

## Argument ellipsis and structures of noun phrases

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### 1 Introduction<sup>1</sup>

East Asian languages are frequently viewed as similar in that they are topic-prominent languages and arguments can generally be missing (null arguments). However, there have been more and more works contrasting Chinese and Japanese null arguments and showing that the two are not identical (see, for instance, Cheng 2013, H.-J. G. Li 2002, Y.-H. A. Li 2007a, 2014, Miyagawa 2010, Roberts 2017, Sato 2014, 2016, Şener and Takahashi 2010, Tomioka 2014, among others). This paper briefly summarizes the similarities and differences between Chinese and Japanese null arguments and a subject/object asymmetry in interpretive possibilities in Chinese, and reviews accounts available in the literature for the relevant empirical generalizations. It will be shown that most of the analyses proposed so far leave something to be desired conceptually and/or empirically. I will then discuss how the parametric account for the range of null arguments proposed in Roberts (2017, USC class lectures) can situate Chinese in the typology of null arguments and how a slight adjustment of his account for Chinese null arguments can be most promising in capturing all the relevant empirical generalizations.

### 2 Discourse *pro*-drop languages: Chinese vs. Japanese

Widely known is the fact that the three East Asian languages, Chinese, Japanese and Korean, all allow their arguments to be missing freely. However, Li (2005, 2014), Aoun and Li (2008) note that some constructions in Chinese do not allow object drop and interpretive possibilities for null subjects and null objects differ. The noted null subject/object asymmetry is absent in Japanese (Cheng 2013, Li 2007a, Miyagawa 2010, Oku 1998, Sato 2014, Şener and Takahashi 2010, Tomioka 2014, among others). Specifically, although Japanese null subjects and objects allow strict and sloppy interpretations, take indefinite (quantificational) expressions as antecedents, and Chinese null objects have the same interpretive possibilities, Chinese null subjects must have the closest c-commanding noun phrase as antecedents. These generalizations are illustrated by the cases below. The examples (1-3) illustrate the possibility of null objects in Japanese having strict, sloppy, and

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quantificational (indefinite) readings (the following and similar examples are in the works mentioned above):

- (1) a. *John-wa [zibun-no tegami-o] suteta.*  
 John-TOP self-gen letter-ACC discarded  
 ‘John<sub>i</sub> threw out his<sub>i</sub> own letters.’  
 b. *Mary-mo [e] suteta.*  
 Mary-also discarded  
 ‘Mary did, too.’  
 i. Mary also threw out John’s letters (strict)  
 ii. Mary also threw out her own letters (sloppy)
- (2) a. *Taroo-wa [zibun-no kodomo-ga eigo-o hanasu to] omotteiru.*  
 Taroo-TOP self-GEN child-NOM English-ACC speak C thinks  
 ‘Taroo<sub>i</sub> thinks that his<sub>i</sub> child speaks English.’  
 b. *Ken-wa [e furansugo-o hanasu to] omotteiru*  
 Ken-TOP French-ACC speak C thinks  
 ‘Ken thinks that e speaks French.’  
 i. Ken thinks that Taroo’s son speaks French. (strict)  
 ii. Ken thinks that his own son speaks French. (sloppy)
- (3) a. *Taroo-wa sannin-no sensei-o sonkeishiteiru*  
 Taroo-TOP 3-GEN teacher-ACC respects  
 ‘Taroo respects three teachers.’  
 b. *Hanako-mo e sonkeishiteiru*  
 Hanako-also respect  
 ‘Hanako also respects e.’  
 i. Hanako respects them too. (strict)  
 ii. Hanako respects three teachers too. (sloppy)  
 c. *Sannin-no mahootukai-ga Taroo-ni ai-ni kita.*  
 three-GEN wizard-NOM Taroo-DAT see-to came  
 ‘Three wizards came to see Taroo.’  
 d. *Hanako-ni-mo ai-ni kita.*  
 Hanako-DAT-also see-to came  
 ‘e came to see Hanako too.’  
 i. They came to see Hanako too. (strict)  
 ii. Three wizards came to see Hanako too. (sloppy)

The examples in (4-5) show that Chinese null objects allow strict and sloppy readings, as well as the quantificational reading. In contrast, Chinese null subjects do not allow sloppy readings as in (6), nor the quantificational reading as in (7-8).

- (4) *Zhangsan kanjian-le ziji/ta-de xuesheng. Lisi ye kanjian-le e*  
 Zhangsan see-LE self/he-DE student Lisi also see-LE  
 ‘Zhangsan saw his (own (self’s)) students; Lisi also saw (Zhangsan’s/his own students).’

- (5) a. *Zhangsan kanjian-le san-ge xuesheng. Lisi ye kanjian-le e*  
 Zhangsan see-LE 3-CL student Lisi also see-LE  
 ‘lit. Zhangsan saw 3 students. Lisi also saw e.’ (quantificational)
- b. *Zhangsan kanjian-le san-ge xuesheng. Lisi ye kanjian tamen le.*  
 Zhangsan see-LE 3-CL student Lisi also see them LE  
 ‘lit. Zhangsan saw 3 students. Lisi also saw them.’ (\*quantificational)
- (6) a. *Zhangsan shuo [ziji-de haizi xihuan Xiahong].*  
 Zhangsan say self-DE child like Xiahong  
 ‘Zhangsan said that self’s child liked Xiahong.’
- b. *Lisi shuo [e xihuan Xiaoli].*  
 Lisi say like Xiaoli  
 ‘Lisi said that e liked Xiaoli’ (<sup>ok</sup>strict, \*sloppy)
- (7) *(you) san-ge yisheng qu kan Zhangsan; \_\_\_ ye qu kan Lisi.*  
 have three-CL doctor go see Zhangsan also go see Lisi  
 ‘Three doctors went to see Zhangsan; \_ also went to see Lisi.’  
 (<sup>ok</sup>strict, \*sloppy)
- (8) *wo kandao san-ge yisheng qu kan Zhangsan; \_\_\_ ye qu kan Lisi.*  
 I see three-CL doctor go see Zhangsan also go see Lisi  
 ‘I saw three doctors went to see Zhangsan; \_\_\_ also went to see Lisi.’  
 (<sup>ok</sup>strict, \*sloppy)

