

# Passing On the Contrast: Systematic Symmetric Contrast in Subordinate Gapping-like Ellipsis in Chinese\*

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## Abstract

Gapping-like ellipsis in Mandarin Chinese differs from canonical English gapping in that it may appear in subordinate constructions, where besides the parallelism held between the non-gapped and the gapped clauses, that at higher structural levels seems also necessary. Built on Roothian theory of focus interpretation, this paper develops a systematic symmetric contrast condition which in effect passes on the symmetric contrast established by ellipsis licensing condition, so as to capture the requirement of higher level parallelism.

## 1 Introduction

It has been argued by many that Mandarin Chinese has an elliptical construction reminiscent of canonical English gapping (Ai 2014; Li 1988; Paul 1999; Tang 2001; Wu 2002), referred to here as *gapping-like ellipsis*. The apparent likeness between the two is illustrated in (1), and because of this likeness, I will follow the standard terminology of gapping to refer to the different parts of both constructions, as annotated in (1b) (slightly adapted from Lin 2002: 10).

- (1) a. Zhangsan chi-le san-ge pingguo, Lisi — si-ge juzi  
Zhangsan eat-ASP three-CL apple Lisi four-CL orange  
'Zhangsan ate three apples, and Lisi four oranges.' (Li 1988: 41)
- b. Max ate the apple, and Sally — the hamburgers  
CORRELATE ANTECEDENT CORRELATE REMNANT GAP REMNANT  
TRIGGER TARGET
- (Jackendoff 1971: 21)

Having said this, what have been attracting the attention of the researchers over the years lie in the ways gapping-like ellipsis differs from gapping. Indeed, gapping-like ellipsis seems to be susceptible to a number of restrictions unknown to its English counterpart (for discussion see Cao 2014); for instance, its second nominal remnant is usually a numeral of the form NUMBER-CLASSIFIER NOUN (e.g., *san-ge pingguo* 'three-CL apples' in (1a)).

But among other things, it is the relative freedom to appear in subordinate constructions which distinctively sets gapping-like ellipsis apart canonical gapping. As illustrated in (2) and (3), gapping has long been known to be limited to coordinate constructions (see among others

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Gengel 2013; Hankamer 1979; Jackendoff 1971; Johnson 2009; Sag 1976), but gapping-like ellipsis is not (Ai 2014; Tang 2001; Wei 2011; Wu 2002).<sup>1</sup>

- (2) a. *Target a subject*  
 \*Alfonse ate the rice, and [that Harry — the beans] is fantastic (Hankamer 1979: 21)
- b. *Target an object*  
 \*Alfonse stole the emeralds, and I think [that Muggsy — the pearls] (ibid.: 19)
- c. *Target in a complex nominal*  
 \*Alfonse ate the rice, and I was stunned by [the fact that Harry — the beans] (ibid.: 21)
- d. *Target in an adverbial*  
 \*Sam played tuba [whenever Max — sax] (Jackendoff 1971: 22)
- (3) a. *Target a subject*  
 Zhangsan he-le liang-bei hongjiu, [wo — yi-bei pijiu] dangran keyi  
 Zhangsan drink-ASP two-glass wine I one-glass beer certainly okay  
 ‘Zhangsan drank two glasses of wine, and that I drink one glass of beer is certainly okay.’
- b. *Target an object*  
 Zhangsan he-le yi-bei pijiu, wo tingshuo [Lisi — liang-bei hongjiu]  
 Zhangsan drink-ASP one-glass beer I hear Lisi two-glass wine  
 ‘Zhangsan drank one glass of beer, and I heard that Lisi drank two glasses of wine.’
- c. *Target in a complex nominal*  
 Zhangsan he-le yi-ping pijiu, wo tingshuo-le [Lisi — liang-ping hongjiu de  
 Zhangsan drink-ASP one-bottle beer I hear-ASP Lisi two-bottle wine DE  
 xiaoxi]  
 news  
 ‘Zhangsan drank one bottle of beer, and I heard the news that Lisi drank two bottles of wine.’
- d. *Trigger in an adverbial*  
 ?[yinwei Zhangsan he-le yi-bei hongjiu], suoyi Lisi — yi-bei pijiu  
 because Zhangsan drink-ASP one-glass wine so Lisi one-glass beer  
 ‘Because Zhangsan drank one glass of wine, so Lisi drank one glass of beer.’

Despite all the ways given in (3) that the target or trigger of a gapping-like ellipsis structure can be embedded, the acceptability of subordinate gapping-like ellipsis varies as soon as we begin to exhaust the possible embedding patterns, as noted in Wei 2011:

- (4) a. *Trigger a subject*  
 \*[Laowang chi-le wu-wan fan] hen bukesiyi, Laoli — shi-ge lizi  
 Laowang eat-ASP five-bowl rice very unbelievable Laoli ten-CL pear  
 ‘That Laowang ate five bowls of rice is unbelievable, and Laoli ate ten pears.’ (Li 1988: 27)
- b. *Trigger an object*

<sup>1</sup>As adverbial clauses generally precede the main clauses in Chinese (Gasde and Paul 1996; Lin 2005), the exact counterpart of (2d) is hard to reproduce. According to authors like Gasde and Paul and Lin, even the cause clause headed by *yinwei* ‘because’ should be analyzed as the main clause when appearing after the effect clause. I assume this is indeed the case, though nothing in the present theory really hinges on this choice.

?\*[Zhangsan zhidao [Laowu he-le liang-ping pijiu]], Laoli — yi-ping hongjiu  
 Zhangsan know Laowu drink-ASP two-bottle beer Laoli one-bottle wine  
 ‘While Zhangsan knows that Laowu drank two bottles of beer, Laoli drank one bottle of wine.’

c. *Trigger an object, target an object*

Wang-xiansheng huaiyi [Laoli tou-le wushi-kuai qian], Wang-taitai faxian  
 Wang-mister suspect Laoli steal-ASP fifty-dollar money Wang-mistress find.out  
 [Laozhang — ershi-kuai (qian)]  
 Laozhang twenty-dollar money  
 ‘Mr. Wang suspected that Laoli stole fifty dollars, and Mrs. Wang found out that Laozhang stole twenty dollars.’ (Wei 2011: fn. 4)

d. *Trigger an object, target a subject*

\*[Zhangsan zhidao [Laowu he-le liang-ping pijiu]], [Laoli — yi-ping hongjiu]  
 Zhangsan know Laowu drink-ASP two-bottle beer Laoli one-bottle wine  
 hen qiguai  
 very strange  
 ‘While Zhangsan knows that Laowu drank two bottles of beer, that Laoli drank one bottle of wine is strange.’

Meanwhile Wei (2011) observes that the possibility of gapping-like ellipsis in subordinate clauses might have something to do with the “degree” of the contrast between the second remnant in the target clause and its correlate in the trigger. For example, in a rough but intuitive sense, the contrast between the boldfaced nominals in (5a) “outweighs” the comparable contrast in (5b).

- (5) a. \*[Wang-xiansheng mai-le **yi-shuang pixie**], yinwei Wang-taitai — **san-jian**  
 Wang-mister buy-ASP one-pair shoe because Wang-mistress three-CL  
**yifu**  
 dress  
 ‘Mr. Wang bought a pair of shoes, because Mrs. Wang bought three dresses.’  
 (Li 1988: 69)
- b. ?[Wang-xiansheng mai-le **yi-shuang pixie**], yinwei Wang-taitai — **liang-shuang**  
 Wang-mister buy-ASP one-pair shoe because Wang-mistress two-pair  
**(pixie)**  
 shoe  
 ‘Mr. Wang bought a pair of shoes, because Mrs. Wang bought two pairs (of shoes).’  
 (Wei 2011: 56)

The question thus arises what is the true generalization of the patterns facing us, and how we should account for it with the familiar devices for addressing ellipsis in general. In this paper I follow a PF-deletion approach to the syntax of gapping-like ellipsis in Chinese (see Cao 2014 for discussion on alternative approaches). Specifically, I assume the ellipsis remnants move into specifiers in the information structure layer (e.g., SpecTopP, SpecFocP; see Rizzi 1997) from within the deletion site, a TP or vP which will receive null spell-out at PF (see Ai 2014; Geng 2013; Lasnik 2003; Merchant 2001; Jayaseelan 1990, 2001).<sup>2</sup> (Part of) the target clause will thus have the structure in (6a) or (6b):

<sup>2</sup>For the TP-internal information structure layer in Chinese, see Ernst and Wang 1995; Hsu 2008; Paul 2002, 2005.

