

## 1. Introduction

Bianchi (2000) assumes that in relativization, the D of the Head nominal (relative D), which is the nominal related to the gap of the relative clause, is incorporated into the external D of the hosting nominal. On the other hand, Schmitt (2000: 325) studies the specificity effects of relativization and relates the effects to the tense of relative clauses. Compatible with Kayne (1994), her conclusion argues for a complement, rather than adjunct, analysis of relatives. In this paper, we show the interactions among the specificity of external D, the relative D, and the aspect relation between the matrix and the relative clause in Chinese.

Relatives as well as other types (AP, NP, DP) of modifiers of nominals in Chinese occur in one of the two positions: the left-peripheral position, as in (1a), and the one to the immediate left of the Head N, as in (1b). We will call the former position H-pos and the latter L-pos.

- (1) a. dai yanjing de (na) san ge xuesheng  
wear glasses DE that three CL student  
'(those) three students who wear glasses'  
b. (na) san ge dai yanjing de xuesheng  
that three CL wear glasses DE student  
'(those) three students who wear glasses'

We see in (1) that the two positions of the relatives are available for both definite and indefinite nominals. Bianchi (2000: 125-126) claims that "the relative D<sup>0</sup> is underspecified with respect to the feature of definiteness, so that it is consistent with either an indefinite or a definite external D<sup>0</sup>" If there were no interaction between the assumed relative D and external D, we would expect that the two positions are always available. This is not true, as we will show in this paper. We will show that there is a morphological interaction between the specificity of the relative D and the indefinite external D, if the events encoded by the matrix clause cooccurs with that by the relative clause, and that the interaction is exhibited in the restriction on the position of the relative. The fact presented in this study, namely, the existence of the interactions between the specificity features of the Head nominal and the external D in relativization, would not be expected if relative clauses were adjuncts of NP. Thus like Schmitt (2000), the fact presented here argues against the NP-adjunct approach to Chinese relativization.<sup>1</sup>

We introduce some background information in the rest of this section. We present the position pattern of relatives and the relevant data in section 2. Then in section 3 we discuss the pattern. The paper is concluded in section 4.

First of all, the demonstratives *zhe* 'this' and *na* 'that' explicitly mark a definite DP. We assume that nominals with the demonstratives have a definite D, and the demonstratives are possibly in SpecDP, as argued Szabolcsi (1994) and Campbell (1996). The word *yi* 'one, a,' behaves differently from other numerals (Tsai 2001). Like *ein* in German and *un* in French, it has properties of an indefinite determiner in the absence of a demonstrative. We assume that *yi* in such a case occurs at the position of the indefinite D.

Arguments in certain syntactic structural positions can be obligatorily nonspecific or specific/definite. For instance, postverbal arguments of (dis)appearance verbs, as in (2), must

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<sup>1</sup> We have no doubt on the claim that in Chinese, as in other languages, the Head nominals, as antecedents of relative pronouns or their null counterparts, are DPs rather than NPs. In addition, the interactions with respect to specificity alone suggest that the Head nominals are DPs, if specificity must be encoded by a DP projection.

be indefinite (Huang 1987). Zhang (2001) further shows that such arguments must be nonspecific. In contrast, preverbal subjects, as generally assumed, must be specific or definite in Chinese, as shown in (3).

- (2) a. Lai-le {liang ge ren /\*Daiyu/\*na ge ren}.  
 come PRF two CL person/Daiyu/that CL person  
 ‘Two persons have come.’  
 b. Cun-li si-le {san tou zhu/\*Daiyu/\*na tou zhu}.  
 village-in die-PRF three CL pig/ Daiyu / that CL pig  
 ‘Three pigs died in the village.’
- (3) a. [\*(na) san ge xue wuli de xuesheng dao-le].  
 that three CL study physics DE student arrive-PRF  
 ‘(Those) Three students who study physics arrived.’  
 b. Akiu yiwei \*(na) san ge xue wuli de xuesheng dao-le.  
 Akiu think that three CL study physics DE student arrive-PRF  
 ‘Akiu thought that those three students who study physics arrived.’

In this paper, we will use the contrast between arguments in these two syntactic positions, and the aspect contrast with respect to the cooccurrence of the event denoted by the matrix and the relative clause, to see whether the contrasts have any effect in relativization.

To avoid the possible interactions of the matrix verbs on the specificity of the external D of the nominals under discussion, we use neither experiencer verbs nor verbs of creation as matrix verbs. Indefinite objects of the former must be specific and that of the latter must be nonspecific (Diesing 1992).

Based on the above relevant background information, we start our presentation of the D-interaction in relativization.