In addition, Tomioka (2014, 71) notes that the impossibility of sloppy interpretations for embedded subjects in Chinese cannot be overturned via pragmatic means. For instance, he observes that, although singular personal pronouns in English generally do not render sloppy readings in conjunctive environment as in (9a) below (Tomioka’s (5a) in p. 71), an expression like *everyone but X* often helps such a reading become available (9b) (Tomioka’s (5b) in p. 71). Japanese works in the same way (Tomioka’s (6) in p. 71).

- (9) a. Billy thinks his mother is beautiful, but Johnny thinks she looks rather plain. (<sup>ok</sup>strict, ?\*sloppy)
- b. Every boy but Johnny thinks his mother is beautiful, but Johnny thinks she looks rather plain. (<sup>ok</sup>sloppy)
- (10) *Kazuki-igai-no subete-no kodomo-wa zibun-no kaita e-o*  
 Kazuki-except-GEN all-GEN child-TOP self-GEN drew picture-ACC  
*oya-ni mise-ta Kazuki-wa sore-o yabut-te suttee.*  
 parent-DAT show-PAST Kazuki-TOP it-ACC tear-GENRUND throw.away  
 ‘Every child except for Kazuki showed to their parents the picture that they drew. Kazuki, on the other hand, tore it up and threw it away.’  
 (<sup>ok</sup>sloppy)

Importantly, a comparable example in Chinese still does not yield a sloppy interpretation (Tomioka’s (7) in p. 71)

- (11) *meige xuesheng, chule Lisi, dou renwei* [<sub>CP</sub> *ziji de laoshi hen congming*], *???dan Lisi renwei* [<sub>CP</sub> *e hen ben*].  
 every student except Lisi all think self<sub>DE</sub> teacher very smart but Lisi think very dumb  
 ‘Every student except Lisi thinks that the teacher of himself is very smart, but Lisi thinks (he) is dumb.’

According to Tomioka, the second conjunct is hardly acceptable: the only pragmatically sensible reading for the empty subject is the sloppy reading; Lisi thinks his own teacher is dumb, but the subject simply fails to produce such a reading. To elicit the intended meaning, one has to repeat ‘self’s teacher’ in place of an empty category in the embedded subject position. Tomioka (2014, 72-73) further highlights an interesting contrast between Chinese and Japanese null subjects. Japanese null subjects in adjunct clauses behave like other null subjects. However, in Chinese, although a strict reading is possible with a null subject in the context of a clause embedded under a matrix verb, only an obligatorily controlled reading is available for the null subject in an adjunct clause (also see Li 2014).

- (12) *Mari-wa* [*Erika-ga atama-ii-kara*] *suki-da-ga*  
 Mari-TOP Erika-TOP head-good-because fond.of-COP-but  
*Yumi-wa* [*e seikaku-ga ii-kara*] *suki-da*.  
 Yumi-TOP personality-NOM good-because fond.of-COP  
 ‘Mari likes (Erika) because Erika is intelligent, but Yumi likes her because she (= Erika) is nice.’
- (13) *Zhangsan* [*yinwei ziji de haizi de-le diyi jiang*] *hen gaoxing*;  
 Zhangsan because self<sub>DE</sub> child get-LE first prize very happy  
*Lisi* [*yinwei \_\_\_ de-le dier jiang*] *bu gaoxing*.  
 Lisi because get-LE second prize not happy  
 ‘Zhangsan was happy because self’s child (his child) got the first prize; Lisi was not happy because \_\_\_ got the second prize.’
- (14) *zhiyou Lisi* [*yinwei \_ shudiao-le bisai*] *tebie bu kaixin*.  
 only Lisi because lose-LE match very not happy  
 ‘Only Lisi was unhappy since he lost the match.’

The strict reading of this sentence can be paraphrased as ‘Lisi is the only one x such that x was unhappy because Lisi lost. The others were unhappy because someone other than Lisi lost (or some reasons other than Lisi’s losing).’ Importantly, (14) is not possible in such a situation. The empirical generalizations presented so far can be summarized below.

- (15) a. Null objects in Chinese and Japanese behave alike; they allow strict and sloppy interpretations; they also allow indefinite readings (taking QPs as antecedent).

- b. Null subjects in Japanese allow sloppy readings and can take QPs as antecedents. A null subject in Chinese either has a strict reading or is bound by the higher subject.
- c. The null subject of an adjunct clause in Chinese allows only the obligatorily controlled PRO interpretation; but the corresponding Japanese null subject is not so restricted.

### 3 Argument ellipsis, *pro*, analyses

Various proposals have been made over the years to account for the interpretive differences of null arguments. A main line of research is to separate null arguments into two categories – one being an elided argument (argument ellipsis) vs. the other as an empty pronoun (*pro*/PRO). The latter, not the former, is restricted in interpretive possibilities. The distribution of the two types is governed by different factors in different proposals. Below is a brief description of the main proposals.