- (6) a.  $[\text{TopP } \text{XP}_1 [\text{FocP } \text{XP}_2 [\text{TP} \dots \text{t}_1 \dots \text{t}_2 \dots]]]$  *TP-deletion*  
 b.  $[\text{TopP } \text{XP}_1 [\text{FocP } \text{XP}_2 [\text{vP} \dots \text{t}_1 \dots \text{t}_2 \dots]]]$  *vP-deletion*

It is widely accepted that the “deletion” in question must be licensed by some identity condition (typically a semantic one) that characterizes the parallelism between the trigger and the target (e.g., Merchant 2001). Regardless of the implementation details, however, any licensing condition as such alone can say little about the situations we have briefly seen; insofar as our concern is limited *only* to the parallelism between the trigger and the target themselves, the examples in (3)-(5) are all equally licensed in exactly the same way the standard example in (1) is. Thus given the theoretical framework adopted here, the usual ellipsis licensing condition needs to be extended in a way or another, depending on what our generalization of data will eventually turn out to be.

In this paper I will show my observation in Cao 2014 that in subordinate gapping-like ellipsis, besides the parallelism between the trigger and the target clauses (call it the *base parallelism*), those between their containing clauses are likewise necessary. Based on Rooth’s (1992a,b) theory of focus interpretation, I will show the higher level parallelism can be naturally captured by the notion of *systematic symmetric contrast*, which “passes on” the *symmetric contrast* embodied in the base parallelism by means of interpreting focus in a cyclic fashion. Starting with a discussion of a previous (and to my knowledge, the only) proposal on our topic in section 2, I then move on to my generalization and analyses in section 3. In section 4, I see to a tentative revision of the theory developed in section 3. Section 5 concludes the paper.

## 2 A Previous Proposal: Wei 2011

Wei argues that besides the base parallelism pertaining to gapping-like ellipsis sentences in general, those in subordinate structures are further governed by the requirement of *minimal contrastive focus* (or simply *minimal contrast*), which serves to reduce to the minimum the degree of contrast between the second ellipsis remnant and its correlate (see (5)).

In Wei’s proposal, Merchant’s (2001: 38) focus condition on ellipsis is adapted as (7) to capture the base parallelism.

- (7) *Wei’s Focus Condition on Ellipsis*  
 A verbal  $\alpha$  can be deleted only if  $\alpha$  is contained in a CP that is *e-GIVEN*. (Wei 2011: 73)

Merchant devises *e-GIVENNESS* as incorporating bidirectionality of entailment into Schwarzschild’s (1999) *GIVENNESS*, a technical notion originally proposed to regulate F(ocus)-marking. Definitions of these notions and the related are provided in (8).

- (8) a. *E-GIVENNESS*  
 An expression E counts as *e-GIVEN* iff E has a salient antecedent A, and modulo  $\exists$ -type shifting,  
 (i) A entails  $F\text{-clo}(E)$ , and  
 (ii) E entails  $F\text{-clo}(A)$ . (Merchant 2001: 26)  
 b. *GIVENNESS*  
 An expression E counts as *GIVEN* iff it has a salient antecedent A and modulo  $\exists$ -type shifting (= existentially binding undischarged arguments), A entails the *F-closure* of E. (Schwarzschild 1999: 151)  
 c. *GIVENNESS Constraint on F-marking*  
 If a constituent is not F-marked, it is *GIVEN*. (ibid.: 155)

d. *F-closure*

The F-closure of  $\alpha$  (written as  $F\text{-clo}(\alpha)$ ) =<sub>def</sub> the result of replacing F-marked phrases in  $\alpha$  with variables and existentially closing the result, modulo  $\exists$ -type shifting.

(ibid.: 150)

On the other hand, Wei states as follows his requirement of minimal contrast, applicable only to gapping-like ellipsis in subordinate structures.

(9) *Minimal Contrastive Requirement*

Contrast focus should be as minimal as possible within a subordinate gapping[-like ellipsis].<sup>3</sup> (Wei 2011: 71)

What is special about Wei's theorizing is that he considers both the focus condition in (7) and the minimal contrast requirement in (9) violable: violation of either degrades an ellipsis sentence, and that of both wrecks it. The following examples will help illustrate how the analysis sketched here works.

(10) a. *Target an object*

[Wang-xiansheng]<sub>F</sub> mai-le [yi]<sub>F</sub>-shuang pixie, wo tingshuo [[Wang-taitai]<sub>F</sub> —  
Wang-mister buy-ASP one-pair shoe I hear Wang-mistress  
[liang]<sub>F</sub>-shuang pixie]  
two-pair shoe

'Mr. Wang bought one pair of shoes, and I heard that Mrs. Wang bought two.'

b. *Trigger an adverbial*

?[[Wang-xiansheng]<sub>F</sub> mai-le [yi]<sub>F</sub>-shuang pixie], yinwei [Wang-taitai]<sub>F</sub> — [liang]<sub>F</sub>  
Wang-mister buy-ASP one-pair shoe because Wang-mistress two  
-shuang pixie  
-pair shoe

'Mr. Wang bought one pair of shoes, because Mrs. Wang bought two pairs (of shoes).'

(= (5b))

c. *Trigger an adverbial*

\*[[Wang-xiansheng]<sub>F</sub> mai-le [yi]<sub>F</sub>-[shuang]<sub>F</sub> [pixie]<sub>F</sub>], yinwei [Wang-taitai]<sub>F</sub> —  
Wang-mister buy-ASP one- pair shoe because Wang-mistress  
[san]<sub>F</sub>-[jian]<sub>F</sub> [yifu]<sub>F</sub>  
three-CL dress

'Mr. Wang bought one pair of shoes, because Mrs. Wang bought three dresses.'

(= (5a))

<sup>3</sup>Wei argues that the "weight" of focus on a number is lighter than that on a classifier or a noun, and thus illustrates his minimal contrastive requirement exclusively with minimal pairs of which the better one contrasts two numbers, and the worse one two classifiers or nouns. This is based on his claim that of all possible contrasting patterns of NUMBER-CLASSIFIER NOUN expressions, only that which contrasts the number alone can introduce NP-ellipsis in Chinese, but the claim is not empirically supported by examples like the following one:

- (i) Zhangsan you yi-ge nüpengyou, Lisi you yi-da —  
Zhangsan have one-CL girlfriend Lisi have one-dozen  
'Zhangsan has one girlfriend, and Lisi has dozens of girlfriends.'

Furthermore, even if the claim was true, it would remain unclear why it should relate to the weight of focus on certain elements. Thus in what follows I will illustrate the minimal contrast requirement with examples that actually differ in the number of F-markers.

Let us assume in the above examples contrastive foci are marked as indicated. (10a) obeys the focus condition in (7), for the target CP containing the deletion site [<sub>TP</sub> *Wang taitai mai-le liang-shuang pixie*] ‘Mrs. Wang bought two pairs of shoes’ is e-GIVEN with respect to the trigger [<sub>CP</sub> *Wang xiansheng mai-le yi-shuang pixie*] ‘Mr. Wang bought one pair of shoes’; indeed, given the relevant calculations in (11) (with the subscripts A and E indicating the trigger and the target), the trigger entails the F-closure of the target and vice versa (modulo  $\exists$ -type shifting).

- (11) a.  $\exists\text{-clo}(\text{CP}_A) = \exists x$  (Mr. Wang bought  $x$ ,  $x$  a sum of pairs of shoes and 1 in number)  
 b.  $\text{F-clo}(\text{CP}_A) = \exists n, x, y$  ( $y$  bought  $x$ ,  $x$  a sum of pairs of shoes and  $n$  in number)  
 c.  $\exists\text{-clo}(\text{CP}_E) = \exists x$  (Mrs. Wang bought  $x$ ,  $x$  a sum of pairs of shoes and 2 in number)  
 d.  $\text{F-clo}(\text{CP}_E) = \exists n, x, y$  ( $y$  bought  $x$ ,  $x$  a sum of pairs of shoes and  $n$  in number)

The minimal contrast requirement in (9) is also observed, for in (10a) the number alone bears the contrast. As neither condition is violated, (10a) is correctly predicted to be grammatical.

(10b) minimally differs from (10a) in that the contents of the trigger and the target clauses stay unchanged—so the minimal contrast requirement in (9) is satisfied, whereas the target clause is now headed by a cause-effect operator *yinwei* ‘because’. Wei takes the latter to be the reason why (10b) violates the focus condition in (7): this operator (which is assigned its usual denotation, a relation between two propositions; see e.g., Sæbø 2011) contributes to the target clause a piece of semantics not present in the trigger, as in (12).

