

Suo Relative Clauses in Mandarin Chinese^{*}

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This paper aims to look into *suo* relative clauses (RCs) in Mandarin Chinese under a combined framework of the Complementation Structure revived by Kayne (1994), the LINKER analysis by Den Dikken & Singhapreecha (2004), and the derivational approach to the PRONOUN by Zwart (2002). I argue that *suo* is a relative pronoun for objects. The obligatory disjointness of *suo* from subjects implies an A-bar binding dependency between a PRONOUN and its antecedent, which is different from the A-binding dependency in Zwart (2002) that a PRONOUN always refers to a subject. Both of the two dependencies are sensitive to subjecthood. This paper also shows that Chinese headless RCs and Chinese headless *suo* RCs are FRs. As for the category of RCs and the head nominals, the paper argues that the projection is a DP rather than an NP in terms of the facts that it is grammatical for the projection to occupy a topic position where indefinite nominal phrases are prohibited, and it is also grammatical for the projection to occur in the existential construction.

Key words: *suo*, relative clauses, A-bar binding dependency, A-binding dependency

1. Introduction

The focus of the paper is the particle *suo* in relatives in Mandarin Chinese as in (1)-(2).

- (1) Lisi suo xuan de yangzhuang hen piaoliang¹
 Lisi SUO choose LIN dress very beautiful
 ‘The dress(es) that Lisi chose is/are beautiful.’

^{*} I would like to thank my advisor, Niina Zhang, my thesis committee, Lin Huei-Ling and Paul Law, the anonymous reviewers, my classmates in Chung Cheng University, and the following professors for the helpful comments: Ren Ting, Chen-Sheng Liu, Karin Pittner, and Mary Dalrymple. Special thanks to Dah-an Ho for giving me the invaluable chance to publish my research in the journal. All remaining errors are mine.

¹ The abbreviations used in the examples in the paper are as follows. CL=classifier, F.M.=focus marker, PER=perfect aspect, ASP=aspect marker, LIN=linker (following Den Dikken & Singhapreecha (2004), which is discussed in a later section).

- (2) wo xiangyao Zhangsan suo mai de na-ben shu
 I want Zhangsan SUO buy LIN that-CL book
 ‘I want the book that Zhangsan bought.’

Suo in relatives in Mandarin Chinese has been viewed in the literature as a head of a functional projection, *SuoP* (Chiu 1995), a relative pronoun (Zhang 2001, 2002), and a pronominal clitic (Ting 2003, Ou 2004). However, there are interesting binding phenomena of *suo* and the Head nominal that have not been under any discussion.

Following Zwart (2002), I adopt the generic term PRONOUN for any free/bound pronoun/anaphor, such as *him*, and *ourselves* in English to refer to *suo* in relatives. In Zwart (2002), only the A-binding dependency between antecedents and PRONOUNS is discussed; however, there is also an A-bar binding dependency between the two. The unveiling of the binding phenomena of *suo* and the Head nominal in the paper can serve as evidence to support the possibility of such an A-bar binding relation. Another piece of evidence is from Hindi pronoun *uskaa*.

The paper thus argues that *suo* is a bound pronoun. It surfaces inside the containing relative clause, and its antecedent is the Head nominal within the same clause. Besides, the dependency between the antecedent and the PRONOUN can be either A-binding or A-bar binding, both of which are sensitive to subjecthood.

In addition, while the previous studies on *suo* in relatives assume that the optionality of *suo* in relatives makes no semantic contribution to the sentence containing it, I argue that *suo* is an intensifier/emphatic pronoun modifying non-subjects only.

The paper is organized as follows. After reviewing the previous works done on *suo* in relatives in §2 (Chiu 1995, Zhang 2001, 2002, Ting 2003, Ou 2004), I extend the discussion to the binding phenomena of *suo* and the Head nominal in relatives in the following sections. In §3, I introduce the frameworks that I adopt and combine in the paper: the Complementation approach for relative clauses (Kayne 1994), and the LINKER analysis for *de* (Den Dikken & Singhapreecha 2004), which is an obligatory element in Mandarin Chinese relatives. In addition, Zwart’s (2002) merger for coreference/reference of antecedents and pronouns is also introduced in the same section. In §4, I start to analyze *suo* in relatives under the combined framework. In this section, the parallelism between the proposed derivations for *suo* relatives in Mandarin Chinese and those for Hindi relatives is shown. I discuss the semantic role played by *suo* in relatives in §5. Section 6 concludes the paper.

2. Previous studies

In the analyses of *suo* in relatives in Mandarin Chinese, three major categories

have been proposed for it: functional head (SuoP) (Chiu 1995), relative pronoun (Zhang 2001, 2002), and pronominal clitic (Ting 2003, Ou 2004).

Chiu (1995) proposes the accusative Case projection analysis claiming that *suo* is the head of a functional clitic projection, SuoP, in Mandarin. SuoP is positioned between NomP and TP, and only the movement of an element that bears [acc] case to its Spec will motivate the realization of SuoP. The first of her argument is that *suo* relates only with the direct object in the relative, not with the subject or with the adjunct. Her second argument is that *suo* has a fixed position in relative. This restricted position of *suo* in relative is shown in (3) (Chiu 1995:84). Examples from Chiu are summarized by Ting (2003:123) in (4).

- (3) NP-subject S-level-adv *SUO* Neg manner-adv Verb NP-object
 (4) [Lisi (*suo) dagai suo meiyou (*suo) henhende (*suo) piping
 Lisi SUO probably SUO not-have SUO severely SUO criticize
 [e]] de naxie ren
 DE those person
 ‘the people that Lisi probably didn’t severely criticize’

However, as Ting (2003:125) points out, the first of Chiu’s argument that *suo* relates only with the direct object in relative rather than with the adjunct is not true. There are cases when the verbs in relatives are not accusative verbs, and it is impossible for *suo* to relate with a direct object. In (5), which are locative relative clauses, the verbs are not accusative verbs and do not assign accusative case; the Head nominals are definitely not direct objects. Chiu (1995) fails to predict the grammaticality of the examples in (5).²

- (5) a. Lisi suo fuwu/gongzuo de jigou/difang³
 Lisi SUO serve/work LIN organization/place
 ‘the organization/place that Lisi serves/works in’
 b. women suo shengcun de shehui
 we SUO live LIN society
 ‘the society where we live’

² One of the reviewers expects more examples from Chiu to prove that her claim is able to derive the grammatical sentences such as (5). I shall leave it for further research.