#### 3.1 Agreement

According to Saito (2007), Miyagawa (2010), Şener and Takahashi (2010), Sato (2014, 2015, 2016), Sato and Karimi (2016), among others, there exists a correlation between the occurrence of empty pronouns and agreement. The presence of agreement means argument ellipsis is not possible. Therefore, in agreement contexts, a null argument cannot be due to argument ellipsis and can only be an empty pronoun. As with overt pronouns, empty pronouns do not have sloppy interpretations. Japanese is a language without agreement (Kuroda 1988). Accordingly, missing subjects and objects in Japanese can be the result of argument ellipsis and sloppy readings are available. In contrast, Şener and Takahashi (2010) note that Turkish allows argument ellipsis in the object position but not in the subject position, as demonstrated by the availability of sloppy readings for missing objects, not missing subjects. This is because Turkish requires subject agreement but objects do not agree. By analogy, the subject-object asymmetry noted in section 2 suggests that Chinese should have subject agreement. Miyagawa (2010) argues that this is indeed the case, supported by the so-called blocking effects on the long-distance anaphor *ziji* ‘self’ in Chinese. However, Simpson et al. (2013), Li (2014), among others, argue that the (un)availability of argument ellipsis is not correlated with the presence/absence of agreement, as shown in Bangla, Hindi, and Malayalam, and that the so-called blocking effect on the use of the long-distance anaphor *ziji* is not related to agreement. The Chinese long-distance anaphor *ziji* is a logophor, and the interpretation of *ziji* is sensitive to the perspective taken by the speaker, as in Huang and Liu (2001).

#### 3.2 Definiteness requirement

Another approach attributes the noted contrast between Chinese and Japanese null subjects to a definiteness constraint on subjects in Chinese but not in Japanese (cf. Cheng 2013, Simpson et al. 2013, Sato 2015). However, examples like (7-8) show

that subjects can be indefinite in Chinese and that the sloppy reading is still unavailable in these indefinite cases.<sup>2</sup>

### 3.3 Difference in nominal structure: NP vs. DP

Li (2007a) proposes a structural account for the different behavior of Chinese and Japanese null arguments. Adopting Huang's (1982) generalized control, which governs the interpretive possibilities of PRO/*pro*, Li argues that the noted contrast in interpreting null subjects and objects in Chinese can be derived from the generalized control rule applying to empty pronouns in Chinese. A Chinese empty pronoun is just like a regular pronoun – having a DP structure (cf. Postal 1967, Tang 1990, Li 1998, 1999, among others). In contrast to Chinese empty pronouns having a DP projection, Japanese null arguments are empty NPs, and the generalized control rule is irrelevant to NPs (Hoji's 1998 notion of concept noun; cf. Saito, Lin and Murasugi 2008, among many others). The following paragraphs briefly describe the main points of this proposal.

As claimed in Huang (1982), an empty pronoun, *pro*, is possible in the subject position of Chinese, but impossible in the object position due to conflicts in the binding requirements on a *pro*: a *pro* is subject to control (generalized control rule) and must take the closest c-commanding nominal as its antecedent. In the case of an object, the closest c-commanding nominal is the subject of the same clause. However, a pronoun in the object position is a pronoun and obeys binding principle B; i.e., it should be free from the subject of the clause. The conflicting requirements on an empty pronoun in the object position means that a null argument in the object position cannot be a *pro*/PRO. Because it cannot be an empty pronoun, nor any of the other recognized empty categories,<sup>3</sup> Li suggests that the null argument in the object position is a true empty category (TEC), simply a place holder whose interpretation is determined by copying an antecedent in the discourse at the Logical Form. In addition, in order to capture the subject-object asymmetry noted above (15b), a TEC can only be in positions disallowing *pro*/PRO. That is, an ordering relation exists and a TEC is considered as last resort.

In contrast, Japanese null arguments are projected as NPs. They can be interpreted as the null equivalent of bare nouns (Hoji 1998) or they are cases of NP-ellipsis (Tomioka 2003). Noguchi (1997) claims that Japanese has both D-pronouns and N-pronouns. Then, the restrictions on the distribution of D-pronouns as noted in Chinese are obscured by the availability of N-pronouns.

Li (2007a)'s analysis captures the contrasts between Chinese and Japanese and between subject and object null arguments in Chinese as summarized in (15). The

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<sup>2</sup> Simpson et al. (2013) and Cheng (2013) note the availability of “pseudo-sloppy” readings for null subjects (rich contexts required). They maintain the claim that null subjects are not the result of argument ellipsis (allowing true sloppy readings). Cheng claims this is a case of deep anaphora.

<sup>3</sup> According to the classification of empty categories in the framework of government and binding (Chomsky 1981), NP-traces or variables are the results of movement. These are considered as copies of the raised elements in the Minimalist Program as in Chomsky 1995. Because movement structures are not a concern here, they will not be included in this work.

obligatory control interpretation described in Tomioka is simply due to the fact that subject null arguments are *pro*/PRO obeying the generalized control rule.<sup>4</sup> Importantly, the foundation of this analysis is the claim that Chinese is a DP language. However, over the years, there have been works, represented by Bošković and Hsieh (2012), Cheng (2013) further developing Bošković (2008, 2009), arguing that Chinese is an NP, not a DP language. I show in the next section that careful examination of the relevant arguments and data will still lead us to the conclusion that Chinese is a DP language.