- (12) a.  $\exists\text{-clo}(\text{CP}_E) = \exists p, x$  R(Mrs. Wang bought  $x$ ,  $x$  a sum of pairs of shoes and 2 in number)( $p$ )  
 b.  $\text{F-clo}(\text{CP}_E) = \exists p, n, x, y$  R( $y$  bought  $x$ ,  $x$  a sum of pairs of shoes and  $n$  in number)( $p$ )

Since the relevant closures of the trigger clause—though embedded—remain the same as in (11), and (11a) does not entail (12b), the target clause in (10b) is not e-GIVEN and not licensed by the focus condition to elide. As one of the two conditions is violated, (10b) is expected to exhibit a certain degree of deviance.

(10c) aligns with (10b) structure-wise, in violation of the focus condition in (9), and because it makes three pairs of contrast between the second ellipsis remnant and its correlate, the minimal contrast requirement in (7) is also violated. Thus (10c) is further degraded in comparison with (10b).

At first glance Wei’s analysis seems to fare well, but a closer examination reveals it is both theoretically and empirically problematic. Among other things, making a focus condition on gapping-like ellipsis in general violable owes us an account for the most basic facts such a condition is supposed to capture: the gapped verb must be identical with its antecedent, be it in a simple or a subordinate environment. It can be easily checked (assuming any elided element is nonfocal) that the gaps in (13) cannot be interpreted as *mai-le* ‘buy-ASP’, as suggested by the translation lines.

- (13) a. \*Zhangsan chi-le san-ge pingguo, Lisi — si-ge pingguo  
 Zhangsan eat-ASP three-CL apple Lisi four-CL apple  
 ‘Zhangsan ate three apples, and Lisi bought four apples.’  
 b. \*Zhangsan chi-le san-ge pingguo, wo tingshuo [Lisi — si-ge pingguo]  
 Zhangsan eat-ASP three-CL apple I hear Lisi four-CL apple  
 ‘Zhangsan ate three apples, and I heard that Lisi bought four apples.’

However, once the focus condition reclaims its inviolability, the grammatical status of (10b) will be left unexplained. Note that the ways Wei applies this condition are also doubtful. We have



seen the lack of e-GIVENNESS in case of a trigger or a target headed by *yinwei* ‘because’ is attributed to the semantic contribution of the operator *yinwei* itself. To extend this analysis to ill-formed examples involving a subject trigger or target, Wei assumes there is a factive operator to blame. However, this treatment rules out not only the ungrammatical example in (14a) but also the good one in (14b).

- (14) a. *Trigger a subject*  
 \*[Laowang chi-le wu-wan fan] hen bukesiyi, Laoli — shi-ge lizi  
 Laowang eat-ASP five-bowl rice very unbelievable Laoli ten-CL pear  
 ‘That Laowang ate five bowls of rice is unbelievable, and Laoli ate ten pears.’ (= (4a))
- b. *Target a subject*  
 Zhangsan he-le liang-bei hongjiu, [wo — yi-bei pijiu] dangran keyi  
 Zhangsan drink-ASP two-glass wine I one-glass beer certainly okay  
 ‘Zhangsan drank two glasses of wine, and that I drink one glass of beer is certainly okay.’ (= (3a))

More importantly, to the extent ellipsis remnants take refuge in specifiers of C-domain projections,<sup>4</sup> it is always possible to opt for a “minimal CP” which contains the deletion site to the exclusion of every trouble making operator and which can prove its e-GIVENNESS. If so, the ungrammaticality of examples like (10a&b) or at least part of that does not result from failing the focus condition in (7).

Below let us turn to Wei’s minimal contrast requirement. Wei attempts to build this requirement on Schwarzschild’s (1999) *AVOIDF constraint* in (15) (as he actually dubs it as “AVOIDF”).

- (15) *AVOIDF Constraint on F-marking*  
 F-mark as little as possible, without violating GIVENNESS. (Schwarzschild 1999: 156)

If I am not misinterpreting, however, Wei confuses the (e-)GIVENNESS-based focus condition on ellipsis with GIVENNESS constraint on F-marking in (8c), in that his construal of (15) can be paraphrased as “F-mark as little as possible, insofar as the e-GIVENNESS condition is observed” (p. 72). Therefore, Wei’s minimal contrast requirement cannot be theoretically supported by Schwarzschild’s (1999) *AVOIDF constraint*. Also, many of the empirical data we have seen in section 1 seem to argue against the minimal contrast requirement. Particularly, there is no discernible difference in acceptability between the following examples (with irrelevant F-markers omitted):

- (16) Zhangsan he-le liang-ping hongjiu,  
 Zhangsan drink-ASP two-bottle wine  
 ‘Zhangsan drank two bottles of wine,’
- a. [wo — [yi]<sub>F</sub>-ping hongjiu] dangran keyi  
 I one-bottle wine certainly okay  
 ‘and that I drink one bottle of wine is certainly okay.’
- b. [wo — [yi]<sub>F</sub>-[bei]<sub>F</sub> hongjiu] dangran keyi  
 I one-glass wine certainly okay  
 ‘and that I drink one glass of wine is certainly okay.’
- c. [wo — [yi]<sub>F</sub>-[bei]<sub>F</sub> [pijiu]<sub>F</sub>] dangran keyi  
 I one-glass beer certainly okay  
 ‘and that I drink one glass of beer is certainly okay.’

<sup>4</sup>Though Wei has not been explicit about the syntax of gapping-like ellipsis, he does favor an account à la Jayaseelan 1990 or Ai 2014, (the latter of) which is literally the same as the syntax assumed here.

With these in mind, the minimal pair in (17a&b), which leads [Wei](#) to his requirement of minimal contrast, is thus worth our reconsideration. When comparing them with (17c) together, it becomes clear that (17a)'s sounding worse than (17b) may not lie in the increased contrast, for the acceptability of the former can also be obviously improved by introducing even more contrastive foci.

- (17) a. \*[Wang-xiansheng mai-le **yi-shuang pixie**], yinwei Wang-taitai — **san-jian yifu**  
 Wang-mister buy-ASP one-pair shoe because Wang-mistress three-CL dress  
 'Mr. Wang bought a pair of shoes, because Mrs. Wang bought three dresses.' (= (5a))
- b. ?[Wang-xiansheng mai-le **yi-shuang pixie**], yinwei Wang-taitai — **liang-shuang (pixie)**  
 Wang-mister buy-ASP one-pair shoe because Wang-mistress two-pair shoe  
 'Mr. Wang bought a pair of shoes, because Mrs. Wang bought two pairs (of shoes).' (= (5b))
- c. ?[Wang-xiansheng mai-le **yi-shuang dazhe pixie**], yinwei Wang-taitai —  
 Wang-mister buy-ASP one-pair on.sale shoe because Wang-mistress **san-jian name gui de yifu**  
 three-CL so expensive DE dress  
 'Mr. Wang bought a pair of shoes on sale, because Mrs. Wang bought three dresses which were so expensive.'

Under an explanatory reading, [Kitis \(1982\)](#) and [Bardzokas \(2012\)](#) propose, a cause-effect statement can be regarded as a hidden syllogistic argument with the explanandum and only one of the premises overtly expressed; thus a statement as such is as intelligible as the implicit premise backing up the argument is recoverable. If so, a rather intuitive explanation of the facts in (17) is suggesting itself: (17a) is severely degraded simply because to complete the argument, it is hard for us to conceive a premise compatible with our world knowledge and the context set up there. In a scene where a husband bought something on account of his wife's buying something else, a plausible premise to imagine is that thrifty as the husband might always be, still he would be tempted to *slightly* gratify his desire for goods when he learned his wife indulged herself in a shopping spree. Since the contrast in expenditure highlighted in this premise is obviously reflected in (17b&c) (one pair of shoes presumably costs less than two pairs, and so does a pair of shoes on sale in comparison with three dresses which are "so expensive"), they provide immediate clues to recovering the unuttered premise. This is not the case in (17a) (to infer that one pair of shoes costs less than three dresses requires nontrivial assumptions not available in the context), however; we get stuck in identifying the causal relation (17a) implicates to exist, and hence its anomaly. As there is evidence which disregards the minimal contrast requirement in (9), and the evidence which seemingly supports it can receive an independent pragmatics-based account, we may conclude that minimal contrast is not among the determining factors of the possibility of subordinate gapping-like ellipsis.

In sum, [Wei's](#) generalization that conditions on gapping-like ellipsis in subordinate constructions can be reduced to the base parallelism plus the minimal contrast is empirically questionable. Conceptual problems and incorrect predictions aside, [Wei's](#) theory does not really work as intended in providing us a successful account of the data we have seen so far.