³ One of the reviewers observes that (5a) & (5b) are not as grammatically acceptable as (1)-(2), and the observation might suggest the antisymmetry between the complements and the adjuncts in *suo* relative clauses in Mandarin Chinese. I shall leave the issue for further research.

As a relative pronoun (Zhang 2001), *suo* undergoes A-bar movement, as relative pronouns in English do, but its landing site is lower. This can be seen in (6), where the relative pronouns *suo* moves from the position after the embedded verb to the position between the subject and the verb in relative, rather than to the Spec of the CP.

- (6) wo xiangyao [[_{CP} Zhangsan *suo*_i mai t_i de] [na-ben shu]_i
 I want Zhangsan SUO buy LIN that-CL book
 ‘I want the book that Zhangsan bought.’

Zhang (2002) further proposes that *suo* and the Head nominal move together as a cluster to the position between the subject and the verb in the relative. In this position, *suo* remains, and the Head nominal splits out to the matrix clause. The first movement of both *suo* and the Head nominal is an A-bar movement, and the second of the Head nominal alone is antecedent raising.

However, Ting (2003) and Ou (2004) argue that *suo* in relatives is a pronominal clitic rather than a relative pronoun. Ting (2003) claims that if *suo* is treated as a relative pronoun, it will be difficult to account for the unavailability of *suo* to relate with the subject in relatives.⁴ Kayne (1983) notices the phenomenon of clitics not relating with a subject, and proposes that there is a subject/object asymmetry in syntactic cliticization. Ou (2004) argues *suo* to be a clitic by running *suo* in relatives through many criteria given by Zwicky (1985), and Zwicky & Pullum (1983).

Since relative pronouns (Zhang 2001, 2002) of restrictive relatives are bound pronouns, and pronominal elements (Ting 2003, Ou 2004) are pronouns, in this paper I use a generic term PRONOUN (Zwart 2002) to cover them, and start to analyze *suo* as a PRONOUN.

3. Theoretical background

In this section, three theories adopted in the paper are introduced: the Completion structure (Schachter 1973, Kayne 1994, Bianchi 1999, 2000), the proposal of LINKER for *de* in Mandarin Chinese (Den Dikken & Singhapreecha 2004), and the binding analysis under a derivational approach (Zwart 2002).

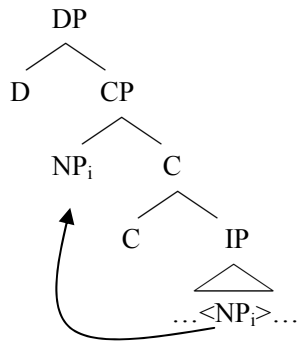
⁴ The disjointness of *suo* from subjects is discussed in §4.4.

3.1 Theories for relatives

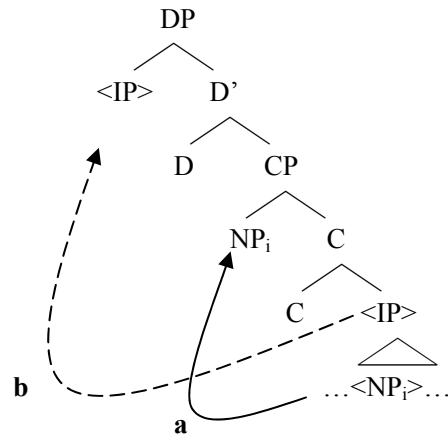
There are two main approaches to relatives in the literature: the Complementisation structure (Schachter 1973, Kayne 1994, Bianchi 1999, 2000, to name a few), and the Adjunction structure (Chomsky 1977, Safir 1986, Aoun & Li 2003, to name a few).

The Complementisation structure, also called the promotion/raising analysis, is proposed by Schachter (1973), and revived by Kayne (1994). The derivation Kayne (1994) proposes for head-initial relatives such as those in English is represented in (7). For head-final relatives such as those in Mandarin Chinese, he has the derivations in (8), involving an extra remnant IP movement (the b-movement in (8)).

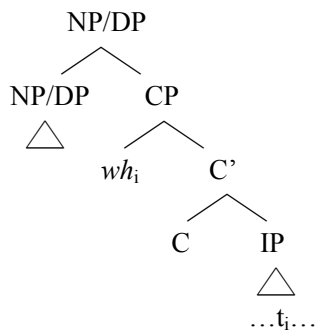
(7) head-initial relatives



(8) head-final RCs



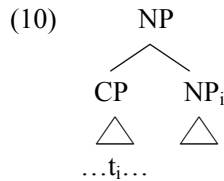
(9)



The other main framework for relatives is the Adjunction structure (Chomsky 1977, Safir 1986), previously called the *wh*-movement analysis, and later called matching analysis. In the Adjunction structure, the relatives are adjuncts (CP). The Head nominal

is base-generated, and the predication/agreement relation between the operator and the Head nominal motivates the movement of the operator. The derivation is given in (9).

Aoun & Li (2003) has argued for the Adjunction structure for relatives in Mandarin Chinese, and against what Kayne (1994) provides for the structure of head-final relatives in languages such as Mandarin Chinese. The structure they provide for relatives in Mandarin Chinese is given below.



Instead of being base-generated in the surface position, the Head nominal is base-generated inside the relative clause (CP), which is an adjunct, and then moves out to the Head nominal position. However, since the CP in (10) is an adjunct, any movement out of it violates the adjunct-island constraint.

