

# Two Pieces of Evidence for PF Deletion in Chinese DP \*

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## Abstract

This paper provides evidence for the deletion within Chinese DP domain. Two novel observations are presented bearing on DP-internal empty categories. First, the discontinuous “modifier + NP” reading of the multiple modifier *de*-construction rules out an empty pro-form analysis. Second, null NP cannot appear in the object position of the first conjunct, which indicates that the empty category can only result from PF deletion.

## 1. Introduction

This squib argues that PF deletion applies in the domain of DP, especially in DP-internal empty elements of object. Section 2 presents two observations bearing on DP-internal empty categories, arguing for the deletion nature of the null NP. Section 2.1 discusses the discontinuous modifier-NP reading in the multiple-modifier DP structure and argues that deletion must be a way to produce empty categories in Chinese DP. Section 2.3 discusses the antecedent requirement of the NP deletion. Section 3 concludes this paper with some discussion on the structure of Chinese DP and the theory of deletion.

## 2. DP Internal Empty Categories

An example of NP deletion is shown in (1)a, with its structure given in (1)b. Traditionally, this is called N'-deletion; Lobeck (1990) and Saito & Murasugi (1990) analyzed it as NP deletion.<sup>1</sup>

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1 We do not mention the possibility of “one’s deletion” (Ross 1986) because a nominal is never replaced by an overt pronominal --- English counterpart of *one* -- in Chinese grammar.

- (1) a. This book is Mary's [e].  
 b. [DP Mary [D 's] [~~NP book~~]]

Chinese possessive nominal is realized in the example (2). The morpheme “*de*” introduces the possessor (Simpson 2003), which modifies the nominal in a possessive DP.

- (2) Zhangsan de shu  
 Zhangsan DE book  
 ‘Zhangsan’s book’

## 2.1 Three Kinds of *-de* in Nominals and Discontinuous Deletion Domain

### 2.1.1 One *de*- Modification

In Chinese, the element *de*- behaves very much on par with the genitive case marker –‘s in English, it introduces the possessive modifier, the relative clause, and the adjectival modifier. Empty category is licensed in all these *de*-constructions. See sentence (3) for example.

- (3) Genitive *de*-  
 Zhe-ben shu shi [Zhangsan de [shu]], na-ben shu shi [Lisi de [e]]  
 This-CL book be ZS DE book that-CL book be LS DE  
 ‘This book is Zhangsan’s book, and that book is Lisi’s’

The Chinese relative clause also licenses an empty nominal, as in (4) and (5).

- (4) *s*-level Relative Clause *de*-  
 Zhe-ben shu shi [wo zuotian mai de shu<sup>2</sup>], na-ben shu shi [ta zuotian mai de [e]]  
 This-CL book be I yesterday buy DE book, that-CL book be he yesterday buy DE  
 ‘This book is the book that I bought yesterday, and that book is the one he bought yesterday’

- (5) *i*-level Relative Clause *de*-  
 Zhe-ben shu shi [[Zhangsan xie de] shu], na-ben shu shi [[Lisi xie de [e]]

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2 The object nominal *shu* here tends to be empty, though the sentence is just as grammatical with its existence.

This-CL book be ZS write DE book, that-CL book be LS write DE  
 ‘This book is the book that Zhangsan wrote, and that book is the one that Lisi wrote’  
 The adjective modifier also licenses an empty category.

#### (6) Adjective Modifier *de*

Zhe-duo hua shi hong de [hua], na-duo hua shi huang de [e]  
 This-CL flower be red DE flower, that-CL flower be yellow DE  
 ‘This flower is a red flower, and that flower is a yellow one’

The nature of the genitive marker *de*-

- a. \*Zhangsani-de xianran [proi shoubi] hen chang.  
 Zhangsan-DE obviously arm very long ‘Zhangsan obviously has very long arm.’  
 b. Zhangsani xianran [proi shoubi] hen Zhangsan obviously arm very  
 ‘Zhangsan obviously has very long arm.’

#### 2.1.2 Stacking of *de*- Modifiers

Interestingly, Chinese permits multiple *de*-modifications. That is, two *de*- modifiers of the same type can precede an empty nominal. For example, the two genitive modifiers in (7) modify a deleted nominal, and they display the *i*-level / *s*-level asymmetry (Larson 2007<sup>3</sup>; Hsieh 2005). The first possessor (*Zhangsan* in (7)) is interpreted as *the owner of the book*, while the second possessor (*Lisi* in (7)) is understood as *the writer of the book*. Being the author of a book is obviously an *i*-level property, but owning a book is not. So *Lisi* must stand closer to the head noun.