### 3 Systematic Symmetric Contrast

The fact that the acceptability of gapping-like ellipsis sentences varies across configuration types of subordinate structures suggests a proper generalization of data should address the constraint on how the trigger and target can be embedded. Below I will try to show this constraint can be informally formulated as higher level parallelism between the containing clauses of the trigger and those of the target, and be more formally captured as establishing a series of systematic symmetric contrast.

#### 3.1 An Investigation of Data

At this point, two major groups of configurational types of ellipsis sentences can be distinguished according to the nature of the *minimal common containing CP* of the trigger and target clauses.<sup>5</sup> In the first group, it is of a coordinate structure (assuming the conjunction phrase has the same categorial feature as its conjuncts); in the second, it could be anything but coordination. A rougher way to put this distinction, which I will use henceforth, is that in the first group the trigger and target ultimately conjoin at some level, but in the second they do not. Let us go over the most representative data of each group in turn.

(18)-(21) illustrate subordinate gapping-like ellipsis examples where at some level the trigger and target clauses are conjoined. A matrix, subject, object, complex-nominal-contained trigger (in that order) are each paired with the same list of targets.

- (18) *Trigger a matrix*  
 Zhangsan he-le san-ping hongjiu,  
 Zhangsan drink-ASP three-bottle wine  
 ‘Zhangsan drank three bottles of wine,’
- a. *Target a matrix*<sup>6</sup>  
 Lisi — liang-ping piju  
 Lisi two-bottle beer  
 ‘and Lisi drank two bottles of beer.’
- b. *Target a subject*  
 [Lisi — liang-ping piju] buzhuweiqi  
 Lisi two-bottle beer not.surprising  
 ‘and that Lisi drank two bottles of beer is not surprising.’
- c. *Target an object*  
 Laohe tingshuo [Lisi — liang-ping piju]  
 Laohe hear Lisi two-bottle beer  
 ‘and Laohe heard that Lisi drank two bottles of beer.’
- d. *Target in an object complex nominal*  
 Laohe xiangxin [Lisi — liang-ping piju de shuofa]  
 Laohe believe Lisi two-bottle beer DE saying  
 ‘and Laohe believes the saying that Lisi drank two bottles of beer.’
- (19) *Trigger a subject*

<sup>5</sup>Z is the minimal common containing CP of X and Y iff Z is a CP that contains X and Y, and there is no Z' such that Z' a CP, Z properly contains Z' and Z' contains X and Y.

<sup>6</sup>Certainly (18a) involves a simple coordinate structure and thus should not be counted as an example of subordinate gapping-like ellipsis. I list it here merely for the completeness of exposition.

[Zhangsan he-le      san-ping      hongjiu] hen zhengchang,  
 Zhangsan drink-ASP three-bottle wine      very normal  
 ‘That Zhangsan drank three bottles of wine is normal,’

a. *Target a matrix*

\*Lisi — liang-ping piju

Lisi      two-bottle beer

‘and Lisi drank two bottles of beer.’

b. *Target a subject*

[Lisi — liang-ping piju] buzuweiqi

Lisi      two-bottle beer not.surprising

‘and that Lisi drank two bottles of beer is not surprising.’

c. *Target an object*

\*Laohe tingshuo [Lisi — liang-ping piju]

Laohe hear      Lisi      two-bottle beer

‘and Laohe heard that Lisi drank two bottles of beer.’

d. *Target in an object complex nominal*

\*Laohe xiangxin [Lisi — liang-ping piju de shuofa]

Laohe believe      Lisi      two-bottle beer DE saying

‘and Laohe believes the saying that Lisi drank two bottles of beer.’

(20) *Trigger an object*

Laowu tingshuo [Zhangsan he-le      san-ping      hongjiu],

Laowu hear      Zhangsan drink-ASP three-bottle wine

‘Laowu heard that Zhangsan drank three bottles of wine,’

a. *Target a matrix*

\*Lisi — liang-ping piju

Lisi      two-bottle beer

‘and Lisi drank two bottles of beer.’

b. *Target a subject*

\*[Lisi — liang-ping piju] buzuweiqi

Lisi      two-bottle beer not.surprising

‘and that Lisi drank two bottles of beer is not surprising.’

c. *Target an object*

Laohe tingshuo [Lisi — liang-ping piju]

Laohe hear      Lisi      two-bottle beer

‘and Laohe heard that Lisi drank two bottles of beer.’

d. *Target in an object complex nominal*

?\*Laohe xiangxin [Lisi — liang-ping piju de shuofa]

Laohe believe      Lisi      two-bottle beer DE saying

‘and Laohe believes the saying that Lisi drank two bottles of beer.’

(21) *Trigger in an object complex nominal*

Laowu xiangxin [Zhangsan he-le      san-ping      hongjiu de shuofa],

Laowu believe      Zhangsan drink-ASP three-bottle wine      DE saying

‘Laowu believes the saying that Zhangsan drank three bottles of wine,’

a. *Target a matrix*

?\*Lisi — liang-ping piju

Lisi      two-bottle beer

‘and Lisi drank two bottles of beer.’

- b. *Target a subject*  
 \*[Lisi — liang-ping piju] buzuweiqi  
 Lisi two-bottle beer not.surprising  
 ‘and that Lisi drank two bottles of beer is not surprising.’
- c. *Target an object*  
 ?\*Laohe tingshuo [Lisi — liang-ping piju]  
 Laohe hear Lisi two-bottle beer  
 ‘and Laohe heard that Lisi drank two bottles of beer.’
- d. *Target in an object complex nominal*  
 Laohe xiangxin [Lisi — liang-ping piju de shuofa]  
 Laohe believe Lisi two-bottle beer DE saying  
 ‘and Laohe believes the saying that Lisi drank two bottles of beer.’

While embedding of trigger or target clauses above has been limited to a level no deeper than the immediate constituent of matrix (or the complement of a complex nominal thus embedded), the data above have already shown us a pattern not so trivial (below “CNP” stands for “complex nominal”):

(22)

	<i>Matrix</i>	<i>Subject</i>	<i>Object</i>	<i>In Object CNP</i>
<i>Matrix</i>	✓	✓	✓	✓
<i>Subject</i>	*	✓	*	*
<i>Object</i>	*	*	✓	*
<i>In Object CNP</i>	*	*	*	✓

In (22) each row specifies the structural position of the trigger clause, and each column that of the target. The judgments on the first row show that with a matrix trigger, the resultant gapping-like ellipsis sentences are generally welcome, irrespective of how the target is embedded there. By contrast, the judgments on the diagonal apparently suggest that with an embedded trigger, structural parallelism between the trigger and the target begins to play a role.

When it comes to the subordinate gapping-like ellipsis sentences where the trigger and target clauses are not conjoined at any level, various means are there to install them into one and the same complex clause, conceivably resulting in much more complicated situations than those considered above. Fortunately, we do not have to go too far to make a simple but nonetheless useful observation.

(23) and (24) illustrate the examples where one of (minimal containing CPs of) the trigger and target clauses coincides with their minimal common containing CP, a matrix. The former is indeed reminiscent of the antecedent-contained deletion (ACD) in the discussion of VP-ellipsis (see Sag 1976), and the latter is exactly the other way around (something that might be dubbed as “ellipsis-site-contained deletion”).

(23) *Trigger coincides with the minimal common containing CP*

- a. *Target an object*  
 \*Zhangsan xiangxin [Lisi — na-ge yaoyan]  
 Zhangsan believe Lisi that-CL rumor  
 ‘Zhangsan believes that Lisi believes that rumor.’
- b. *Target in an object complex nominal*  
 \*Zhangsan xiangxin [Lisi — na-ge yaoyan de shuofa]  
 Zhangsan believe Lisi that-CL rumor DE saying

- ‘Zhangsan believes the saying that Lisi believes that rumor.’
- c. *Target a subject in an object*  
 \*Zhangsan xiangxin [[Lisi — na-ge yaoyan] hen zhengchang]  
 Zhangsan believe Lisi that-CL rumor very normal  
 ‘Zhangsan believes that that Lisi believes that rumor is very normal.’
- d. *Target an object in an object*  
 \*Zhangsan xiangxin [Laohe huaiyi [Lisi — na-ge yaoyan]]  
 Zhangsan believe Laohe suspect Lisi that-CL rumor  
 ‘Zhangsan believes that Laohe suspects that Lisi believes that rumor.’
- (24) *Target coincides with the minimal common containing CP*
- a. *Trigger in a subject complex nominal*  
 \*[na-ge tingshuo-le na-ge yaoyan de ren] — zhe-jian shi  
 that-CL hear-ASP that-CL rumor DE person this-CL thing  
 ‘That guy who heard that rumor heard this thing.’
- b. *Trigger a subject in a subject complex nominal*  
 \*[na-ge [[zhizhu xiahuai-le na-ge nanhai] hen zhengchang] de shuofa] —  
 that-CL spider shock-ASP that-CL boy very normal DE saying  
 zhe-ge nühai  
 this-CL girl  
 ‘The saying that that a spider shocked that boy was normal shocked this girl.’
- c. *Trigger an object in a subject complex nominal*  
 \*[na-ge huaiyi [Zhangsan tingshuo-le na-ge yaoyan] de ren] — zhe-jian  
 that-CL suspect Zhangsan hear-ASP that-CL rumor DE person this-CL  
 shi  
 thing  
 ‘That guy who suspected that Zhangsan heard that rumor heard this thing.’

