

1. Introduction

Bianchi (2000) assumes that in relativization, in addition to the external D of the hosting nominal, the nominal related to the gap of the relative clause also has a D. One way to test this assumption is to see whether there is any effect of interactions of the D-relevant features between the gap-related nominal and the hosting nominal. This paper shows such an effect in Chinese. Although “the relative D⁰ is underspecified with respect to the feature of definiteness, so that it is consistent with either an indefinite or a definite external D⁰” (Bianchi 2000: 125-126), we will show that there is a morphological interaction between the specific relative D and the indefinite external D, that the interaction is exhibited in the restriction on the position of the relative, and that the interactions between nonspecific relative D and an external D are exactly like that in English.

Relatives as well as other types (AP, NP, DP) of modifiers of nominals in Chinese have 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. 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. The fact presented in this study, namely, the existence of the interactions between the specificity features of the gap-related argument and the external D in relativization suggests that Bianchi is right in assuming two Ds, if specificity must be encoded by a DP projection. On the other hand, it also suggests that in Chinese, as in other languages, the gap-related nominals are DPs rather than NPs. Furthermore, if relative clauses were adjuncts of NP, the interactions would not be expected. Thus the fact presented here also argues against the NP-adjunct approach to Chinese relativization.

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 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 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 to see whether the contrast has 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 combinations (I-IV):

(4) The positions of relatives

	intrinsically specific: gap of a preverbal subject	intrinsically nonspecific: gap of post-(dis)appearance-verb arguments
indefinite ex-D: <i>yi</i>	I. L-pos only	II. *
definite ex-D: <i>zhe/na</i>	III. H-pos & L-pos	IV. H-pos & L-pos

The chart tells us that if the external D is indefinite and the gap-related argument is a subject, the relative can only occur in the L-pos; if the external D is indefinite and the gap-related argument is a post-(dis)appearance verb argument, the sentence is always unacceptable; and if the external D is definite, regardless of the specificity of the gap-related argument, the relative can occur either at the L-pos or at the H-pos.

2.1 Combination I: The indefinite external D and a subject-gap

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 subject gap. The data also show that numerals other than *yi* do not have this constraint.

Non-relative modifiers: ^{ok}H-pos, ^{ok}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.’

- (7) b. Ta tou-le yi feng ni de xin.
 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, ^{ok}L-pos

- (8) a. Baoyu piping-le chou-yan de {*yi/san} ge tongxue.
 Baoyu criticize-PRF smoke DE one/three CL classmate
 'Baoyu criticized {one/three} classmate(s) who smoked.'
 b. Baoyu piping-le {yi/san} ge chou-yan de tongxue.
 (9) a. Ta tiaoxuan-le lai zi caoyuan de {*yi/liang} tou niu.
 he choose-PRF come from grassland DE one/two CL cow
 'he chosed {one/two} cow(s) that came from grassland.'
 b. Ta tiaoxuan-le {yi/liang} tou lai zi caoyuan de niu.

2.2 Combination II: The indefinite external D and a gap of a post-(dis)appearance verb argument

(11) and (12) 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. Dui-menr lai-le {yi/san} ge keren.
 opposite-door come-prf {one/three} cl guest
 'One/Three guest(s) came to the room opposite.'
 b. Cun-li si-le {yi/liang} tou niu.
 village-in die-prf {one/two} cl cow
 'One/Two cow(s) died in the village.'
 c. Zuotian gua-le yi chang da-feng.
 yesterday blow-prf one cl big-wind
 'There was a big wind yesterday.'
 (11) a. *Ta piping-le dui-menr lai de {yi/san} ge keren.
 he criticize-prf opposite-door come de {one/three} cl guest
 b. *Ta piping-le {yi/san} ge dui-menr lai de keren.
 (12) a. *Qiuju mai-le cun-li si de {yi/liang} tou niu.
 Qiuju bury-prf village-in die de {one/two} cl cow
 b. *Qiuju mai-le {yi/liang} tou cun-li si de niu.
 (13) a. *Ta kanjian-le zuotian gua de yi chang da-feng.
 He see-prf yesterday blow de one cl big-wind
 b. *Ta kanjian-le yi chang zuotian gua de da-feng.
 He see-prf one cl yesterday blow de big-wind

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

- (14) a. ?Ta piping-le dui-menr lai de keren.
 he criticize-prf opposite-door come de guest
 'He criticized guest(s) who came to the room opposite.'
 b. ?Qiuju mai-le cun-li si de niu.
 Qiuju bury-prf village-in die de cow
 'Qiuju buried cow(s) that died in the village.'