- (7) Zhe-ben shu shi [[Zhangsan de] [Lisi de] shu]  
 This-CL book be Zhangsan DE Lisi DE book  
 ‘This book is a book written by Lisi owned by Zhangsan.’

Now let’s turn to the examples (8) and (9). What is interesting is that, in the second conjunct of (8) and (9), the empty category stands for a modifier and the head noun. According to the principle of parallelism, the non-pronounced [e<sub>x</sub>] in (8) is [*Chaomusiji de*] *shu* ‘*Chomsky’s book*’, and the judgments of native speakers indicate so, too. The [e<sub>y</sub>] in (9), on the other hand, stands for a “discontinuous” modification relation. The deleted constituent in (9) is [*Zhangsan de*] *shu* ‘*Zhangsan’s*

3 Japanese Individual-level & Stage-level RC (from Larson & Takahashi 2002)

- (1) a. [Watashi-ga kinoo atta] [tabako-o suu] hito-wa Tanaka-san desu.  
 [1SG-NOM yesterday met][tobacco-ACC inhale] person-TOP T.-COP  
 ‘The person who smokes who I met yesterday is Miss Tanaka.’  
 b. ?\*[Tabako-o suu][watashi-ga kinoo atta] hito-wa Tanaka-san desu.

*book*'. It is, again, a constituent of one modifier with the head noun. But in this case the two elements are not adjacent to each other; they are intervened by the modifier representing authorship.

- (8) Zhe-ben shu shi [Zhangsan de][Chaomusiji de] shu, na-ben shu shi [Lisi de]~~[e<sub>\*</sub>]~~  
 This-CL book be ZS DE Chomsky DE book, that-CL book be LS DE  
 Lit. 'This book is a book written by Chomsky owned by Zhangsan; and that book is one written by Chomsky owned by Lisi'

- (9) Zhe-ben shu shi [[Zhangsan de] [Yu Guangzhong de]] shu, ...  
 This-CL book be ZS DE Yu Guangzhong DE book

na-ben shu shi [[Lu Shun de] [e<sub>y</sub>]]  
 that-CL book be Lu Shun DE

Lit. 'This book is a book written by Yu Guangzhong owned by Zhangsan; and that book is the book written by Lushun owned by Zhangsan'

There seems to be a problem for both *pro*-form analysis and our deletion analysis. A *pro*-form cannot refer to a "discontinuous" constituent.

In appearance, it also poses a problem for ellipsis analysis, because the deleted element is not a constituent in (9).

- (10) Zhe-ben shu shi [[Zhangsan de] [Yu Guangzhong de]] shu, ...  
 This-CL book be ZS DE Yu Guangzhong DE book

na-ben shu shi [~~Zhangsan de~~] [Lushun de] ~~shu~~  
 that-CL book be ZS DE Lushun DE book

The examples in (11) to (13) show the same problem. A modifier can be deleted along with the head noun (11), leaving an intervening modifier intact.

- (11) Zhangsan shi [hui shuo jingpianzi de] [xihuan guoju de] ren  
 ZS be [can speak Peking.dialect DE] [ like Chinese.opera DE] person  
 'Zhangsan is a person who can speak the Peking dialect and loves Chinese opera'

Lisi ze shi [buhui shuo jingpianzi de] [~~xihuan guoju de~~] ~~ren~~

LS however be [cannot speak Peiking.dialect DE] [like Chinese-opera DE] person  
 ‘Lisi, in contrast, is one who cannot speak Peking dialect, but loves Chinese opera’

- (12) Zhangsan shi [hui shuo jingpianzi de] [xihuan guoju de] ren  
 ZS be [can speak Peiking.dialect DE] [like Chinese.opera DE] person  
 ‘Zhangsan is a person who can speak Peking dialect and loves Chinese opera’

Lisi ze shi ~~[hui shuo jingpianzi de]~~ [bu xihuan guoju de] ren  
 LS however be can speak Peking.dialect DE not like Chinese.opera DE person  
 ‘Lisi, on the other hand, is one who can speak Peking dialect, but does not love Chinese opera’

- (13) Zhe-shu hua shi [zuotian mai de] [jintian cai kai de] meiguihua,  
 This-CL flower be [yesterday buy DE] [today then bloom DE] rose  
 ‘This bundle of flowers is a bundle of roses that was bought yesterday and bloomed today’

Na-shu hua shi ~~[zuotian mai de]~~ [jintian haimei kai de] meiguihua  
 That-CL flower be [yesterday buy DE] [today not.yet bloom DE] rose  
 ‘That bundle of flowers is one that was bought yesterday but that was not yet bloomed today’

However, in the next section we will show that only the deletion analysis can solve the discontinuity puzzle.