Besides, the trigger and target clauses can be kept from intertwining with each other, as illustrated in (25).

- (25) a. *Trigger in a subject complex nominal, target in an embedded subject complex nominal*  
 ?[Zhangsan he-le wu-ping hongjiu de shi] rang [Lisi — wu-bei hongjiu  
 Zhangsan drink-ASP five-bottle wine DE thing cause Lisi five-glass wine  
 de shi] buzhiyiti  
 DE thing not.worth.mentioning  
 ‘The fact that Zhangsan drank five bottles of wine made the fact that Lisi drank five glasses of wine not worth mentioning.’
- b. *Trigger in a subject complex nominal, target in an adjunct<sup>7</sup>*  
 ?[Lisi he-le wu-bei hongjiu de shi] [bi Zhangsan — wu-ping hongjiu  
 Lisi drink-ASP five-glass wine DE thing compare Zhangsan five-bottle wine  
 de shi] geng bukesiyi  
 DE thing even.more unbelievable  
 ‘The fact that Lisi drank five glasses of wine is more unbelievable than the fact that Zhangsan drank five bottles of wine.’
- c. *Trigger an adverbial*

<sup>7</sup>For treating *bi* comparative clauses in Chinese as adjuncts, see Lin 2009; Liu 2011, 2014 among others.

- ?[yinwei Zhangsan he-le yi-bei hongjiu], (suoyi) Lisi — yi-bei pijiu  
 because Zhangsan drink-ASP one-glass wine so Lisi one-glass beer  
 ‘Because Zhangsan drank one glass of wine, Lisi drank one glass of wine.’ (= (3d))
- d. *Trigger an adverbial*
- ?[Lisi he-le yi-bei pijiu], yinwei Zhangsan — yi-bei hongjiu  
 Lisi drink-ASP one-glass beer because Zhangsan one-glass wine  
 ‘Lisi drank one glass of beer, because Zhangsan drank five one glass of wine.’

Summarizing (23)-(25) leads us to the conclusion that gapping-like ellipsis are generally banned when the trigger clause is properly contained in the target or the other way around; otherwise, insofar as the trigger and target clauses are not separated from the matrix domain by any clausal boundary, the resulting ellipsis sentences are generally degraded though acceptable. Since increased embedding depths are inevitably accompanied by burdened processing loads (even in an offline condition) and blurred judgments, I will refrain from examining data where the trigger and target clauses are not intertwining but at least one of them are further buried within immediate clausal constituents of the matrix, even if only such data can confirm whether the higher level structural parallelism of the kind previously seen holds in these cases too.

Thus I conclude our data investigation with the following generalizations of the embedding possibilities in subordinate gapping-like ellipsis sentences (those with limited embedding depths).

(26) *Constraints on Subordinate Gapping-like Ellipsis*

(Apart from the base parallelism requirement,) when the trigger and target clauses are conjoined at some level, ellipsis sentences are acceptable only if

- (i) the trigger is a matrix, or
  - (ii) the trigger and the target clauses are of equal structural positions;
- when the trigger and target clauses are not conjoined at all, ellipsis sentences are somewhat acceptable only if
- (iii) neither one of the trigger and target is contained in another.

(26i) might seem an exception to what (26ii) tries to generalize, especially if we take into consideration the fact that a matrix target does not possess a similar privilege. However, we will see shortly that all of the generalizations in (26) can receive a uniform treatment.

### 3.2 Capture the Higher Parallelism

The current proposal is based on the assumption that we should capture the higher level parallelism in very much the same way we do the base parallelism between the trigger and target clauses. The following discussion takes the latter as its starting point.

In section 2 we have seen how Merchant’s (2001) e-GIVENNESS condition can be adapted to capture the base parallelism in question (Wei 2011), but there is a minor conceptual difficulty: as noted by Reich (2007), the mutual entailment featuring in the definition of e-GIVENNESS amounts to dictating the ellipsis target and trigger to be mutually GIVEN with respect to each other. While it is quite reasonable to say an ellipsis site should be “given” by its antecedent clause, it is obscure in which sense the latter could be counted as “given” by the former—after all, Schwarzschild’s (1999) GIVENNESS is a formal spell-out of our intuitive understanding of the givenness of information, as opposed to newness.

For this reason, I turn to the notion of “symmetric contrast” in Rooth’s (1992a,b) theory of focus interpretation to capture the base parallelism. It is in effect equivalent to Merchant’s

e-GIVENNESS (e.g., Gengel 2013; Reich 2007),<sup>8</sup> while not suffering the conceptual difficulty mentioned above. The focus condition on gapping-like ellipsis adopted here is given in (27a) (see Gengel 2013; Heim 1997; Rooth 1992a,b among others), followed by relevant technical definitions.

- (27) a. *Focus Condition on Gapping-like Ellipsis*  
 $\alpha$  can be deleted only if for the C-domain projection  $XP_E$  minimally contains  $\alpha$  and anything moves out of  $\alpha$  there is some  $XP_A$  such that  
 (i)  $XP_E \sim XP_A$ , and  
 (ii)  $XP_A \sim XP_E$ .  
 b. *The Squiggle Operator  $\sim$*   
 $\alpha \sim \beta$  iff  
 (i) neither  $\alpha$  nor  $\beta$  properly contains the other, and  
 (ii)  $\llbracket \beta \rrbracket$  is or implies an element in  $\llbracket \alpha \rrbracket^f$ , and  
 (iii)  $\llbracket \alpha \rrbracket \neq \llbracket \beta \rrbracket$ . (adapted from Rooth 1992a: fn. 4, 93)  
 c. *Focus Semantic Value*  
 The focus semantics value of  $\alpha$  (i.e.,  $\llbracket \alpha \rrbracket^f$ ) =<sub>def</sub>  
 $\{\llbracket \alpha \rrbracket^h \mid h \text{ is an assignment specific to F-marked elements}\}$ .  
 (adapted from Kratzer 1991: 832)  
 (The focus semantics of an expression  $\alpha$  is the set of alternatives to  $\llbracket \alpha \rrbracket$ , obtained by substituting the constituents marked as foci for values of the appropriate type.)

Since  $\alpha \sim \beta$  is exactly the definition Rooth gives to “ $\beta$  is in contrast with  $\alpha$ ,” (27a) amounts to saying the relevant  $XP_A$  and  $XP_E$  are in symmetric contrast. Also note that for  $\beta$  to contrast  $\alpha$ ,  $\beta$  should in the first place differ from  $\alpha$ . I will return to this point later.

The example in (28) illustrates how the formal devices presented above capture the base parallelism (assuming foci are marked as indicated).

- (28)  $[_{CP_A} [\text{Zhangsan}]_F \text{ chi-le } [\text{san-ge pingguo}]_F], [_{CP_E} [\text{Lisi}]_F \text{ — } [\text{si-ge juzi}]_F]$   
 Zhangsan eat-ASP three-CL apple Lisi four-CL orange  
 ‘Zhangsan ate three apples, Lisi four oranges.’ (= (1a))

Since  $[_{CP_A} \text{Zhangsan chi-le san-ge pingguo}]$  ‘Zhangsan ate three apples’ is a proposition of the form  $x \text{ chi-le } y$  ‘ $x$  ate  $y$ ’ ( $x$  and  $y$  denote plural individuals, the same below),  $CP_E \sim CP_A$ , and since  $[_{CP_E} \text{Lisi chi-le si-ge juzi}]$  ‘Lisi ate four oranges’ is a proposition of the form  $x \text{ chi-le } y$  ‘ $x$  ate  $y$ ’,  $CP_A \sim CP_E$ . As  $CP_A$  and  $CP_E$  are symmetrically contrasting, the ellipsis is licensed by the focus condition in (27a).

We are now in a position to extend the focus condition in (27a) to capture the higher level parallelism between the containing clauses of the trigger clause and those of the target. One approach of doing this would be modifying the description of the relevant  $XP_E$  in (27a) as something like “the maximal containing CP of  $\alpha$  below the minimal common containing CP of the trigger and target,” so that we may check the high level parallelism directly. However, such a solution runs into problems when dealing with gapping-like ellipsis sentences with a matrix trigger and an embedded target, which are perfectly acceptable but lack the very symmetric contrast between the trigger and the containing clause of the target (see (26i)), as illustrated by the following example.