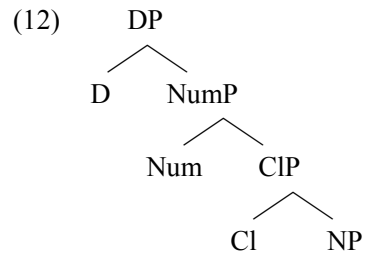
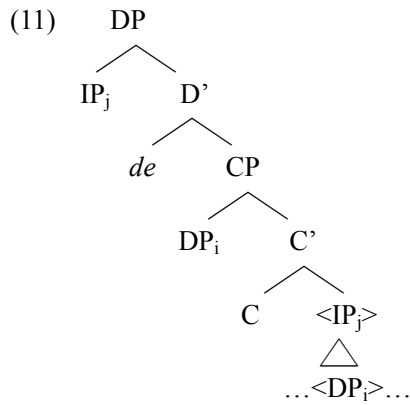
As the Adjunction Structure analysis violates the adjunct island constraint when deriving the Head nominal of relatives, the analysis presented in the paper is under the framework of Kayne's (1994) Complementation Structure.

3.2 Theories for Mandarin Chinese *de*

Two recent analyses of *de* in Mandarin Chinese are introduced in the subsection: a head of DP (Simpson 2002), and a head of FP, also called LINKER (Den Dikken & Singhapreecha 2004).

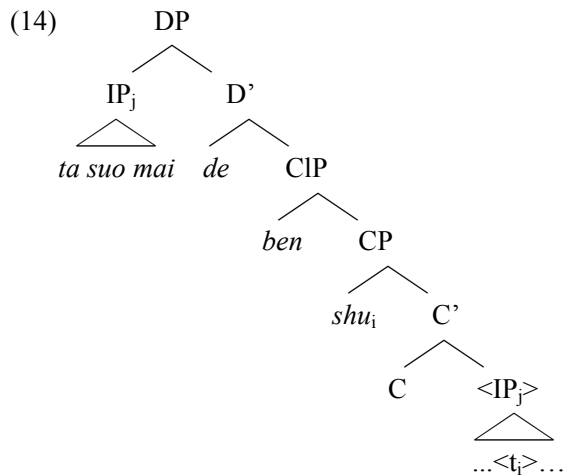
Simpson (2002:25) argues that *de* in relatives in Mandarin Chinese is 'a clitic-like determiner attracting some element to its Spec along with Kayne's theory of Relativization.' In (11), the linear order is acceptable without violating Kayne's (1994) theory of antisymmetry of syntax, which claims that rightward movement is not allowed.

However, the structure proposed by Simpson (2002) faces a problem when the structure of DP in Mandarin Chinese is concerned. The generally assumed structure of DP in Mandarin Chinese is given in (12).

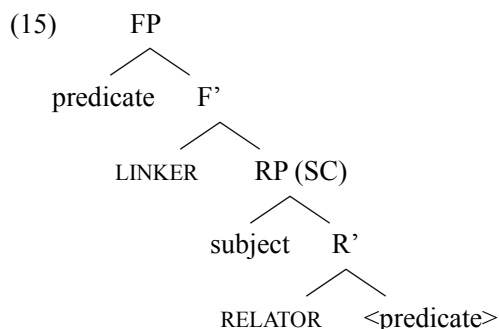


Under the framework by Simpson (2002), the grammatical example in (13) has the structure given in (14). As shown, the framework has derived a wrong linear order compared with that in (14). The classifier *ben* should be above the IP, following a demonstrative *na* heading a DP like (12) shows. It is not only that the linear word order is wrong, but also the demonstrative is missing in (14). Though a further projection of DP can solve the two problems, having extra positions for the demonstrative followed by the classifier, the possibility for a classifier below *de* in (14) still cannot be ruled out.

- (13) na ben Lisi suo xuan de shu
 that CL Lisi SUO choose LIN book
 ‘that book which Lisi chose’



Den Dikken & Singhapreecha (2004) have proposed a theory of RELATOR. A RELATOR links predicates to their subjects. With the presence of a LINKER, a predicate raises over its subject, a movement called by Den Dikken & Singhapreecha (2004) as Predicate Inversion. The structure is given in (15). The RelatorP (RP) in Den Dikken & Singhapreecha's theory has the same concept as Small Clause (SC) that they are subject-predicate constructions except that RP expresses tense while SC is tenseless, containing no finite verb, and is a projection of a functional head.



In a French example (16), the subject *type* 'guy' and the predicate *drôle* 'funny' are base-generated in the small clause (SC). With the occurrence of a LINKER, *de* (a different *de* from *de* in Mandarin Chinese), the predicate inverts to the left of its subject, landing at the Spec FP headed by *de*.

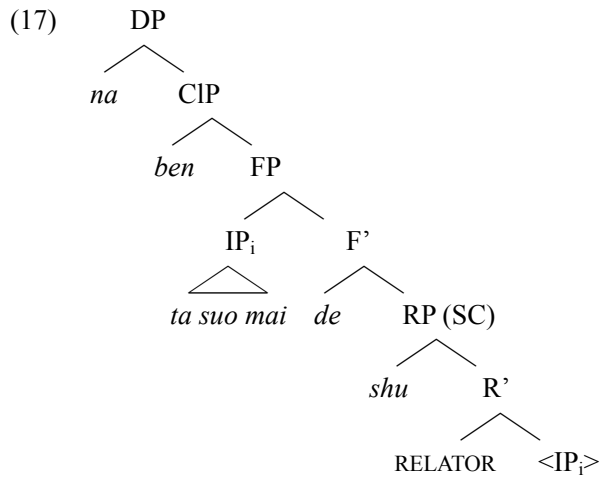
- (16) a. un drôle de type
 a funny LIN guy
 b. [_{DP} un [_{FP} drôle_i [de [_{SC} [type] [t_i]]]]]

(Den Dikken & Singhapreecha 2004:12)⁵

Den Dikken & Singhapreecha's (2004) structure derives correct word order when the DP structure in Mandarin Chinese (12) is considered.

⁵ Some modifications have been made in (16) to the original version in Den Dikken & Singhapreecha (2004:12), which is as (i).