#### 4 NP/DP distinction

Bošković (2008, 2009), Bošković and Hsieh (2012), Cheng (2013), among others, note that languages with articles tend to have certain properties in contrast to those without. The former but not the latter tend to have radical *pro*-drop, i.e., allowing null arguments prominently. Cheng (2013) discussed relevant properties extensively and concluded that Chinese should be an NP language, as predicted by Bošković's distinction of article and article-less languages.<sup>5</sup> In the following subsections, I show that the claim that Chinese is an NP language is not empirically supported.<sup>6</sup> In fact, the evidence supports Chinese as a DP language. The following discussion and examples will be based on Cheng (2013, chapter 2, especially sections 2.1-2.3)

##### 4.1 Left branch extraction/adjunct extraction/scrambling

One distinguishing criterion for NP vs. DP languages is that languages without articles (NP languages) may allow the extraction of left branch or adjunct elements, and scrambling. However, none of these processes are possible in Chinese. The following cases show that Chinese does not allow left-branch extraction.

- (16) \**henguide/lusede/na-liang<sub>i</sub> ta kanjian-le [ t<sub>i</sub> chezi]*  
 expensive/green/that-CL he see-LE car

<sup>4</sup> A contrast highlighted in Tomioka (2013) - that the null subject in the complement clause of a verb seems to allow more readings than the null subject of an adjunct clause, can be due to the possibility of a null topic (an antecedent in the discourse) for the former, but not the latter. That is, a null subject in non-island clauses can be a variable, but not a null subject in an adjunct clause, which is anteceded by the closest c-commanding nominal (the generalized control rule).

<sup>5</sup> Bošković acknowledges that the noted distinctions between article and article-less languages are tendencies, not universals. This makes it less certain if one can determine whether a language is a DP or NP language according to the criteria proposed. In the case of Chinese, there have been independent arguments for it to be a DP language, such as Tang (1990), Li (1998, 1999).

<sup>6</sup> In addition to those listed in this section, there are some others, including the occurrence of classifiers and the lack of plural morphology in article-less languages. However, Old/Archaic Chinese (even going back to pre-Archaic Chinese in 14th-11th c. BC) did not have articles, did not have classifiers, and did not have a plural marker (see, for instance, Peyraube 1991, Wang 1994. Cf. Baxter and Sagart 2014: 396, footnote 24), even though it did have null subjects and null objects (Waltraud Paul, personal communication; Djamouri et al. 2013).

‘He saw expensive/green/that car.’

Chinese does not have the Japanese type of scrambling, either:<sup>7</sup>

- (17) a. *John-ga [dare-ga] dare-no shasin-o katta ka sitteiru.*  
 John-NOM who-NOM who-GEN picture-ACC bought Q know  
 ‘John knows who bought pictures of who.’  
 b. *[dare-no shasin-o]<sub>1</sub> John-ga dare-ga t<sub>1</sub> katta ka sitteiru*  
 who-GEN picture-ACC John-NOM who-NOM bought Q know  
 ‘John knows who bought pictures of who.’ [Oku 1998,154]
- (18) a. *Zhangsan zhidao [shei mai-le shei-de zhaopian]*  
 Zhangsan know who buy-LE who-GEN picture  
 ‘Zhangsan knows who bought pictures of who.’  
 b. *\*[shei-de zhaopian]<sub>1</sub> Zhangsan zhidao [shei mai-le t<sub>1</sub>]*  
 who-GEN picture Zhangsan know who buy-LE  
 ‘Zhangsan knows who bought pictures of who.’

#### 4.2 Negative raising

Another distinction is that languages without articles disallow negative raising (in terms of strict clause-mate NPI licensing), and languages with articles allow it. Cheng (2013) notes that this is indeed the case in Chinese, illustrated by the contrast between (19a) and (19b) and between (19c) and (19d) below.

- (19) a. *\*Zhangsan zuotian hua-le ban-mao-qian*  
 Zhangsan yesterday spend-LE half-cent-money  
 ‘intended: Zhangsan did not spend any money yesterday.’  
 b. *Zhangsan zuotian **meiyou** hua ban-mao-qian*  
 Zhangsan yesterday not spend half-cent-money  
 ‘Zhangsan did not spend any money yesterday.’  
 c. *\*Zhangsan **meiyou** renwei Lisi zuotian hua-le ban-mao-qian*  
 Zhangsan not think Lisi yesterday spend-LE half-cent-money.  
 ‘Zhangsan does not think that Lisi spent any money yesterday.’  
 d. *Zhangsan renwei Lisi zuotian **meiyou** hua ban-mao-qian*  
 Zhangsan think Lisi yesterday not spend half-cent-money  
 ‘Zhangsan thinks that Lisi did not spend any money yesterday.’

However, the following sentences show that Neg-Raising is possible. It seems that the choice of negation words makes a difference.

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<sup>7</sup> Sentences can be unacceptable for a variety of reasons. The fact that Chinese does not allow the movement processes mentioned here does not mean that Chinese cannot be an NP language (see, Syed and Simpson 2017). Nonetheless, the lack of such movement processes does mean the absence of positive evidence for Chinese being an NP language.



- (20) *ta \*(bu) hui hua ban-mao-qian.*  
 he not will spend half-cent-money  
 ‘He will not spend any money.’
- (21) *women dou bu renwei ta hui hua ban-mao-qian.*  
 we all not think he will spend half-cent-money  
 ‘We all don’t think that he will spend any money.’

### 4.3 Double adnominal genitives

Still another distinction proposed is that languages without articles do not allow transitive nominals with two genitives, which is said to follow from the assumption that a genitive occurs in the Specifier position and there is only one Specifier position each for the NP and DP layer respectively. The Specifier of NP provides one position and DP provides an additional layer to host a genitive.

The reasoning does not seem to match an important claim adopted by the NP structure analysis: NPs in NP languages generally are not assumed to have Specifiers; they have adjunctions (see sections 4.5-4.7 below on possessors, word order, and binding). Empirically, it is not clear that an alleged NP language such as Japanese disallow double genitives. This can be illustrated by Saito, Lin and Murasaki (2008). They note that Japanese allows two genitives but not Chinese. They attribute this contrast to their proposal according to which genitives are in the Specifier of D position in Chinese, but possessors are adjoined to NPs in Japanese. Because there is only one Specifier of D hosting a genitive, Chinese allows only one genitive. In contrast, the adjunction structure in Japanese allows multiple genitives.