<sup>8</sup>Despite their apparent equivalence, the two theories are quite different in spirit. In contrast to Schwarzschild 1999, Rooth’s (1992a) theory is not about regulating F-marking, it concerns itself only with how to interpret constituents F-marked already.



- (29) *Trigger a matrix, target a subject*  
 $[_{CP_A} [Zhangsan]_F \text{he-le} \quad [_{san-ping \quad hongjiu}]_F], [_{CP_E} [[Lisi]_F \text{—} [liang-ping \text{ pijiu}]_F]$   
 Zhangsan drink-ASP three-bottle wine Lisi two-bottle beer  
 buzubeiqi]  
 not.surprising  
 ‘Zhangsan drank three bottles of wine, and that Lisi drank two bottles of beer was not surprising.’  
 (= (18b))

In (29)  $CP_A$  is not in contrast with  $CP_E$ , for  $[_{CP_A} Zhangsan \text{ he-le } san-ping \text{ hongjiu}]$  ‘Zhangsan drank three bottles of wine’ is not and does not imply a proposition of the form  $x \text{ he-le } y \text{ buzubeiqi}$  ‘that x drank y is not surprising’.

The approach shown above is characterized by interpreting the contrastive foci belonging to different syntactic levels all at once, with no regard to clausal boundaries. On the contrary, we may consider a solution that applies the focus interpretation process multiply, checking at each syntactic level the potential symmetric contrast between the containing clauses of the trigger and target pertaining to that level. More precisely, we may design a (successive) cyclic (in the sense of Chomsky 1965) focus interpretation algorithm to carry out a series of symmetric contrast checking, starting with the pair of the most deeply embedded cycles—the trigger and target clauses, up until a certain pair of cycles that can be independently specified. By making the latter specification (at least partially) sensitive to the embeddedness of the trigger, we can ensure the trigger has its special status in subordinate gapping-like ellipsis. The ideas outlined here can be formally expressed as imposing the *systematic symmetric contrast* (SSC) condition on gapping-like ellipsis. Thus I substitute the SSC condition in (30a) for the focus condition in (27a), and define SSC as in (30b).

- (30) a. *Systematic Symmetric Contrast Condition on Gapping-like Ellipsis*  
 $\alpha$  can be deleted only if for the C-domain projection  $XP_E$  minimally contains  $\alpha$  and anything moves out of  $\alpha$  there is some  $XP_A$  such that  $XP_A$  and  $XP_E$  are in systematic symmetric contrast.  
 b. *Systematic Symmetric Contrast*  
 $\alpha$  and  $\beta$  are in systematic symmetric contrast iff  
 (i)  $\alpha \sim \beta$  and  $\beta \sim \alpha$ , and  
 (ii) within the minimal common containing CP of  $\alpha$  and  $\beta$ , whenever  $\alpha$  has its immediate C-domain supercycle  $\alpha'$ ,  $\beta$  should also have its immediate C-domain supercycle  $\beta'$ , and  $\alpha'$  and  $\beta'$  are in systematic symmetric contrast.

There is a problem to solve before the recursively defined SSC can work properly. Consider the following example:

- (31) *Trigger an object, target an object*  
 $[_{CP'_A} [Laowu]_F \text{tingshuo } [_{CP_A} [Zhangsan]_F \text{he-le} \quad [_{san-ping \quad hongjiu}]_F]], [_{CP'_E} [Laohe]_F \text{tingshuo } [_{CP_E} [Lisi]_F \text{—} [liang-ping \text{ pijiu}]_F]]]$   
 Laowu hear Zhangsan drink-ASP three-bottle wine Laohe  
 hear Lisi two-bottle beer  
 ‘Laowu heard that Zhangsan drank three bottles of wine, and Laohe heard that Lisi drank two bottles of beer.’  
 (= (20c))

Assuming the indicated F-markers, it can be easily shown that in (31)  $CP_A$  and  $CP_E$  are in symmetric contrast. What about their containing clauses? Rooth (1992a) suggests the semantic effect of a focus will be neutralized once it has been interpreted. This is indeed a plausible suggestion,

(32) [CP'<sub>A</sub> [Laowu]<sub>F</sub> tingshuo [CP<sub>A</sub> Zhangsan he-le san-ping hongjiu]], [CP'<sub>E</sub> [Laohe]<sub>F</sub>  
Laowu hear Zhangsan drink-ASP three-bottle wine Laohe  
tingshuo [CP<sub>E</sub> Lisi — liang-ping piji]]  
hear Lisi two-bottle beer

I suggest what is missing here is a mechanism that allows us to F-mark  $CP_A$  and  $CP_E$  after they have been successfully interpreted for contrastive focus. To this end Selkirk's (1984, 1996) F(ocus)-projection seems to be of relevance:

- (i) F-marking of the head of a phrase licenses the F-marking of the phrase.
- (ii) F-marking of an internal argument of a head licenses the F-marking of the head.

(Selkirk 1996: 555)

(A succession of) F-projection up to phrase  $\alpha$  is triggered if focus interpretation at the level of  $\alpha$  succeeds.

(35) a. for all  $i$  such that  $0 \leq i \leq n$ ,  $(XP_A^i, XP_E^i)$  bears symmetric contrast;  
b. for all  $i$  such that  $0 \leq i < n$ ,  $(XP_A^i, XP_E^i)$  bears symmetric contrast and  $XP_A^n = XP_E^n$ ;  
c. for some  $i$  such that  $0 \leq i \leq n$ ,  $(XP_A^i, XP_E^i)$  fails to bear symmetric contrast, and  $XP_A^i \neq XP_E^i$  if  $i = n$ ;  
d.  $XP_A^n$  has its immediate C-domain supercycle (within the minimal common containing CP of  $XP_A^0$  and  $XP_E^0$ ), but  $XP_E^n$  does not.

<sup>9</sup>It would be interesting to ask if such a principle can be supported by phonological evidence. For the limited purpose of this paper, however, I will not pursue this issue here.

ever, we may take this as a “weak” violation in comparison with (35c) and (35d): in the former but not the latter two parallelism is still preserved.

We finally reach the stage to see how the current proposals uniformly derive our generalizations of constraints on subordinate gapping-like ellipsis in (26). First of all, with the trigger and target clauses conjoined somewhere, the SSC condition is trivially satisfied with a matrix trigger: in this case, the trigger does not have its supercycle, so that starting pair for symmetric contrast checking turns out to be the stopping pair, and the base parallelism would suffice to license ellipsis. For instance, (36a) is licensed just as the simple ellipsis sentence in (36b) (henceforth I will omit detailed checking of the base parallelism).

- (36) a. *Trigger a matrix, target a subject*  
 Zhangsan he-le san-ping hongjiu, [Lisi — liang-ping pijiu] buzuweiqi  
 Zhangsan drink-ASP three-bottle wine Lisi two-bottle beer not.surprising  
 ‘Zhangsan drank three bottles of wine, and that Lisi drank two bottles of beer was not surprising.’ (= (18b))
- b. Zhangsan he-le san-ping hongjiu, Lisi — liang-ping pijiu  
 Zhangsan drink-ASP three-bottle wine Lisi two-bottle beer  
 ‘Zhangsan drank three bottles of wine, and Lisi two bottles of beer.’

But if the trigger clause is embedded (and ultimately conjoined with the target), generally the SSC condition can be satisfied only if the target is of the same structural position as the trigger, as illustrated in (37).