## **2. The position pattern of relatives**

The data in this section exhibit the following position pattern of relatives in the four types (I-IV):

(4) The positions of relatives in the presence of the indefinite external D *yi*

The events of the matrix and the relative	intrinsically specific: gap of a preverbal subject	intrinsically nonspecific: gap of post-(dis)appearance-verb arguments
Same time	I. L-pos only	II. *
Different time	III. H-pos & L-pos	IV. H-pos & L-pos

The chart tells us that in the presence the indefinite external D, if the gap-related argument is a preverbal subject, and the two events denoted by the matrix and the relative clause co-occur, the relative can only occur in the L-pos (I); if the gap-related argument is a post-(dis)appearance verb argument and the two events denoted by the matrix and the relative clause co-occur, the sentence is always unacceptable (II); and if the two events denoted by the matrix and the relative clause do not co-occur, regardless of the specificity of the gap-related argument, the relative can occur either at the L-pos or at the H-pos (III & IV).

### 2.1 Type I: Co-occurrent two events and a gap of a preverbal subject

Although *yi* ‘one, a’ is compatible with a preceding adjective, pronoun, and proper noun, it is not compatible with a preceding relative clause which contain a gap of a preverbal subject. The data also show that numerals other than *yi* do not have this constraint.

Non-relative modifiers: <sup>ok</sup>H-pos, <sup>ok</sup>L-pos

- (5) a. wo kanjian-le hen fei de yi tou zhu. (AP or DegP)  
 I see-prg very fat DE one CL pig  
 'I saw a very fat pig.'  
 b. wo kanjian-le yi tou hen fei de zhu.
- (6) a. Ta tou-le ni de yi feng xin. (Pronoun)  
 he steal-PRF you DE one CL letter  
 'He has stolen a letter of yours.'  
 b. Ta tou-le yi feng ni de xin.
- (7) a. Baoyu xi-le Daiyu de yi kuair shoujuanr. (Proper Noun)  
 Baoyu xi-PRF Daiyu DE one CL handkerchief  
 'He washed a handkerchief of Daiyu's.'  
 b. Baoyu xi-le yi kuair Daiyu de shoujuanr.

Relatives: \*H-pos, <sup>ok</sup>L-pos

- (8) a. Baoyu piping-le zhengzai chou-yan de {\*yi/san} ge tongxue.  
 Baoyu criticize-PRF PROG smoke DE one/three CL classmate  
 'Baoyu criticized {one/three} classmate(s) who were smoking.'  
 b. Baoyu piping-le {yi/san} ge zhengzai chou-yan de tongxue.
- (9) a. Ta tiaoxuan-le zhengzai chi cao de {\*yi/liang} tou niu.  
 he choose-PRF PROG eat grass DE one/two CL cow  
 'he chosed {one/two} cow(s) that were eating grass.'  
 b. Ta tiaoxuan-le {yi/liang} tou zhengzai chi cao de niu.

## 2.2 Type II: Co-occurrent two events and a gap of a post-(dis)appearance verb argument

The data in (11) show that the nonspecific argument in (10) cannot head relatives in a normal intonation (i.e., in the absence of a contrastive focus), regardless of the position of the relative clause.

- (10) a. Waimian zhengzai gua yi chang da-feng.  
 outside PRG blow one cl big-wind  
 'There is blowing a big wind outside.'
- (11) a. \*Ta kanjian-le waimian zhengzai gua de yi chang da-feng.  
 He see-prf outside PRG blow de one cl big-wind  
 b. \*Ta kanjian-le yi chang waimian zhengzai gua de da-feng.  
 He see-prf one CL yesterday PRG blow de big-wind

Note that if such arguments are in the form of bare nouns, the acceptability of the relativization changes:

- (12) a. Ta kanjian-le waimian zhengzai gua de da-feng.  
 He see-PRF outside PRG blow de big-wind  
 'He saw the big wind which was blowing outside.'

The acceptability contrast between bare nouns and full-fledged nominals indicates that the interaction is morphological in nature.

2.3 Type III: Two temporally different events and a gap of a presubject

<sup>ok</sup>H-pos, <sup>ok</sup>L-pos

- (13) a. wo kanjian-le zai nimen yuetuan biaoyan de yi ge nühair.<sup>2</sup>  
I see-PRF at we orchestra performance de one CL girl  
'I saw a girl who plays in our orchestra.'  
b. wo kanjian-le yi ge zai nimen yuetuan biaoyan de nühair.

2.4 Type IV: Two temporally different events and a gap of a post-(dis)appearance verb argument

The following data show that the relevant relative clauses can be either in the H-pos or the L-pos.

<sup>ok</sup>H-pos, <sup>ok</sup>L-pos

- (14) a. Ta gangcai piping-le dui-menr zuotian lai de yi ge keren.  
he criticize-PRF opposite-door yesterday come de one cl guest  
'Just now he criticized a guest who came to the opposite door yesterday.'  
b. Ta gangcai piping-le yi ge dui-menr zuotian lai de keren.  
(15) a. Qiuju jintian mai-le cun-li shang-xingqi si de yi tou niu.  
Qiuju toda bury-prf village-in last-week die de one cl cow  
'Today Qiuju buried a cow which dies last week.'  
b. Qiuju jintian mai-le yi tou cun-li shang-xingqi si de niu.