## 2.2 Solving the Problem

To solve the problem discussed in the previous section, we can account for example (12), repeated as (14), by assuming focus fronting movement. A focused modifier can be fronted to a DP-internal focus position and the internal NP is then deleted. Focus fronting of a modifier is an independent phenomenon in Chinese. As noted in Zhang (1998) and Lin (2008), Chinese attributive adjective can undergo fronting and precede the DNC sequence, as in (15). This is considered as an instance of focus movement.<sup>4</sup>

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4 There is a remaining problem. If the movement account is on the right track, how is it that the fronted element shows no superiority effect? Superiority effect is known to constraint crossing paths of multiple movements of the same type (Rudin 1988; Bruening 2001). Lin (2008) extended it to the prenominal modifiers. We could suggest that either the stacking of the same type of *de*-modifier (12)(13) is equi-distance or the ellipsis repairs superiority violation, so that one modifier could be moved across another *de*-modification.

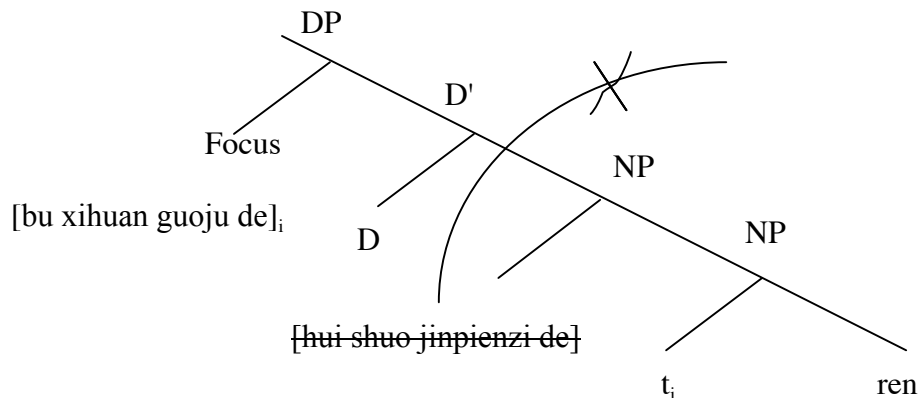
- (14) [<sub>DP</sub> bu xihuan guoju de] [<sub>NP</sub> ~~[hui shuo jinpianzi de]~~ [<sub>t<sub>i</sub></sub>] ren]  
 not like Chinese.opera DE] [<sub>NP</sub> [can speak Peking.dialect DE] [<sub>t<sub>i</sub></sub>][person]]

- (15) a. Yi-jien [hong hong de] yifu (Zhang 1998:198)  
 One-CL [red red DE] clothes  
 ‘a piece of red clothing’

- b. [**hong hong de**] yi-jien *t<sub>i</sub>* yifu.<sup>5</sup>  
 [red red DE] one-CL clothes  
 ‘a piece of **red** clothing’

Our analysis is shown in the following tree diagram (16). Focus fronting of a modifier phrase following a NP deletion results in the surface form of (14).

(16)



At this point, it has shown that the discontinuous empty category is only possibly licensed by deletion operation, but not by an empty pro-form. In the following, we will show that the DP-internal empty category must have a linguistic antecedent. This is, again, a characteristic of PF deletion phenomena.

### 2.3 Antecedent

Another property of deletion is the requirement for a linguistic antecedent (Hankamer and Sag 1976). PF deletion in the second conjunct must apply in accordance with an antecedent in the first conjunct (Merchant 1999). The null hypothesis is that strictest

<sup>5</sup> The boldface is used to indicate the placement of a focal stress.

syntactic parallelism holds; that is, the antecedent must appear in the same syntactic position as the deleted element. This requirement is observed in Chinese. The contrast in (17) and (18) shows that deletion of a nominal is possible only when an antecedent is available in the first conjunct. If the deleted element is in the first conjunct and the antecedent is in the second conjunct, the sentence is ungrammatical.

- (17) \*[Zhe-san-ben shu] shi [Zhangsan de **[e<sub>i</sub>]]**, [na-san-ben shu] shi [Lisi de shu]  
 This-three-CL book be ZS DE that-three-CL book be LS DE book  
 ‘These three books are Zhangsan’s, and those three books are Lisi’s books’

- (18) Zhe-san-ben shu shi Zhangsan de shu, na-san-ben shu shi Lisi de **[e<sub>i</sub>]**  
 This-three-CL book be ZS DE book, that-three-CL book be LS DE  
 ‘These three books are Zhangsan’s books, and those three books are Lisi’s’

The same asymmetric is seen with the subject position, as in (19) and (20).