- (i) a. un drôle de type
 a funny DE guy
 b. [_{DP} un [drôle_i [de [_{SC} [type] [t_i]]]]]

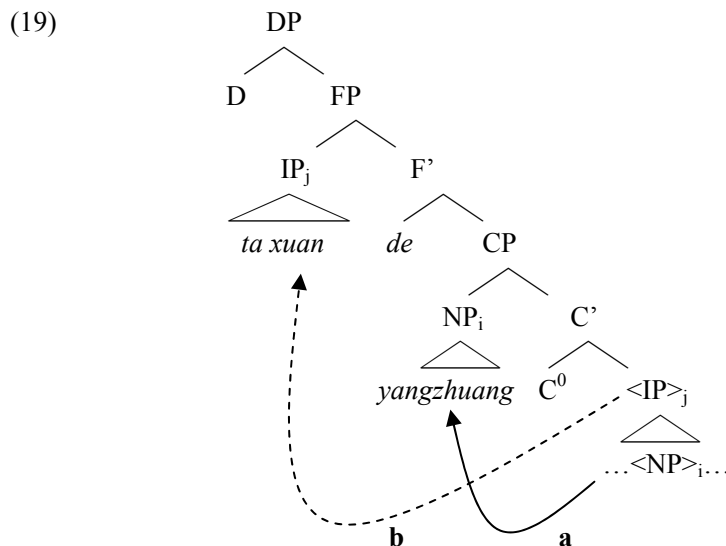


The subject *shu* and its predicate *ta suo mai* is connected by a RELATOR in SC. Motivated by a LINKER, the predicate inverses over the subject to the Spec FP. The derived structure corresponds to (13). Due to this advantage, I adopt Den Dikken & Singhapreecha's (2004) proposal of *de* in my paper.

Since in Kayne's (1994) Complementation structure for head-final relatives no element like *de* has been considered, in this paper I combine Kayne (1994) with Den Dikken & Singhapreecha (2004). The RP/SC in (17) is replaced by an embedded CP since a CP can represent a detailed inner structure such as NegP or any FP, and possible movements inside it. The remnant IP movement in Kayne's structure in (8) is parallel to Predicate Inversion in Den Dikken & Singhapreecha's in (17). A combined structure is given in (19) for a relative clause in Mandarin Chinese such as (18).⁶

- (18) wo xihuan [DP ta xuan de yangzhuang]
 I like she choose LIN dress
 'I like the dress(es) that she chooses.'

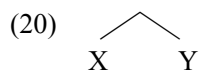
⁶ One of the reviewers suggests providing more argumentation to explain the similarities between French *de* and Mandarin *de*. I shall leave this to further research.



In (19), the Head nominal raises to the Spec CP (a-movement), and then the remnant IP moves to the Spec FP headed by the LINKER *de* (b-movement).

3.3 The binding and coreference under a derivational approach

Zwart (2002) proposes that for a pronominal element (Y) to co-refer with another element (X) they must merge together as the first step of derivation.



The term *coreference* used by Zwart (2002) includes the commonly assumed concepts for reference and for coreference. Generally, reference refers to the relationship between a (bound) variable and its antecedent, and coreference means that two NPs refer to the same entity. Examples are given below, respectively.

- (21) John likes himself. (reference)
 (22) John_i thinks that he_i is smart. (coreference)

In this paper, when I use the terms *reference* and *coreference*, I mean what I have explained above, rather than the vague use of Zwart (2002).

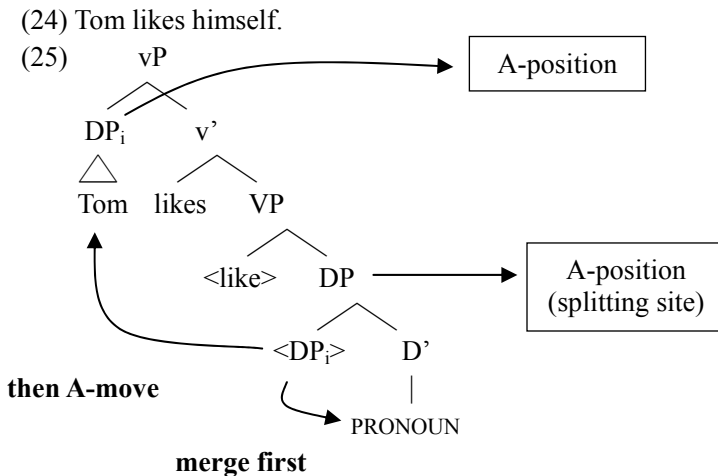
Zwart (2002) uses a more generic term PRONOUN to refer to any bound/free pronoun/anaphor, such as *him* or *ourselves* in English. His motivation comes from the

question “what makes an element an anaphor/pronoun/R-expression” (Zwart 2002:272) with respect to a reformulation of the binding theory as interpretive procedures (Chomsky & Lasnik 1995).

In addition, the morphology of anaphors and pronouns shows that they share many properties. As in (23a), the instances of anaphora are analyzed as pronoun with added focus marker *self*, a pronominal possessive with either a grammaticalized inalienable possessive NP (23b), or a body-part noun (23c).

- (23) a. pronominal *him*, anaphor *him-self* (English)
 b. *z'n eigen* (colloquial Dutch)
 his own
 ‘himself’
 c. *koye men* (Fulani)
 heads our
 ‘ourselves’ (Zwart 2002:273)

An example of merger for reference/coreference is in the following. In (25), the antecedent *Tom* is merged to the PRONOUN in an A-position for the PRONOUN to refer to it. In this step of merger, the antecedent assigns a feature [+referential] to the generic referential element PRONOUN.⁷ For Case and grammatical function, the antecedent must move to an A-position (subject position), an A-binding relation between the antecedent and PRONOUN by definition. The morphological realization of PRONOUN is a post-syntactic process.



⁷ In Zwart (2002), he calls the feature [+coreferential].

To conclude for the section, I have combined the two theories of Kayne (1994) and Dikken & Singhapreecha (2004) as the framework for the analysis of relatives in the paper. In addition, I have also introduced Zwart (2002), which serves as a framework in the paper for the analysis of *suo* and the Head nominal in relatives in Mandarin Chinese.