- (37) *Trigger a subject*  
 [<sub>CP<sub>A</sub></sub> Zhangsan he-le san-ping hongjiu]<sub>F</sub> hen zhengchang,  
 Zhangsan drink-ASP three-bottle wine very normal  
 ‘That Zhangsan drank three bottles of wine is normal,’
- a. *Target a matrix*  
 \* [<sub>CP<sub>E</sub></sub> Lisi — liang-ping pijiu]<sub>F</sub>  
 Lisi two-bottle beer  
 ‘and Lisi drank two bottles of beer.’ (= (19a))
- b. *Target a subject*  
 [<sub>CP<sub>E</sub></sub> Lisi — liang-ping pijiu]<sub>F</sub> buzuweiqi  
 Lisi two-bottle beer not.surprising  
 ‘and that Lisi drank two bottles of beer is not surprising.’ (= (19b))
- c. *Target an object*  
 \*Laohe tingshuo [<sub>CP<sub>E</sub></sub> Lisi — liang-ping pijiu]<sub>F</sub>  
 Laohe hear Lisi two-bottle beer  
 ‘and Laohe heard that Lisi drank two bottles of beer.’ (= (19c))

The base parallelism is equally established in all three examples above, triggering F-projection up to the site at which focus is interpreted (i.e., CP<sub>A</sub> and CP<sub>E</sub>). They differ only in presence of parallelism between the respective containing clauses of the trigger and target. In particular, the matrix target in (37a) simply does not have the required cycle above it (see (35d)). (37b) satisfies the SSC condition by holding symmetric contrast between the containing clauses of the trigger and target (see (35a)); CP<sub>A</sub> *hen zhengchang* ‘CP<sub>A</sub> is normal’ implies a proposition of the form *p buzuweiqi* ‘p is not surprising’ (p denotes propositions, the same below), and CP<sub>E</sub> *buzuweiqi* ‘CP<sub>E</sub> is not surprising’ implies a proposition of the form *p hen zhengchang* ‘p is normal’. (37c) fails the SSC condition with the containing clauses of its trigger and target not contrasting

symmetrically (see (35c)); *Laohe tingshuo*  $CP_E$  is not and does not imply a proposition of the form *p hen zhengchang* ‘p is normal’.

At last, when the trigger and target clauses are ultimately not conjoined, the SSC condition can never be satisfied if one of them appears in another, as illustrated in (38). This is guaranteed by the semantics of the squiggle operator  $\sim$  in (27b): no expression can contrast with its proper part.

- (38) a. *Trigger contains target*  
 \*Zhangsan xiangxin [Lisi — na-ge yaoyan]  
 Zhangsan believe Lisi that-CL rumor  
 ‘Zhangsan believes that Lisi believes that rumor.’ (= (23a))
- b. *Target contains trigger*  
 \*[na-ge tingshuo-le na-ge yaoyan de ren] — zhe-jian shi  
 that-CL hear-ASP that-CL rumor DE person this-CL thing  
 ‘That guy who heard that rumor heard this thing.’ (= (24b))

Apart from these intertwining cases, the SSC condition may or may not be violated, as illustrated in (39).

- (39) a. *Trigger in a subject complex nominal, target in an embedded subject complex nominal*  
 ?[Zhangsan he-le wu-ping hongjiu de shi]<sub>F</sub> rang [Lisi — wu-bei hongjiu  
 Zhangsan drink-ASP five-bottle wine DE thing cause Lisi five-glass wine  
 de shi]<sub>F</sub> buzhiyiti  
 DE thing not.worth.mentioning  
 ‘The fact that Zhangsan drank five bottles of wine made the fact that Lisi drank five glasses of wine not worth mentioning.’ (= (25a))
- b. *Trigger an adverbial*  
 ?[yinwei Zhangsan he-le yi-bei hongjiu]<sub>F</sub>, (suoyi) Lisi — yi-bei pijiu  
 because Zhangsan drink-ASP one-glass wine so Lisi one-glass beer  
 ‘Because Zhangsan drank one glass of wine, Lisi drank one glass of beer.’ (= (3d))

Let us skip over the base parallelism. The lexical causative *rang* ‘make’ in (39a) arguably does not select a full CP complement, so that the ellipsis trigger and target will share the matrix CP as their common immediate supercycle, weakly violating the SSC condition (see (35b)). The sentence thus ends up with a marginal acceptability. On the other hand, (39b) has two parsing options—adjoining the *yinwei* ‘because’ clause outside or inside the main TP (Gasde and Paul 1996; Lin 2005)—that yield different results with respect to the SSC condition. The former option trivially satisfies the SSC condition, as the trigger clause lacks the required cycle above it; the latter weakly violates the SSC condition, as the trigger and target again have the same immediate supercycle, the matrix CP. These lines of analysis can in principle be extended to the example in (40), which motivates Wei (2011) to render his licensing condition on ellipsis violable (see section 2):

- (40) *Trigger an adverbial*  
 ?[Wang-xiansheng mai-le yi-shuang pixie], yinwei Wang-taitai — liang-shuang  
 Wang-mister buy-ASP one-pair shoe because Wang-mistress two-pair  
 pixie  
 shoe  
 ‘Mr. Wang bought one pair of shoes, because Mrs. Wang bought two pairs (of shoes).’ (= (5b))

So far the SSC condition plus the principle correlating focus interpretation and F-projection yield the desired results in licensing subordinate gapping-like ellipsis. One may note that the SSC condition is more permissive than my earlier generalizations made in structural terms and based on data with limited embedding depths ((26)); in fact, the SSC condition is only prescribing the trigger and target to be of similar structural positions up until their minimal common containing CP is reached. Beyond that, it says nothing. Thus we may expect a good ellipsis sentence with its target buried deeper than its trigger, which seems to be the case:

- (41) %Laowu tingshuo [Zhangsan he-le san-ping hongjiu], wo zhidao [Laohe tingshuo  
 Laowu hear Zhangsan drink-ASP three-bottle wine I know Laohe hear  
 [Lisi — liang-ping pijiu]]  
 Lisi two-bottle beer  
 ‘Zhangsan drank three bottles of wine, and I know Laohe heard that Lisi drank two bot-  
 tles of beer.’

As said before, though, the increased processing load induced by examples like this may blur our judgments.

We have seen in this section that gapping-like ellipsis in subordinate constructions is licensed by not only the base parallelism between the trigger and target, but also the higher parallelism lying above. This observation can be straightforwardly captured by the idea that the contrast between the trigger and target are not only symmetric but also systematic, cyclically percolating up to the level set up by their minimal common containing CP. Basically, this is how symmetric contrast is passed on, step up step.

#### 4 A Tentative Revision

In this section, I will discuss how the current theory can be revised to match a more plausible view on the information structure of gapping-like ellipsis. I will also briefly show some of its consequences for the theory developed in section 3.

So far I have been tacitly assuming with Wei (2011) that both the first and second remnants of gapping-like ellipsis (together with their correlates) are marked as foci. Nonetheless, the syntax adopted in our discussion is suggesting another story.<sup>10</sup> As shown in (42), the first and second remnants of our elliptical constructions target different positions of the C-domain, a SpecTopP and a SpecFocP.

- (42) [<sub>TopP</sub> XP<sub>1</sub> [<sub>FocP</sub> XP<sub>2</sub> [<sub>YP</sub> ... t<sub>1</sub> ... t<sub>2</sub> ...]]]

Given so, it makes more sense to treat the first remnant of gapping-like ellipsis as a *contrastive topic* (CT), not a focus on a par with the second remnant, as Gengel (2013); Winkler (2005) argue for gapping.

This view might also be supported by the following fact. Contrastive topics, as shown by Büring (1997, 2003), typically indicate the existence of a set of contrasting questions (or a structured question-subquestion complex termed “strategy” in Büring 2003), minimally differing from each other in the part corresponding to the contrastive topic. In other words, an utterance containing contrastive topics may serve as a congruent answer to a superquestion that entails such a question set. For instance, a distributive interpretation of the superquestion in (43a) entails a set of subquestions in (43b). By answering one those, (43c) partially answers (43a).

<sup>10</sup>I thank Prof. Candice Cheung for pointing out this problem.

- (43) a. What did the pop stars wear?  
 b. {What did the female pop stars wear?, What did the male pop stars wear? ... }  
 c. The [female]<sub>CT</sub> pop stars wore [caftans]<sub>F</sub> (Büring 2003: 530)

Interestingly, Ai (2014) observes the question-answer pairs like (43) are also the typical contexts where we find gapping-like ellipsis, as illustrated in (44).

- (44) Q: tamen chi-le shenme?  
 they eat-ASP what  
 ‘What did they eat?’  
 A: [Zhangsan]<sub>CT</sub> chi-le [san-ge pingguo]<sub>F</sub>, [Lisi]<sub>CT</sub> — [si-ge juzi]<sub>F</sub>  
 Zhangsan eat-ASP three-CL apple Lisi four-CL orange  
 ‘Zhangsan ate three apples, and Lisi four oranges.’ (= (1a))

Similar observations can be made for subordinate gapping-like ellipsis.

- (45) Q: tamen tingshuo-le shenme?  
 they hear-ASP what  
 ‘What did they hear about?’  
 A: [Laowu]<sub>CT</sub> tingshuo [Zhangsan he-le san-ping hongjiu]<sub>F</sub>, [Laohe]<sub>CT</sub> tingshuo  
 Laowu hear Zhangsan drink-ASP three-bottle wine Laohe hear  
 [Lisi — liang-ping pijiu]<sub>F</sub>  
 Lisi two-bottle beer  
 ‘Laowu heard that Zhangsan drank three bottles of wine, and Laohe heard that Lisi drank two bottles of beer.’ (= (20c))

Therefore I will revise our theory by taking CT-focus as the proper information structure of gapping-like ellipsis, rather than the previously assumed focus-focus.

