

Since the embedded subject and matrix subject occur in the same type of positions in English and in French (i.e. Spec,TP), the R-I in bi-clausal constructions will be blocked by the embedded subject due to the violation of RM. However, since the embedded subject and the matrix subject are located in the specifiers of two different types of projections in Chinese (i.e. Spec,TP and Spec,v*P), the embedded subject doesn't count as an intervenor and RM is not violated.[7]

(37) a. R-I in the object control construction in English and French:

$[_{TP}$ **Subj**$_i$ T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ V (Obj$_j$) $[_{CP}$ C $[_{TP}$ **PRO**$_{i/j}$ T $[_{v*P}$ ~~PRO~~ v* **Obj**]]]]]]
(PRO functions as an intervenor and RM is violated)

b. R-I in the object control construction in Chinese:

$[_{TP}$ **Subj**$_i$ T $[_{v*P}$ ~~Subj~~ v* $[_{VP}$ V (Obj$_j$) $[_{CP}$ C $[_{TP}$ T $[_{v*P}$ **PRO**$_{i/j}$ v* **Obj**]]]]]]
(PRO remains in Spec,v*P and doesn't count as intervenor, the violation of RM is avoided)

6. Conclusion

In this paper, we have examined two concepts of locality by analyzing the *respectively*-interpretation of *fenbie* in Chinese, in comparison with *respectively* in English and *respectivement* in French. Conclusions are drawn as follows:

First, the *respectively*-interpretation in all three languages is realized in covert syntax after Transfer.

Second, *fenbie* in Chinese differs from *respectively* in English and *respectivement* in French in that it has a default meaning of 'separately'. Besides, the syntactic distribution of *fenbie* is more restricted than *respectively* in English and *respectivement* in French.

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[7]　It should be pointed out that since R-I is not subject to feature valuation, feature intervention is not involved in the R-I. As a result, the minimality effect in the R-I is relativized to positions.

Third, the intervention effect is observable in the R-I in English, French as well as in Chinese. When the R-I is established in bi-clausal constructions, an embedded subject can function as an intervenor and block the R-I, if it occurs in the same type of position as the antecedent and bears a different reference.

Finally, it has been shown that the R-I is constrained by the Relativized Minimality, while the Phase Impenetrability Condition doesn't concern such an operation. The establishment of the R-I is only adequate at LF and is restricted by RM, whereas PIC doesn't constrain the R-I. This suggests that the two types of locality conditions, namely RM and PIC, cannot be subsumed one under the other, since they operate at different syntactic levels. While RM is at least pertinent in covert syntax; PIC only operates in overt syntax but not in covert syntax.

Acknowledgements

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副詞"分別"的分佈解讀與兩類局部性條件

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提要

本文主要討論漢語中副詞"分別"的分佈性解讀及英語及法語中的對應形式。本文注意到，當此分佈性解讀建立於雙句結構中時，內嵌句主語可充當介入成分，并使得相關句子產生阻隔效應。與此相反，句子或語段邊界不會阻隔分佈性解讀。因此，本文通過分析語言事實，表明已有理論框架下的兩類局部性條件（即語段不可滲透條件和相對最簡條件）不可合二為一，兩者作用層面不同：前者不約束語義層面的計算，而後者約束顯性句法和語義的操作。

關鍵詞

局部性條件，分佈性解讀，分別，語段，最簡條件