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

2.3 Combination III: The definite external D and a subject-gap

If a nominal modifier is not a relative: ^{ok}H-pos, ^{ok}L-pos

- (15) a. Wusong da-le zui xiong de na zhi laohu. (AP or DegP)
 Wusong beat-prf most ferocious de that cl tiger
 ‘Wusong beat the most ferocious tiger.’
 b. Wusong da-le na zhi zui xiong de laohu.
- (16) a. Baoyu yaoqing-le Daiyu de na ge pengyou. (proper noun)
 Baoyu invite-prf Daiyu de that cl friend
 ‘Baoyu invited that friend of Daiyu’s.’
 b. Baoyu yaoqing-le na wei Daiyu de pengyou.
- (17) a. Hong Weibing shao-le youguan yixue de naxie shuji. (PP)
 Red Guard burn-prf about medical de those book
 ‘The Red Guards burnt those medical books.’
 b. Hong Weibing shao-le naxie youguan yixue de shuji.

Relatives: ^{ok}H-pos, ^{ok}L-pos

- (18) a. Xue wuli de na san ge xuesheng lai-le.
 study physics DE that three CL student come-PRF
 ‘Those three student who study physics have come.’
 b. **Na** san ge xue wuli de xuesheng lai-le.
 that three CL study physics DE student come-PRF
 ‘Those three student who study physics have come.’

2.4 Combination IV: The definite external D and a gap of a post-(dis)appearance verb argument

The following b-sentences and c-sentences show that the argument in the a-sentences can head relatives, and the relevant relative clauses can be either in the H-pos or the L-pos.¹

- (19) a. gangcai xia-le {*na/yi} chang da-yu.
 just.now fall-prf that/one cl big-rain
 ‘It rained heavily just now.’
 b. Wusong miaoshu-le gangcai xia de na chang da-yu.
 Wusong describe-prf just.now fall de that cl big-rain
 ‘Wusong described the heavy rain that it had just now.’
 c. Wusong miaoshu-le na chang gancai xia de da-yu.

¹ In the (dis)appearance verb constructions, locatives can be regarded as semi-arguments. The occurrence of a locative in relativization sometimes makes the sentence unacceptable or marginal, as shown below. Since the issue is not related to specificity, we do not discuss such interactions

- (i) a. Lao Wang kanjian-le (*zhe tiao he) yan-si de na ge ren.
 Lao Wang see-prf this cl river drown-die de that cl person
 ‘Lao Wang saw the drowned person (in this river).’
 b. Lao Wang kanjian-le na ge (*zhe tiao he) yan-si de ren.
- (ii) a. Wusong miaoshu-le shan-shang lai de na ge lieren.
 Wusong describe-prf mountain-up come de that cl hunter
 ‘Wusong described the hunter who came from the mountain.’
 b. ?Wusong miaoshu-le na ge shan-shang lai de lieren.

- (20) a. Zuotian Riben fasheng-le {*na/yi} chang dizhen.
yesterday Japan happen-prf that/one cl earthquake
'There was an earthquake in Japan yesterday.'
- b. jizhe baodao-le zuotian Riben fasheng de na chang dizhen.
journalist report-prf yesterday Japan happen de that cl earthquake
'There was an earthquake in Japan yesterday.'
- c. jizhe baodao-le na chang zuotian Riben fasheng de dizhen.

3. Discussion

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

The position constraint seen in Combination 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. 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 between the specific feature of the relative D and the morphological properties of *yi*, which is merged at the external D.

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 both Combination II and Combination IV the gap-related arguments are intrinsically nonspecific. The arguments can head a relative if the external D is definite (*zhe/na*) (Combination IV). They however cannot do so if the external D is indefinite (*yi*) (Combination II). Similar relativization pattern is seen in English (Browning 1991). In (21a), the argument cannot be definite. However, it can head a relative when the external D is the definite *the*, as in (21b), but it cannot head a relative when the external D is overtly marked as indefinite, as in (21c).

- (21) a. *There were **the** men in the garden.
b. **The** men that there were in the garden. (cf. IV)
c. ??{**some/three/few**}men that there were in the garden (cf. II)

The contrast between (21b) and (21c) is exactly that between the combination IV and II. Thus a general explanation is called for.

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.

- (22) a. I bought one type of bread.
b. *I bought **the** type of bread.
c. I bought **the** type of bread you like.
- (23) 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:

- (24) 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 congban 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 (22) and (23) and relates the effects to the tense of relative clauses. Her conclusion argues for a complement, rather than adjunct, analysis of relatives. However, unlike Bianchi (2000), neither relative D nor a raising of the Head nominal is assumed in her approach. Nevertheless, her proposal that links the specificity effects of relativization to the tense of the complement clause is insightful. We leave the exact computation of such effects for future research.

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 between the specific relative D and the morphological properties of the external D element. We also show that the interactions between nonspecific relative D and the external D element are exactly like that in English. The interactions between the external and internal D in relativization presented in this study supports Bianchi's (2000) double-D assumption, and is in turn compatible to Kayne's (1994) Promotion approach to relativization.

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