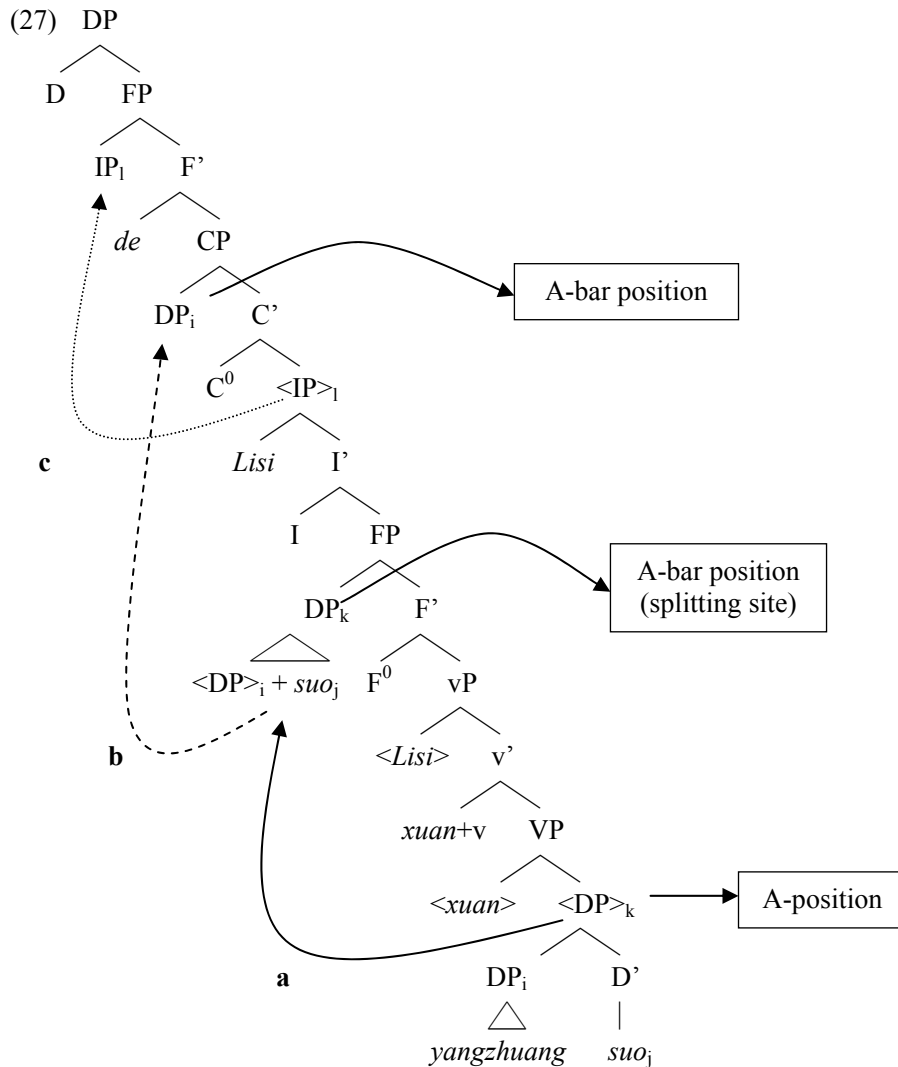
4. An analysis of *suo* in relatives in Mandarin Chinese

This section starts to analyze *suo* in relatives in Mandarin Chinese under the combined framework (Kayne 1994, Den Dikken & Singhapreecha 2004), and under the framework of Zwart (2002) introduced in the last section. I give a structure proposed in the paper in §4.1, and point out the differences between the proposed structure and the adopted frameworks in §4.2. Explanations for such differences are also given in this subsection. Subsection 4.3 shows evidence from Hindi. In §4.4, I talk about the A-bar binding dependency between *suo* and its antecedent.

4.1 A proposal

Building on Zwart (2002), I assume that for the PRONOUN *suo* to refer to its antecedent/Head nominal, it must be merged by the Head nominal as the first step of the derivation.

- (26) [Lisi suo xuan de] yangzhuang
 Lisi SUO choose LIN dress
 ‘the dress(es) that Lisi chose’



The cluster [antecedent, *suo*] moves to an FP between the embedded IP and vP. In this A' position, the antecedent splits out to the embedded Spec CP while *suo* stays. The remnant IP (Kayne 1994), which is a predicate, raises to the Spec FP headed by the LINKER *de* (Den Dikken & Singhapreecha 2004). The derivations of each step are given in (27), which is a tree representation for (26).

In (27), the Head nominal is merged to the PRONOUN *suo* for referential relationship. After the cluster moves to the FP between IP and vP (a-movement in (27)), the Head nominal *yangzhuang* splits out from this position to the Spec CP (b-movement in (27)),

followed by the remnant IP movement/Predicate Inversion to the Spec FP headed by *de* (c-movement in (27)).

4.2 Differences in the proposed structure from Kayne (1994) and from Zwart (2002)

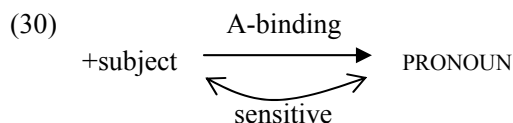
Comparing the derivations in (27) with those in (19), two differences are found. First, in (27) the cluster has an extra movement to an A-bar position. Such a position is an available A-bar position for elements like focus markers *shi* and *zhi* ‘only’, which in the literature have been generally assumed to surface at a position between S (IP) and V (vP) in the normal word order in Mandarin Chinese, S_VO. For example, both *shi* and *zhi* surface at the position between subjects and verbs in (28)-(29).

- (28) wo shi/zhi xihuan ta
 I F.M./only like he
 ‘I do/only like him.’
- (29) ta shi/zhi liu chang toufa
 she F.M./only have long hair
 ‘She does/only have/has long hair.’

Another motivation for the landing of the cluster at the FP between IP and vP is given in §5.

Second, instead of splitting in an A-position as in (25), the antecedent splits in an A-bar position in (27). Having landed at another A-bar position, Spec CP, the antecedent A-bar binds the particle *suo*.

Another difference is found between (25) and (27). Consider (25) proposed by Zwart (2002) again. In his structure, the cluster [antecedent, PRONOUN] is base-generated in the object position (A-position). To acquire its Case and thematic role, the antecedent must move out (A-movement). The landing site for the antecedent can only be the subject position (A-position). Such dependency between the antecedent and the PRONOUN is A-binding. On the other hand, consider (27) proposed in the paper. The splitting site for the cluster [antecedent, *suo*] is an A-bar position, and the landing site for the antecedent is also an A-bar position (Spec CP, non-subject position). Such dependency between the antecedent and the PRONOUN is A-bar binding.