- (19) \*Zhe-san-ben **[e<sub>i</sub>]** shi Zhangsan de shu, na-san-ben shu shi Lisi de shu  
 This-three-CL be ZS DE book that-three-CL book be LS DE book  
 ‘These three are Zhangsan’s books, and those three books are Lisi’s books’

- (20) Zhe-san-ben shu shi Zhangsan de shu, na-san-ben **[e<sub>i</sub>]** shi Lisi de shu  
 This-three-CL book be ZS DE book, that-three-CL be LS DE book  
 ‘These three are Zhangsan’s books, and those three are Lisi’s books’

The *pro*-form account may suggest that the empty NP could be referred to the nominal in the second conjunct, but it is not viable since Chinese do not allow backward anaphor in the first place (21)(22).

- (21) Taziji<sub>i</sub> shi [Lisi de xuesheng]<sub>i</sub>  
 Himself be LS DE student  
 Int ‘He (, himself) is Lisi’s student’

- (22) [bici]<sub>i</sub> zui zhenxi [womenban tongxue]<sub>i</sub>  
 Each other most cherish our.class classmate  
 Int ‘Classmates of our class cherish each other the most’

### 3. Conclusion

This paper provides evidences to argue for a PF deletion analysis for DP internal empty category. Specifically, the discontinuous “*modifier + Empty Category*” prefers a deletion analysis to an empty *pro*-form (Lobeck 1995, Li 2007).

### References

- Bruening, B. 2001. QR obeys superiority: frozen scope and ACD. *Linguistic Inquiry* 32.2:233-273.
- Del Gobbo, F. 2005. Chinese relative clauses: restrictive, descriptive or appositive? In Proceedings for The XXX Incontro di Grammatica Generativa, ed. By Laura Bruge, Giuliana Giusti, Nicola Munaro, Walter Schweikert & Giuseppina Turano, 287-305. Venezia: Cafoscarina.
- Hankamer, Jorge and Ivan Sag (1976) "Deep and Surface Anaphora," *Linguistic Inquiry* 7, 391-426.
- Hsieh, M. 2005. Two Types of Modifiers and Parallelisms between DPs and TPs in Chinese. *Language and Linguistics*. 6.3: 397-429.
- Huang, J. 1982. Logical Relations in Chinese and the Theory of Grammar. MIT, PhD dissertation.
- Huang, J. 1984. “On the Distribution and Reference of Empty Pronoun” *Linguistic Inquiry*. Vol. 15. 4: 531-574.
- Huang, J. 1991. “Remarks on the status of the null object” in R. Freidin (ed.) *Principles and Parameters in Comparative Grammar*, 56-76. Cambridge, MA: MIT Press.
- Larson, R. and Takahashi, N. 2002. Order and interpretation in Japanese relative clauses. Paper presented at the Annual Meeting of the Linguistics Society of America. San Francisco.
- Larson, R. 2007. Order & Interpretation in Prenominal Relative Clauses. *MIT Working Papers in Linguistics Vol. 54*. (pp.101-120) Cambridge, MA: MITWPL.
- Lin, J. 2008. **The Order of Stage-level and Individual-level Relatives and Superiority Effects**. *Language and Linguistics* 9:4 839-864.
- Lobeck, A. 1990. Functional Heads as Proper Governors. *NELS* 20, 348-362.
- Lobeck, A. 1995. Ellipsis: Functional Heads, Licensing, and Identification. New York: Oxford University Press.
- Lobeck, A. 2006. Ellipsis in DP *The Blackwell Companion to Syntax* . ed. Martin Everaert and Henk van Riemsdijk. Blackwell Publishing.



- Merchant, J. 1999. *The Syntax of Silence: Sluicing, Islands, and Identity in Ellipsis*, PhD Dissertation, University of California, Santa Cruz.
- Ross, C. 1983. "On the Functions of Mandarin *de*". *Journal of Chinese Linguistics* 11 (2), 214-246.
- Saito, M. Lin, J. & Murasuki, K. 2008. N'-ellipsis and the structure of noun phrases in Chinese and Japanese. *Journal of East Asian Linguist.* 17:247–271.
- Saito, M. and Murasugi, K. 1990. "N'-Deletion in Japanese: A Preliminary Study," *Japanese/Korean Linguistics* 1, 285-301.
- Simpson, A. 2002. On the status of modifying *de* and the structure of the Chinese DP. In *On the formal way to Chinese linguistics*, ed. Sze-Wing Tang and Chen-Sheng Luther Liu, 74-101. Stanford: CSLI
- Takahashi, N. 1997. Hierarchy among relative clauses in Japanese. Unpublished ms., SUNY-SB
- Zhang, N. 1998. "Argument Interpretation in the Ditransitive Construction." *Nordic Journal of Linguistics* 21: 179-209.