Further note that for Chinese as well, the empirical generalization is not as clear as stated in these works. A more accurate picture of Chinese is that it does allow multiple genitives, as demonstrated below.

- (22) *Chomsky de lilun de jiashe changchang shi hen dadan de.*  
 Chomsky DE theory DE hypothesizing often be very bold DE  
 ‘Chomsky’s hypothesizing of theories is often bold.’
- (23) *women de zhe-ci zhe-pian wenzhang de jiaodui hua-le*  
 we DE this-time this-CL article DE proof-reading spend-LE  
*henduo shijian.*  
 much time  
 ‘Our proof reading of the article this time took much time.’

It is true that when verbs with two arguments are nominalized, the two arguments often do not appear as double genitives but take a clausal like structure and the preposition *dui* ‘to/toward’ is used.

- (24) [NP1 V<sub>n</sub> NP2] → [[NP1 *dui* NP2] V<sub>n</sub>]  
*Chomsky dui lilun de jiashe changchang shi hen dadan de.*  
 Chomsky to theory DE hypothesizing often be very bold DE  
 ‘Chomsky’s hypothesizing of theories is often bold.’

Importantly, when the relation between the object argument and the nominalized verb is not compatible with the meaning of *dui* ‘to/toward’, double genitives are employed to introduce subjects and objects. For instance, in events whose object participants do not come into existence till after the completion of the event (such as digging a tunnel or making a discovery), the activity cannot be done to (*dui*) the object. The object takes the genitive form, creating double genitives.

- (25) a. *tamen de liangci suidao de wajue dou hua-le henduo shijian.*  
 they DE twice tunnel DE dig bothspend-LE much time  
 ‘Their two times of digging of tunnels took much time.’  
 b. \**tamen liangci dui suidao de wajue dou hua-le henduo shijian.*  
 they twice to tunnel DE dig bothspend-LE much time
- (26) a. *Niudun de dixinyinli de faxian shi weida de chengjiu.*  
 Newton DE gravity DE discovery be great DE achievement  
 ‘Newton’s discovery of gravity is a great achievement.’  
 b. \**Niudun dui dixinyinli de faxian shi weida de chengjiu.*  
 Newton to gravity DE discovery be great DE achievement

More generally, when the preposition *dui* ‘to/toward’ before the object argument is not appropriate semantically, double genitives appear:

- (27) a. \**tamen de na ci dui zhishengji de jiashi gei-le tamen*  
 they DE that time to helicopter DE pilot give-LE they  
*nawangde jingyan.*  
 unforgettable experience  
 ‘Their piloting of a helicopter that time gave them unforgettable experiences.’  
 b. *tamen de na ci zhishengji de jiashi gei-le tamen*  
 they DE that time helicopter DE pilot give-LE they  
*nawangde jingyan.*  
 unforgettable experience  
 ‘Their piloting of a helicopter that time gave them unforgettable experiences.’

#### 4.4 Focus morphology

A further criterion is that negative constituents must be marked for focus in NP languages. According to Cheng, Chinese patterns like NP languages because negative constituents always come with focus elements:

- (28) a. *Zhangsan bu renshi shei*  
 Zhangsan not know who  
 ‘Who doesn’t Zhangsan know?’ ‘#Zhangsan does not know anyone.’  
 b. *Zhangsan shei dou bu renshi*

Zhangsan who all not know  
 ‘Zhangsan does not know anyone.’

However, if *shei* is replaced by *shenme ren* ‘what person’ or other polarity items, the sentence is perfectly fine with the polarity reading.

- (29) *Zhangsan bu renshi shenme ren*  
 Zhangsan not know what person  
 ‘Who doesn’t Zhangsan know?’ ‘Zhangsan does not know anyone.’
- (30) *Zhangsan bu renshi renhe ren.*  
 Zhangsan not know any person  
 ‘Zhangsan does not know anyone.’
- (31) *wo bu keneng zai nali pengdao guo ta.*  
 I not can at where meet ASP him  
 ‘I cannot have met him anywhere.’
- (32) *wo meiyou zai shenme shihou gen ta taolun-guo zhe-jian shi.*  
 I not at what time with him discuss-LE this-CL matter  
 ‘I have not discussed this matter with him at any time.’

#### 4.5 Interpretation of possessors

Another distinction is that possessors may induce an exhaustivity presupposition only in DP languages. Cheng suggests that Chinese possessors does not have an exhaustivity presupposition and therefore is an NP language. Allegedly, (34), in contrast to (33), need not be only three sweaters.

- (33) *John’s three sweaters* -only three sweaters
- (34) *Zhangsan-de san-jian maoxianyi*  
 Zhangsan-GEN three-CL sweater  
 ‘Zhangsan’s three sweaters’

However, it is not true that an exhaustivity presupposition does not exist in Chinese. It is exhaustivity in the relevant context. For instance, (35) below, in contrast to (36), indicates that there are only three sweaters belonging to Zhangsan that need to be washed.

- (35) *qing ni xian xi Zhangsan de san-jian maoyi.*  
 please you first wash Zhangsan DE three-CL sweater  
 ‘Please wash first Zhangsan’s three sweaters.’
- (36) *qing ni xian xi san-jian Zhangsan de maoyi.*  
 please you first wash three-CL Zhangsan DE sweater  
 ‘Please wash first three sweaters that belong to Zhangsan.’