The current notion of contrast does not lend to this revision, however. In section 3, contrast has been defined with the squiggle operator  $\sim$ , which is in turn based solely on focus semantics. It follows that after replacing the F-markers on the first remnant and its correlate with CT-markers, the trigger and target of the ellipsis answer in (44) are no longer contrasting: *Zhangsan chi-le san-ge pingguo* ‘Zhangsan ate three apples’ is not and does not imply a proposition of the form *Lisi chi-le x* ‘Lisi ate x’ (x denotes plural individual, the same below), and similarly, *Lisi chi-le si-ge juzi* ‘Lisi ate four oranges’ is not and does not imply a proposition of the form *Zhangsan chi-le x* ‘Zhangsan ate x’.

Thus to complete our revision, it is crucial to incorporate the semantic effect of contrastive topics into the squiggle operator. The definition of topic semantic value adopted here is given in (46) (adapted from Büring 1997: 76; see also Büring 2003).

- (46) *Topic Semantic Value*  
 $\llbracket \alpha \rrbracket^{\text{ct}} =_{\text{def}} \{ \llbracket \alpha \rrbracket^{\text{f}} \mid \text{h is an assignment specific to CT-marked elements} \}$ .  
 (The topic semantics of an expression  $\alpha$  is the set of alternatives to  $\llbracket \alpha \rrbracket^{\text{f}}$ , obtained by substituting the constituents marked as CTs for values of the appropriate type.)

Since a CT value is related to the corresponding focus semantic value in exactly the same way a focus semantic value is related to the corresponding ordinary semantic value, by analogy I redefine the squiggle operator as in (47) (see Büring’s (2003) definition of *CT-congruence*).

- (47) *The Squiggle Operator  $\sim$*   
 $\alpha \sim \beta$  iff



- (i) neither  $\alpha$  nor  $\beta$  properly contains the other, and
- (ii)  $\llbracket \beta \rrbracket^f$  is or implies an element in  $\llbracket \alpha \rrbracket^{\text{ct}}$ , and
- (iii)  $\llbracket \alpha \rrbracket^f \neq \llbracket \beta \rrbracket^f$ .

The definition for implication between sets is given in (48).

### (48) *Implication between Sets*

A set A implies a set B iff there is a bijection f from A to B such that for all  $x \in A$ ,  $x$  implies  $f(x)$ .

With the devices in (46)-(48), we regain the base parallelism in gapping-like ellipsis with a renewed information structure. Consider again the example in (44). Now the focus semantic value of the trigger, i.e., {*Zhangsan chi-le x* 'Zhangsan ate x' | x denotes an individual} is an element of the CT value of the target, i.e., {{*x chi-le y* 'x ate y' | y denotes an individual} | x denotes an individual}, the trigger contrasts the target. Similarly, it can be shown the target contrasts the trigger. The base parallelism thus holds as ever.

At this stage, one may wonder how the current revision will fit into the discussion on higher level parallelism in subordinate gapping-like ellipsis. This happens almost automatically. Our theory has been designed in such a way that SSC does not make direct reference to the implementation of the squiggle operator. Having the latter revised as in (47), the definition of SSC can be left unchanged:

(49) *Systematic Symmetric Contrast*

$\alpha$  and  $\beta$  are in systematic symmetric contrast iff

- (i)  $\alpha \sim \beta$  and  $\beta \sim \alpha$ , and  
(ii) within the minimal common containing CP of  $\alpha$  and  $\beta$ , whenever  $\alpha$  has its immediate C-domain supercycle  $\alpha'$ ,  $\beta$  should also have its immediate C-domain supercycle  $\beta'$ , and  $\alpha'$  and  $\beta'$  are in systematic symmetric contrast. (= (30b))

The only question is once CT interpretation at the level of some phrase  $\alpha$  succeeds, whether we project a focus or a CT up to  $\alpha$ , should the latter option be available. To my knowledge, there is not much discussion in the literature about whether we have CT-projection on a par with F-projection. However, since a CT is essentially a “second-order” focus, there is in principle no reason to exclude it from the projection process established for ordinary foci. Thus, we may entertain an *ad hoc*, but not so implausible suggestion concerning the nature of the projection triggered by successful CT-interpretation at  $\alpha$ : it is (partially) determined by the syntactic position of  $\alpha$ ; in particular,  $\alpha$  will be marked as a focus if it is in an object position, but a CT if it is a subject or topic. If so, our SSC-based analyses for the higher level parallelism in subordinate gapping-like ellipsis can be largely maintained. As the relevant computation differs only in trivial aspects from those done in section 3, I will not spend space below for detailed demonstration.

Finally, we may note that the revision developed so far can even strengthen the explanatory power of the SSC condition. Haoze Li (p.c.) points to me an interesting example in (50), which the SSC condition might be too weak to rule out:

(50) *Topicalized target*

- a. \*<sub>[CP'<sub>A</sub> [Laowu]<sub>F</sub> tingshuo [Zhangsan he-le san-ping hongjiu]<sub>F</sub>], [<sub>CP'<sub>E</sub></sub> [Lisi —  
Laowu hear Zhangsan drink-ASP three-bottle wine Lisi  
liang-ping pijiu]<sub>F</sub> [Laohe]<sub>F</sub> tingshuo]]  
two-bottle beer Laohe hear  
'Laowu heard that Zhangsan drank three bottles of wine, and Laohe heard that Lisi</sub>

- drank two bottles of beer.'
- b. \*<sub>[CP'<sub>A</sub> [Laowu]<sub>CT</sub> tingshuo [Zhangsan he-le san-ping hongjiu]<sub>F</sub>], [CP'<sub>E</sub> [Lisi  
Laowu hear Zhangsan drink-ASP three-bottle wine Lisi  
— liang-ping pijiu]<sub>CT</sub> [Laohe]<sub>CT</sub> tingshuo]]</sub>  
two-bottle beer Laohe hear

(50a&b) show how CTs/foci will be marked or projected in the same sentence without and with applying the revision in this section, respectively. We do have SSC in (50a), in that the base parallelism is sound as usual, and topicalization of *Lisi he-le liang-ping pijiu* 'Lisi drank two bottles of beer' has no effect on the symmetric contrast between CP'<sub>E</sub> and CP'<sub>A</sub> which would have otherwise obtained. But if we distinguish CTs from contrastive foci and projecting them in the way described before, we can see the SSC condition is violated in (50b): the focus semantic value of CP'<sub>A</sub>, i.e., {*Laowu tingshuo p* 'Laowu heard p' | p denotes a proposition} is not and does not imply an element in the CT value of CP'<sub>E</sub>, i.e., {{*x tingshuo p* 'x heard p'} | x denotes an individual, p a proposition}; on the other hand, focus semantic value of CP'<sub>E</sub>, i.e., {*Laohe tingshuo Lisi he-le liangping pijiu* 'Laohe heard that Lisi drank two bottles of beer'} is not and does not imply an element in the CT value of CP'<sub>A</sub>, i.e., {{*x tingshuo p* 'x heard p' | p denotes a proposition} | x denotes an individual}. If the analysis is correct, (50) will be another piece of evidence in favor of the revision in this section and the SSC-based analyses of subordinate gapping-like ellipsis.

## 5 Conclusion

In this paper I have mainly discussed about how various embedding patterns of the trigger and target clauses may affect the acceptability of gapping-like ellipsis in subordinate constructions. Based on a range of empirical data, I have generalized that subordinate gapping-like ellipsis is licensed by both the base parallelism between the trigger and target clauses, and the higher level parallelism between their containing clauses, and the containing clauses of the latter, and so on. While the former can be well captured by a usual focus licensing condition on ellipsis, i.e., symmetric contrast (Rooth 1992a,b), the latter should be analyzed a systematic extension of the former, here termed as the systematic symmetric condition. Recursively defined, the systematic symmetric condition in combination with the principle that correlates focus projection and focus interpretation basically carries out a successive-cyclic contrastive focus interpretation algorithm. I have shown how the generalizations made in structural terms, which might not be so accurate, can uniformly follow from this condition. I have also attempted a revision of the current theory to make it compatible with assumption that gapping-like ellipsis has contrastive topic-contrastive focus as its information structure.

Given that the definition of systematic symmetric contrast itself has not involved specifics of gapping-like ellipsis, a remaining issue would be whether there is any other elliptical construction, e.g., VP-ellipsis, sluicing, pseudogapping, in Chinese or even in other languages that is also subject to this condition, and if no, why gapping-like ellipsis alone has to obey this condition. This I leave for future study.

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