### **3. Discussion**

If modifiers of nominals have two possible positions, the H-pos and the L-pos, the restricted position shown in Type I and the unavailability of the two positions in Type II are unexpected.

The position constraint seen in Type I is not seen if the modifier is not a relative clause. In other words, the constraint seen on relative clauses does not show up on AP, pronouns, proper nouns, etc. This suggests that relatives are syntactically different from other modifiers. Crucially, although pronouns and proper nouns also have D-relevant features, there is no interaction between such features with the external indefinite D. In addition, unlike relative clauses, other types of modifiers of nominals do not encode aspect information and thus no aspect interaction is expected. On the other hand, the interaction is not seen if there is no overt external D element, i.e., in the absence of *yi*. If we assume that there is a null indefinite D for individual-denoting nominals initiated with a numeral other than *yi*, the contrast between *yi*-initial nominals and other indefinite nominals suggests that the interaction is morphological, rather than semantic. Specifically, the interaction is that among the specific feature of the relative D, the morphological properties of *yi*, which is merged at the external D, and the aspects of the two clauses involved.

Our next question is why it is the L-pos rather than the H-pos that survives. Zhang (2001) investigates the distribution of the two modifier positions in indefinites. The conclusion there is that the L-pos is the default one. Specifically speaking, although there are modifiers which never occur at the H-pos, there is no modifier which occurs only at the H-pos. If the L-pos is the default position, it is expected that it wins over the H-pos whenever there is only one choice for modifiers in indefinites.

In the unacceptable Type II, the Head nominals are intrinsically nonspecific. If such nominals have a definite external D, the corresponding sentences are acceptable, as shown below:

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<sup>2</sup> I am very grateful to Audrey Li for giving me this example. Data like this force me change my early analysis which did not consider the effects of aspects.

- (16) a. Ta kanjian-le waimian zhengzai gua de na chang da-feng.  
 he see-prf outside PRG blow de that cl big-wind  
 'He saw the big wind which was blowing outside.'  
 b. Ta kanjian-le na chang waimian zhengzai gua de da-feng.

Similar relativization pattern is seen in English (Browning 1991). In (17a), the argument cannot be definite. However, it can head a relative when the external D is the definite *the*, as in (17b), but it cannot head a relative when the external D is overtly marked as indefinite, as in (17c).

- (17) a. \*There were **the** men in the garden.  
 b. **The** men that there were in the garden. (cf. 16)  
 c. ??{**some/three/few**} men that there were in the garden (cf. 11)

The contrast between (17b) and (17c) is similar to that between data like (16) and Type-II (11). We claim that in relativization, since Head nominals are antecedents of relative pronouns or their null counterparts (Chomsky 1977, Safir 1986, Browning 1991, and Demirdache 1991, etc.), they must be specific (see also Karimi 1999: 705 for a relevant discussion). That is why (17c) is highly marginal. Accordingly, we claim that if a Head nominal is a *yi*-nominal, as in (14)/(15), it must be specific. But why the one in (11) cannot be interpreted as a specific and be licensed, we leave for future research.

A parallel specificity effect of relativization is seen in the case where an obligatorily indefinite nominal is allowed to be definite if it is modified by a relative clause.

- (18) a. I bought one type of bread.  
 b. \*I bought **the** type of bread.  
 c. I bought **the** type of bread you like.  
 (19) a. John painted the house a nice color.  
 b. \*John painted the house **the** nice color.  
 c. John painted the house **the** color his girlfriend liked.

Again, we found the similar contrast in Chinese:

- (20) a. bangongshi-li lai-le {yi/\***na**} ge jiaoshou.  
 office-in come-prf one/that cl professor  
 'A professor has come to the office.'  
 b. bangongshi-li lai-le {yi/\***na**} ge hen gao de jiaoshou.  
 office-in come-prf one/that cl very tall de professor  
 'A tall professor has come to the office.'  
 c. bangongshi-li lai-le **na** ge ni congbai de jiaoshou.  
 office-in come-prf that cl you admire de professor  
 'The professor that you admire has come to the office.'

Schmitt (2000: 325) studies the specificity effects of relativization shown in data like (18) and (19) and relates the effects to the tense of relative clauses. Her conclusion argues for a complement, rather than adjunct, analysis of relatives. The contrasts presented in our section 2 clearly show that the aspect relation between the matrix and the relative clauses plays a role. This also supports the complement analysis of relatives. If relatives are adjuncts of NPs, they would be too remote to interact with the matrix clause. Although we have not accounted for the interactions among two Ds and two Asps in relativization, the existence of the interactions presented in this paper supports Kayne's (1994) complement analysis of relatives.

#### **4. Conclusions**

We have presented a distribution constraint on relatives which is not found in other types of modifiers of nominals. The constraint is directly related to the interactions among the specific relative D, the morphological properties of the external D element, and the aspect relation between the matrix and the relative clauses. The existence of the interactions supports Kayne's (1994) complement analysis of relatives.

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