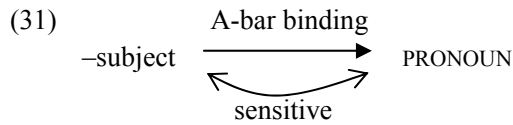


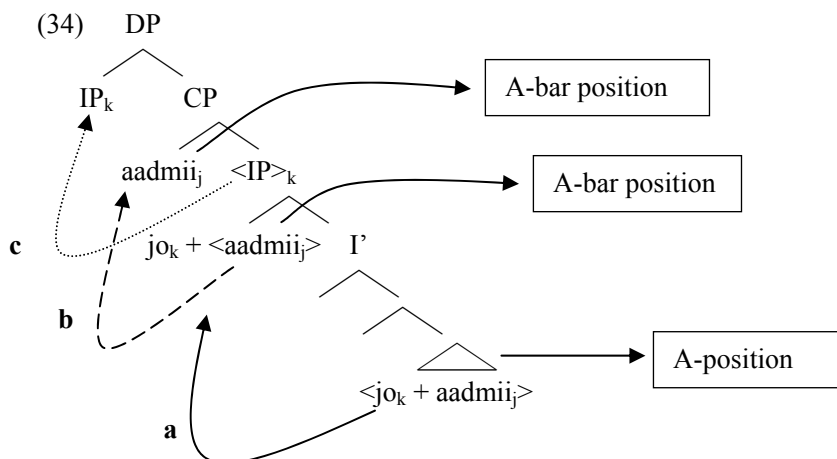
Diagram (30) shows the A-binding dependency predicated in Zwart (2002), but another possible A-bar binding dependency (31) is assumed to exist in his theory from the analysis of *suo* relatives in the paper. In A-binding dependency (30), the antecedent must be a subject while in A-bar binding dependency (31) the antecedent can never be a subject. In a sense, the two binding dependencies are sensitive to the subjecthood of antecedents of the PRONOUN.

4.3 Further evidence from Hindi

Relatives in Hindi are known for their various constructions: non-finite prenominal relatives and finite correlatives. The finite correlatives can further be divided into three subcategories: normal relatives, postposed relatives, and preposed relatives. Since the evidence for my proposed structure comes from the normal relatives, my focus of the subsection is only on the normal Hindi relatives (see Mahajan 2000 for a detailed discussion of other types of relatives in Hindi).

The abstract movements proposed in (27) for the derivations of *suo* relatives in Mandarin Chinese can be seen overtly in normal Hindi relatives. Example (32) is a normal Hindi relative clause corresponding to the tree structure in (34) before any movement (a, b, or c-movement) takes place. (32) is also the output of the merger of the Head nominal *aadmii* and the bound pronoun *jo*. In (33), the a-sentence corresponds to the a-movement in (34), and the b-sentence to the b-movement. Each one of the examples in (32-33) is a well-formed output.

- (32) [DemP VO [CP [IP siitaa-ko jo aadmii acchaa lagtaa he]]]
 DEM Sita-DAT REL man nice seem-IMP be-PRES
 ‘the man who Sita likes’
- (33) a. [DemP VO [CP [IP [jo aadmii]_i [siitaa-ko t_i acchaa lagtaa he]]]]
 DEM REL man Sita-DAT nice seem-IMP be-PRES
 ‘the man who Sita likes’ (corresponds to *a-movement* in (34))
- b. [DemP VO [CP aadmii_j [IP [jo t_j]_i [siitaa-ko t_i acchaa lagtaa he]]]]
 DEM man REL Sita-DAT nice seem-IMP be-PRES
 ‘the man who Sita likes’ (corresponds to *b-movement* in (34))
- (Mahajan 2000:213-214)



The overt a-movement of the cluster to an A-bar position in (34) corresponds to the abstract a-movement in (27). The overt b-movement of the Head nominal to another A-bar position (Spec CP) corresponds to the abstract b-movement in (27), and the last overt c-movement to the abstract c-movement in (27).

4.4 Binding phenomena

I have shown the derivations of *suo* relatives in the last subsections. In this subsection, more details of the binding phenomena of *suo* and its antecedent are discussed.

As is generally known, a bound pronoun needs to be bound by its antecedent locally. According to Rizzi (2001), to bind a variable locally means the antecedent and the variable are in a minimal configuration where no other element that shares some structural characteristics with the antecedent can intervene. The concept can be described in the abstract configuration in (35).

(35) ...antecedent...X...PRONOUN...

For PRONOUN to be locally bound by antecedent, the intervening X cannot have any certain characteristic in common with antecedent, and the antecedent and the PRONOUN must be in the same minimal configuration. Such a local binding of PRONOUN can be seen in an actual example in (27). In (27), *suo* is bound by its antecedent *yangzhuang* within the same minimal configuration (CP). Between them, no element that shares the objecthood with the antecedent can be found. *Suo* is thus bound locally.

Suo in relatives shows disjointness from subject; i.e. it can never be bound by the relativized subjects as in (36b).

- (36) a. [Lisi suo_i xuan ___i de] yangzhuang_i
 Lisi SUO choose LIN dress
 ‘the dress(es) that Lisi chose’
 b. [___i (*suo)_i xuan yangzhuang de] ren_i
 SUO choose dress LIN person
 intended: ‘the person who chose the dress(es)’

Such disjointness of *suo* from subject within the same clause can be explained by a historical account. Based on Wei (2004), *suo* in Archaic Chinese was used as a relative pronoun referring only to objects or indirect objects while *zhe* ‘those who’ was used to refer to subjects (see Wei 2004 for a more detailed discussion about *zhe*). Due to the lexical features, *suo* can never be merged by subjects at the first step of derivation, and it cannot be bound by subjects, either. (36b) is thus ruled out.

Similar patterns can also be found in English and Hindi. In English, while the relative pronoun *who* refers to relativized subject *the girl* in (37), the relative pronoun *whom* refers to relativized object *the man* in (38).