#### 4.6 Word order

Word order has also been proposed to be a criterion distinguishing NP and DP

languages: ordering of adjectives, demonstratives, and possessors are free in NP languages like Chinese but not in DP languages such as English.

- (37) a. *Zhangsan-de hongse de paoche*    b. *hongse de Zhangsan-de paoche*  
 Zhangsan-DE red    race.car    red    Zhangsan-DE race.car  
 ‘Zhangsan’s red race car’    ‘Zhangsan’s red race car’
- c. *Zhangsan-de na-liang paoche*    d. *na-liang Zhangsan-de paoche*  
 Zhangsan-DE that-CL race.car    that-CL Zhangsan-DE racecars  
 ‘that race car of Zhangsan’s’    ‘that race car of Zhangsan’s’
- e. *na-liang hongse de paoche*    f. *hongse de na-liang paoche*  
 that-CL red    race.car    red    that-CL race.car  
 ‘that red race car’    ‘that red race car’
- (38) a. *John’s red race car*    b. *\*red John’s race car*  
 c. *\*John’s that race car*    d. *\*that John’s race car*  
 e. *that red race car*    f. *\*red that race car*

The account proposed is that possessors and demonstratives in DP languages are located in the DP projection and are positioned higher than adjectives, which may be NP-adjoined. In NP languages, possessors, demonstratives, and adjectives, are adjoined in an NP. There are then no syntactic constraints on their order.

However, it is not true that there are no syntactic constraints on the order of these elements. For instance, Chinese must have demonstratives followed by numerals, in turn by classifiers, and then by nouns (see (39) below).<sup>8</sup> The order is fixed. Flexibilities only lie in the possibility of possessors and adjectives preceding or following demonstratives. However, this is due to the fact that Chinese is N-final within noun phrases, in contrast to the mixed possibilities in English. For possessives, English can have “his legs” and “the legs of the table”. The latter has the genitive at the NP level. Chinese simply places all genitives and modifiers in the NP and DP level before the N and D – ‘table’s legs’, for instance. In addition, Larson and Takahashi (2007) note that two different domains where adjectives can appear need to be distinguished – DP vs. NP. The domain difference yields different word orders, and corresponding semantic differences – Stage-level vs. Individual-level. Chinese also makes the distinction. Relative clauses (RC) in this language have been described as showing the distinction of what are termed as restrictive vs. non-restrictive, or referential vs. descriptive (Chao 1968, Hsieh 2005, Huang 1982, Larson 1998, Del Gobbo 2003, Lu 1998, a.o.). Hsieh (2005) specifically argues for the same Stage-level and Individual-level distinction in Chinese as in English.

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<sup>8</sup>This contrasts with Japanese, which allows Num+Cl expressions before demonstratives. In addition, pronominal Num+Cl expressions in Japanese requires the modification marker *no* but not requiring such a marker *de* in Chinese. See section 4.8 for more contrasts between Chinese and Japanese.

- (39) a. [<sub>RC</sub> *zuotian meiyou lai de*] *na-ge* [<sub>RC</sub> *hen xihuan shang ke de*]  
 yesterday not come DE that-CL very like go class DE  
*xuesheng jiao Zhangsan.*  
 student call Zhangsan  
 ‘That student who likes to come to class very much who didn’t  
 Come yesterday is called Zhangsan.’
- b. \* [<sub>RC</sub> *hen xihuan shang ke de*] *na-ge* [<sub>RC</sub> *zuotian meiyou lai de*]  
 very like go class DE that-CL yesterday not come DE  
*xuesheng jiao Zhangsan.*  
 student call Zhangsan
- (40) [<sub>DP</sub> RC [<sub>NP</sub> [ RC N ] ] ]  
 S-LEVEL I-LEVEL

The fact that modifiers in Chinese consistently appear before their modifiees in noun phrases make it appear that Chinese has freer word ordering compared with English. The DP and NP modifiers in English, occurring at different levels but may be prenominal or postnominal, correspond to modifiers in different prenominal positions in Chinese, correlated with different interpretations. The bottom line is that Chinese has similar degrees of freedom or restriction in the ordering of modifiers within noun phrases as English. Indeed, the fact observed in the literature such as Tang 1990, Li 1998, 1999 regarding the strict ordering of constituents within noun phrases as [pronoun + demonstrative/ quantifier + numeral + classifier + noun] cannot be captured by an NP analysis with all prenominal constituents as adjunctions.

- (41) a. *ta zhe-ge ren*  
 he this-CL person  
 ‘him this person’
- b. *tamen (na) san-ge xuesheng*  
 they that three-CL student  
 ‘them those three students’
- c. *tamen mei-ge xuesheng*  
 they every-CL student  
 ‘them every student’

#### 4.7 Binding

Due to the postulation of adjunction structures for prenominal constituents in NP languages, in contrast to DP languages, a possessor is adjoined and c-commands outside the NP, in contrast to a possessor in a DP language occupying the Spec of D position and not c-commanding outside the noun phrase. Cheng uses an example like the following to show that Chinese behaves like an NP language.

- (42) \**ta<sub>i</sub> de san-bu dianying rang Li-An<sub>i</sub> zhuan-le henduo qian.*  
 he DE three-CL movie let Li-An earn-LE much money

‘His three movies let Li-An earn much money.’

However, Huang and Lin (2016) argue that the coreference relation between a pronoun and a name in Chinese is not subject to a simple c-command condition. Instead, the relation obeys a phase-c-command non-coreference rule: a pronoun may not be coindexed with an R-expression in its phase-c-command domain. That is, the object of a preposition and the subject of a sentential subject cannot be coreferential with a name c-commanded by the PP or the sentential subject.