- (37) John likes the girl who is standing there.
(38) Mary likes the man whom Tom hires.

Also, the pronoun *uskaa* in Hindi shows the same disjointness from subjects. In (39), the pronoun *uskii*, which is a version of *uskaa* in the context, can only refer to the object *Ravi*, but never to the subject *Vijay* within the same clause.

- (39) vijay-ne ravii-ko uskii saikil-par bithaayaa
 Vijay-ERG Ravi-ACC his bicycle-LOC sit-CAUS-PERF
 ‘Vijay_i seated Ravi_j on his_{*i,j} bike.’
 (Mohanani 1990, cited from Dalrymple 1993:37)

4.5 An interim summary

In this section, I have shown the derivations of the PRONOUN *suo* in relatives, building on Zwart (2002) that the PRONOUN and its antecedent are merged as the first step of the derivations when they are referential. The evidence for the proposed derivations is from normal Hindi relatives.

In addition to the A-binding relation between an antecedent and its bindee, two particles from Mandarin Chinese *suo* and Hindi *uskaa* are evidence to support the assumption that there is also an A-bar binding dependency between a binder and its

bindee in Zwart's (2002) theory.

In the following section, I discuss the semantic role played by *suo* in relatives. As assumed, different semantic interpretations are expressed by different syntactic structures. If the stipulation made in the following section holds, it may support the syntactic position of *suo* proposed in the paper.

5. Another role of *suo* in relatives

Among the works on *suo* in relatives in Mandarin Chinese (Chiu 1995, Zhang 2001, 2002, Ting 2003), presupposition is made that the optionality of *suo* in relatives does not give any different semantic function to clauses/sentences containing it.

In this section, I propose that *suo* is an intensifier relating to non-subject in relatives in Mandarin Chinese. If such a proposal holds, not only our knowledge on *suo* is deepened, but the proposal may further support the possibility for landing *suo* at an FP between the embedded IP and vP (see example (27)).

5.1 Intensifiers

According to König & Siemund (2000), reflexives in argument positions such as in (40) are real reflexive anaphors.

- (40) John hates himself.

However, there are reflexives that do not have to take argument positions like *himself* in (40). They can occur in non-argument positions following a nominal expression. In (41), the reflexive *herself* is an adnominal use of intensifiers while in (42) the reflexive *myself* is an adverbial use of intensifiers, both of which are not used as arguments.

- (41) Mary herself has finished the work.
(42) I have cleaned up the house myself.

Such reflexives are called in the literature as intensifiers, emphatic reflexives, or emphatic pronouns. Reflexive anaphors and intensifiers can be identical in their forms as in English examples (40) vs. (41)-(42). They can also be different as in Latin (*se* as reflexive anaphor, and *ipse* as intensifier).

Besides their different distributions, one more distinction between reflexive anaphors and intensifiers is that the former is obligatory in a sentence structure, but the latter is optional (Schladt 2000).

5.2 An intensifier of adnominal use in Mandarin Chinese: *ziji*

An example of reflexives in Mandarin Chinese is *ziji* ‘self’. It can function as a reflexive anaphor as in (43), and it can also function as an intensifier as in (44). The focus of the subsection is its latter function.

- (43) a. Lisi taoyan ziji
 Lisi hate self
 ‘Lisi hates himself.’
 b. ta kanjian ziji le
 he see self ASP
 ‘He sees himself.’
- (44) a. Zhangsan ziji xie wan zuoye le
 Zhangsan self write finish homework ASP
 ‘Zhangsan himself has finished his homework.’
 b. Mali ziji qu taibei le
 Mary self go Taipei ASP
 ‘Mary herself has gone to Taipei.’
 c. Lisi ziji xuanze de na-ge xuesheng
 Lisi self choose LIN that-CL student
 ‘that student which Lisi himself chooses’

Note that the intensifying *ziji* must be adjacent to the nominal it modifies, i.e., its antecedent, in each of the examples in (44), even in a relative clause (44c). This fact may indicate that *ziji* and its antecedent are base-generated together as Zwart’s (2002) theory suggests.

There are some constraints on the selection of antecedents of the intensifier *ziji*. It can never modify an object antecedent which is not a pronoun. In (45a), *ziji* is adjacent with its object modifyee, but the sentence is ungrammatical. One may doubt the proposal of base-generating *ziji* and its modifyee together, but in (45b), where *ziji* is positioned before the verb, it still cannot modify the object *Zhangsan*. (45a) is grammatical if the object *Zhangsan* is replaced by a pronoun as in (45c). However, the pronoun *ta* in (45c) must refer to the subject *Lisi*. As a result, the intensifier *ziji*, relying on the pronoun, its antecedent, refers to the subject.

- (45) a. *Lisi xihuan Zhangsan ziji
 Lisi like Zhangsan self
 *‘Lisi likes Zhangsan_i himself_i.’

- b. Lisi_i ziji_{i/*j} xihuan Zhangsan_j
 Lisi self like Zhangsan
 ‘Lisi himself likes Zhangsan.’
- c. Lisi_i xihuan ta_{i/*j} ziji_{i/*j}
 Lisi like he self
 ‘Lisi likes himself.’

As shown in (45), the intensifier *ziji* cannot be an available intensifier for free objects (proper nouns) (45a-b) or for pronouns that refer to subjects (45c). Following that, a question arises. Since *ziji* is an intensifier for subjects, but not for objects, there might be an intensifier for objects (non-subjects) in the lexicon. In addition to the proposal made in the previous sections on *suo*, I further assume that the PRONOUN *suo* is an intensifier for this gap in the lexicon.

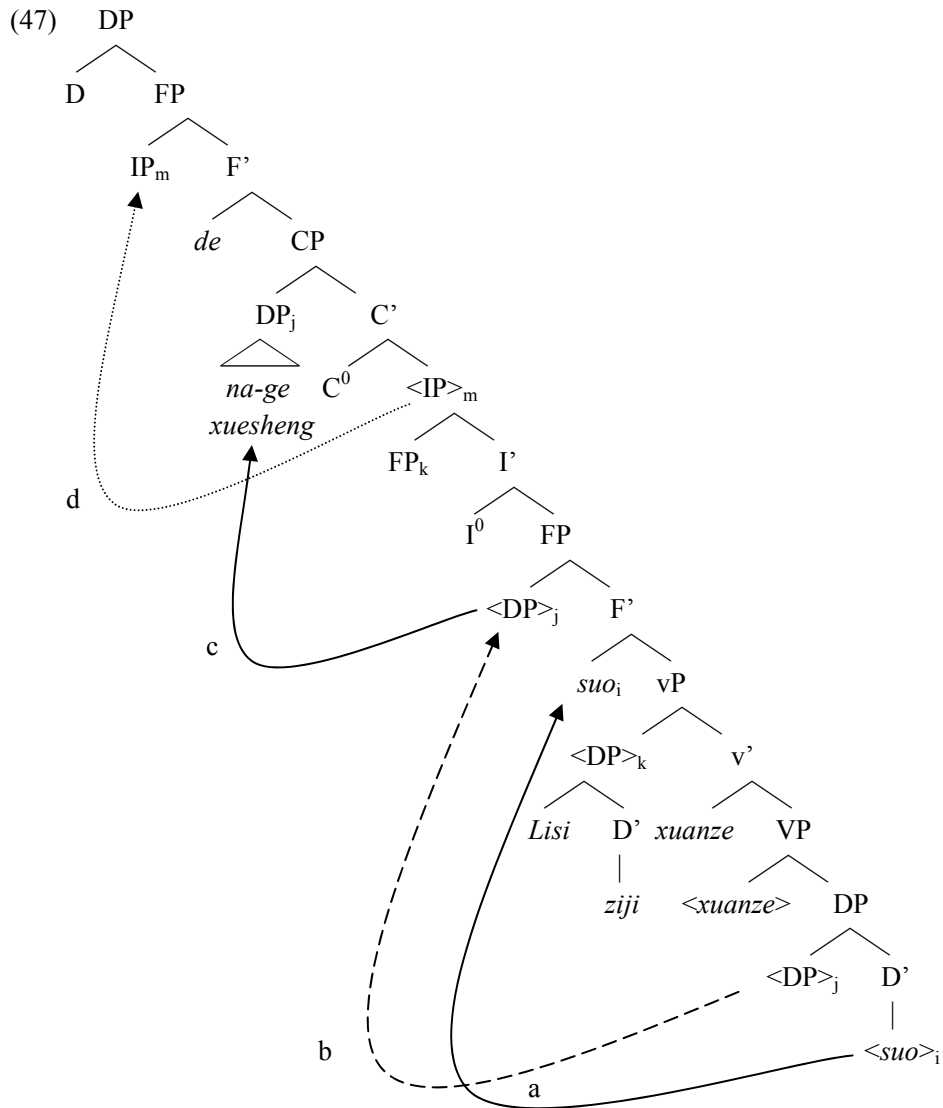
5.3 An intensifier for non-subjects

The grammaticality of the following sentence can be predicated under the assumption that *suo* is a non-subject intensifier while *ziji* is a subject one.

- (46) Lisi ziji suo xuanze de na-ge xuesheng
 Lisi self SUO choose LIN that-CL student
 ‘that student which Lisi himself chooses’

Building on the structure proposed in (27), but a little different from it, I give a new structure for *suo* relatives with respect to the intensifier function of *suo*. Different from (27), *suo* splits out at its base-generated position to the head of a FP between the embedded IP and vP (a-movement in (47)). As a modifiee of the intensifier *suo*, the Head nominal moves to the Spec FP (b-movement in (47)).

The Spec-head relation of the Head nominal and *suo*, as stated above, is for their referential relation. The new relation between them after the a- and b-movements in (47) is set up for the intensifying interpretation.



Though König & Siemund (2000) state that adnominal use of intensifiers is an adjunction to NPs, it is not applicable in Mandarin Chinese. In Mandarin Chinese, information projections can be located between IP and vP, such as FocusP. Thus, the difference of the adnominal use of the intensifier in Mandarin Chinese from their analysis may due to a matter of language typology.

To conclude, in this section, I have proposed that besides the syntactic role played by *suo* in relatives in Mandarin Chinese, it is an intensifier for non-subjects. This

function of *suo* has lent support to its landing between IP and vP assumed in §4.⁸

6. Conclusions

In this paper, I have argued that the bound pronoun *suo* is merged with its antecedent at the first step of derivations under Zwart's (2002) theory since they are referential. The derivations of the cluster have been supported by Hindi relative clauses where each derivation gives a well-formed output. In the derivations, *suo* is locally bound by its antecedent. Being an intensifier, *suo* moves to the Spec FP between IP and vP, and attracts its modifiee, i.e. the Head nominal, to its new Spec.

The binding phenomena in *suo* relatives unveiled in the paper helps to see another possible binding dependency between the PRONOUN and the antecedent in Zwart (2002): the A-bar binding dependency. PRONOUN in either A or A-bar binding dependency is sensitive to subjecthood. In the former in Zwart (2002), the antecedent must be a subject while in the latter the antecedent cannot be a subject.

⁸ One of the reviewers raises two differences between *shi* and *zhi*, and *suo*. *Suo* shows limitation on the elements it puts emphasis on, but the former two select their focused elements freely. The other difference is that the focused meaning of *suo* is sometimes optional, but that of *shi* and *zhi* always exist. I shall leave the issue to future research.

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[Received 23 June 2005; revised 24 June 2007; accepted 2 July 2007]

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漢語中的「所」關係子句

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本文主要研究漢語中的「所」關係子句，並論證它是受詞關係代名詞。「所」與 Zwart (2002) 提出的代名詞皆與主詞指向有著密切關係。「所」的非主詞指向暗示著一個代名詞與它的先行詞有附加語制約依存關係；而 Zwart 的代名詞與它的先行詞有論元制約依存關係。本文同時也指出漢語的無中心關係子句是自由關係子句。至於關係子句與它的先行詞的範疇，本文提倡此範疇為特定名詞片語，而不是非特定名詞片語，其佐證來自於它的整個子句加上先行詞都可以出現在漢語中的主題位置以及存在句。

關鍵詞：所，關係子句，附加語制約依存關係，論元制約依存關係