- (43) \**wo ti ta<sub>i</sub> xiu hao le Zhangsan<sub>i</sub> de chezi*  
 I for him fix well LE Zhangsan DE car  
 ‘I fixed Zhangsan<sub>i</sub>’s car for him<sub>i</sub>.’
- (44) \**[ta<sub>i</sub> neng-bu-neng lai] dui Zhangsan<sub>i</sub> mei guanxi*  
 he can-not-can come to Zhangsan no matter  
 ‘Whether he can come or not doesn’t matter to Zhangsan.’

The phase-c-command rule, not the absence of a DP projection captures the contrast between the two above and the following ones that involve one more layer of possessors, because an NP analysis treating possessors as adjunction cannot distinguish layers of possessors, which would simply be single or multiple layers of adjunction structures.

- (45) *wo ti ta<sub>i</sub> de mama xiu hao le Zhangsan<sub>i</sub> de chezi*  
 I for he DE mother fix well LE Zhangsan DE car  
 ‘I fixed Zhangsan<sub>i</sub>’s car for his<sub>i</sub> mother.’
- (46) *[[ta<sub>i</sub> de mama] neng-bu-neng lai] dui Zhangsan<sub>i</sub> mei guanxi*  
 he DE mother can-not-can come to Zhangsan no matter  
 ‘Whether or not his mother can come does not matter to Zhangsan.’
- (47) *ta<sub>i</sub> de pengyou de san-bu dianying rang Li-An<sub>i</sub> zhuan-le henduo qian.*  
 he DE friend DEthree-CLmovie let Li-An earn-LE much money  
 ‘His friend’s three movies let Li-An earn much money.’

#### 4.8 Summary

Briefly summing up, all the criteria discussed above fail to classify Chinese as an NP language. They actually point to the contrary. Further note that pronouns, generally assumed to occupy the D position (the insight of Postal 1966), are frequently used in Chinese, and they behave like typical pronouns in recognized DP languages such as English. Pronouns in Chinese can have all the functions or features normally associated with a D, such as definiteness, identifiability, deixis (see, for example, a recent work as in Syed 2017). In addition to having all the properties of English pronouns, pronouns in Chinese behave even more consistently according to their position at D. For instance, expressions like *ta yige xuesheng* ‘him one student’ are common (which are absent in English), realizing the structure [D + Num + Cl + N]. Moreover, even though Chinese and Japanese

both are claimed to be NP languages by Bošković and Cheng, Chinese pronouns seem to behave differently from Japanese ones. For instance, a cursory examination suggests that the two languages differ in the frequency of pronoun use. An obvious example involves greetings. Common Chinese greetings use pronouns, such as *ni-zao* ‘(good) morning to you’, *ni-hao* ‘you-fine (how are you)’. In contrast, Japanese greetings rarely use pronouns. Roberts (2017) states that Japanese simply lacks all forms of pronominal clitics and agreement, and the *daimishi*, which typically translate English (or Romance) pronouns, are in fact probably nouns. Japanese does not make use of agreement or  $\phi$ -features (e.g., Fukui 1986, Kuroda 1988, Saito 2007). In contrast, Chinese uses  $\phi$ -features to a certain extent. For instance, Chinese pronouns of all persons in singular or plural can be used with *ziji* ‘self’ to create anaphors; whereas Japanese uses *zibun* ‘self’ or *zibunzixin* ‘self-self’. In addition, as noted in Li (2007a), there are other important differences between these two languages in the ordering and constituency within noun phrases. For instance, Japanese requires demonstratives to be followed by the modification marker *no* but the corresponding modification marker *de* in Chinese is disallowed with demonstratives. Japanese pronominal Num+Cl expressions are also followed by the modification marker *no*. Chinese uses *de* only when the Num+Cl expressions are modifiers or are focused information (e.g., Li 2013).

### 5 Recasting the DP/NP proposal

As shown in section 3, Li’s (2007a) DP vs. NP proposal more adequately captures the similarities and differences between Chinese and Japanese null arguments. Chinese indeed should be a DP language, contra the claim by Bošković and Hsieh (2012), and Cheng (2013), etc., as demonstrated in section 4. Li’s proposal relies on the concept of a TEC; namely, if an empty pronoun is not possible in a position, then that position should be truly empty, receiving its interpretation via copying from the antecedent in the context at LF (Li 2014). A TEC as the last resort is not available in the subject position, which can be an empty pronoun, *pro*/PRO. Strictly speaking, the concept of a TEC is not new because an LF approach to argument ellipsis also places an unidentified *e* in the syntactic position where an argument is missing, awaiting for copying of materials from the antecedent at LF. The copied materials can be a clause or a noun phrase as discussed in Saito 2007. In other words, Chinese null objects can be analyzed as argument ellipsis via LF copying as in Saito (2007, 2016).

Two further issues have been discussed regarding this analysis in Li (2014). One is why such an LF argument ellipsis derivation is not available to subjects in Chinese. To answer this question, Li adopts the claim by Haider (2010, chapter 2; 2012, chapter 4) that EPP features are characteristic of VO languages, not OV languages. Japanese is clearly an OV language. Chinese can be classified as a VO language (cf. the debate on whether Chinese is a VO or OV language, summarized in Li 1990, for instance. See Djamouri et al. 2013 for the claim that Chinese has been a VO language since the earliest attested documents in the 14th-11th c. BC up

to Modern Mandarin.). An EPP feature requires the Spec of TP position to be occupied by a (null) pronoun, a DP with the D feature checking off the EPP feature. The EPP feature needs to be checked off in narrow syntax. Argument ellipsis, with *e*/TEC whose content will not be filled till LF, cannot satisfy the EPP requirement. This derives the noted subject/object asymmetry in Chinese and the contrast between Chinese and Japanese.

The other point discussed in Li (2007b, 2014) is that a null object in Chinese is possible only when a verb can take a nominal object. If a verb only takes a clausal object, the object cannot be null. The restriction is not observed in Japanese. Li suggests that a TEC needs to be visible (its presence visible in syntax) and a Case feature serves the purpose. Accordingly verbs not assigning Case do not allow their objects to be null, such as *yimei* ‘think’, *cai* ‘guess’, *shitu* ‘attempt’, etc. Case in Japanese is a different matter due to its systematic use of morphological case markers.

However, the current insightful typological study of null arguments by Ian Roberts (2017, USC class lectures) suggests an alternative. In the following limited space, I will very briefly sketch Roberts’ typology and his analysis of Chinese.

Building on Holmberg (2010), Roberts and Holmberg (2014), Barbosa (2017), etc., Roberts claims that all empty pronouns cross-linguistically have essentially the same structure, with the highest projection headed by D. Languages may differ in whether they have determiners (D) with  $\phi$ -features in the D position. D can or cannot be incorporated to T or V, according to their feature compositions. If a T/V has all the features contained in D, D can be incorporated to the T/V, deriving null subjects/null objects. If T or V does not have rich enough  $\phi$ -features and D has rich  $\phi$ -features, incorporation cannot take place. Spell out is needed, resulting in non-*pro*-drop languages. D probably is not present in radical pro drop languages, such as Japanese. Languages like Finnish are partial null subject languages. Their T has rich enough  $\phi$ -features but not D. Their V does not have the appropriate  $\phi$ -features. Null subjects are possible due to the incorporation of D to T (D has a subset of  $\phi$ -features T has, allowing incorporation). Null objects would be derived by other means such as topicalization, VP-ellipsis stranding V. However, Chinese null objects have been shown to be a true case of null arguments (argument ellipsis). Therefore, Roberts suggests that Chinese is a mixed type language: subjects behave like partial null subject languages and objects behave like radical pro drop languages. To make sense of such a mixture, one can assume that Chinese allows both DPs and NPs. The EPP requires a DP in the subject position. An object can be an NP. The observed subject/object asymmetry is derived.

Roberts’ important study is designed to capture cross-linguistic differences in the distribution and interpretation of null arguments via variations in formal features. What makes Chinese stand out is its combination of an EPP requirement and supposedly a T, not V, with appropriate  $\phi$ -features (partial null subject language). This echoes the agreement approach to null arguments, which has its challenges, as briefly described in section 3.1. In addition, the assumption that



Chinese allows both DPs and NPs needs to be re-considered according to the discussion in section 4.

Nonetheless, we may adjust the analysis slightly and avoid the challenges. Suppose Chinese noun phrases are consistently DPs despite the lack of articles; and Japanese, NPs. In other words, noun phrases in Chinese have a D projection, but not in Japanese. Japanese behaves like any radical pro-drop languages, allowing null subjects and null objects equally. In contrast, a null D projection is present in Chinese. The D is not incorporated to T because T is impoverished in Chinese. However, a DP with a null D is a minimal pronoun (Krazter 2009, Landau 2011, Zhang 2016, among others). Adopting Zhang's (2016) analysis for minimal pronouns, they are raised to the clause-peripheral position, turning the clause into a predicate – derived predicate. The derived predicate is predicated of a higher argument. The movement is subject to a minimality condition; therefore, only a subject is moved and an object does not. This derives the fact that subjects are obligatorily controlled (Tomioka 2014). On the other hand, it is plausible to suggest that a null D in the object position can be incorporated to V to check off features. Recall that a null object argument in Chinese is possible only when the verb can take a DP object. If a verb only takes a clause as its object, a null argument is not possible. Li's account resorts to the requirement of the verb assigning Case to the null object. Recast this proposal along the lines of Roberts' analysis, one may claim that some verbs in Chinese carry a D feature requiring a DP object to check off the D feature, deriving the constraint against null objects with verbs that only take clausal complements.

Such an analysis does not need stipulations such as the presence and checking of an EPP feature. It also consistently assigns a noun phrase in Chinese a DP structure, not having to be concerned about when an NP structure is possible. The only stipulation is some verbs carrying a D feature, which is useful to capture the fact that only noun phrases, not clauses, can be null objects in Chinese.<sup>9</sup>

## 6 Conclusion

This paper discusses the important empirical generalizations regarding null arguments in Chinese, in contrast to Japanese. Comparison of the available accounts suggests that a more adequate approach is to assign a Chinese noun phrase a DP structure, and a Japanese one, NP structure. Chinese as a DP language is supported if we consider carefully the DP/NP distinguishing criteria by Bošković described in section 4. We have shown how the DP vs. NP approach can be implemented to capture the subject/object asymmetry in Chinese null arguments, the obligatory control on Chinese null subjects, and the contrast between Chinese

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<sup>9</sup> This analysis is reminiscent of the lexical and antecedent government requirement on empty categories in Government and Binding theory (Chomsky 1985, Rizzi 1990, among others). Aoun and Li (1989) note that subjects in Chinese are not lexically governed but verbs do lexically govern their objects.

and Japanese null arguments. The implementation is represented by Li (2007a, 2014) and a proposal based on Roberts' current work. The latter is especially promising because it allows us to see more clearly the factors defining and distinguishing different types of languages in regard to null arguments. Further investigation on languages that exhibit similar subject/object asymmetries like Chinese would be fruitful, such as Bangla, which is also a language without articles, showing subject/object asymmetry as in Chinese null arguments, and is argued to be a DP language (Simpson and Syed 2016).

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