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Distributivity in Ellipsis in Chinese

Grant Xiaoguang Li Marlboro College

This paper explores the phenomenon of distributivity manifest in ellipsis in Chinese. It will be proposed that in addition to standard syntactical distributivity projection a distributive reading also results from a focus projection that involves anaphoric relations from context. A distributive reading will occur if an elided string is anaphorically associated with a previous discourse that shares the predicate with what is omitted. This will extend the source of distributivity from pure syntactic phenomenon to a discourse function and captures the distribution of distributive markers like *ye* and *dou*.

1. Ellipsis and dummy *shi* (be)

In Chinese, one type of ellipses in a positive sentence contains three parts, namely a contrastive subject, *ye* (also) and dummy *shi* (be).

(1) 老张买了房子。老李也是。

Lao Zhang mai-le fangzi. Lao Li ye shi. Lao Zhang buy-PERF house Lao Li also be 'Lao Zhang bought a house. Lao Li did too.'

Shi (be) in (1) differs from shi (be) in (2).

(2) a. 老张是北京人。老李也是。

Lao Zhang shi Beijing ren. Lao Li ye shi. Lao Zhang be Beijing person Lao Li also be 'Lao Zhang is from Beijing. Lao Li is too.'

b. 老张是买了房子。
Lao Zhang shi mai-le fangzi.
Lao Zhang be buy-PERF house 'Lao Zhang did buy a house.'

Shi in (2a) is a verb, while it is an emphatic auxiliary in (2b). Soh (2007) argues that the three shis occupy different syntactic positions. The verb shi appears within the vP; the emphatic shi, as an auxiliary, may appear in T or Mod; dummy shi, similar to do in English in licensing verb phrase ellipsis, occurs only when it is not preceded by the negative bu (not). In this regard, dummy shi and neng (can) behave differently in ellipsis construction. Soh argues that shi and neng occupy different structural positions.

Specifically, that dummy *shi* and *neng* occupy different positions is supported by cases involving the negative marker bu (not). When *shi* is preceded by the negative bu-, ellipsis can no longer be licensed.

(3) a. *他喜欢张三。我不是。
*Ta xihuan Zhangsan. Wo bu-shi. he like Zhangsan I not-be
b. *他不喜欢张三。我也不是。
*Ta bu-xihuan Zhangsan. Wo ye bu-shi. he not-like Zhangsan I also not-be

This does not apply to *neng*, though.

- (4) a. 他能去。我不能。
 Ta neng qu, wo bu-neng.
 he can go I not-can
 'He can go, but I cannot.'
 - b. 他不能去。我也不能。 Ta bu-neng qu. Wo ye bu-neng. he not-can go I also not-can 'He cannot go. I cannot either.'

Soh (2007) proposes the following structure in which bu (not) occupies the head of ΣP , originally proposed by Laka (1990).

(5) [_{TP}	Т	$\sum_{\Sigma P} \Sigma$	[ModP Mod	[_{vP} v [_{vP} V]]]]]
Dummy Aux shi		bu-/zero	Aux neng	Verb shi

The projection of ΣP separates TP and ModP. If *bu* alternates with a zero morpheme indicating affirmativeness, counterpart of negation, *shi* and *neng*, in T and Mod respectively, can only precede or follow *bu*, respectively. Therefore, dummy *shi* does not follow *bu* in ellipsis, as shown in (3).

2. *Ye/que* and dummy *shi* (be)

Soh's major concern is to derive the linear order of *shi* and *neng* with respect to *bu*, but offers no discussion of *ye* which is obligatory in ellipsis. Position-wise, *ye* does not seem to pose problems because it is always used before *shi*, therefore before *bu* and *neng*. However, *ye*'s counterpart *que* in positive/negative switches will be problematic for the word order discussed above. Wei (2008) points out that while Soh's analysis successfully accounts for sentences in (6), it would make wrong prediction on *shi* in (7).

- (6) a. *他喜欢张三。我不是。
 *Ta xihuan Zhangsan. Wo bu-shi. he like Zhangsan I not-be
 - b. 他是演员。我不是。 Ta shi yanyuan. Wo bu-shi. he be actor I not-be 'He is an actor. I am not.'
- (7)*他能去。但是李四(却)是不能。

*Ta neng qu. Danshi Lisi (que) shi bu-neng. he can go but Lisi (but) be not-can

In (7) the word order among *shi*, *bu*, and *neng* is not allowed, contrary to what we have seen above.¹ It may be suspected that the problem lies in the use of *que*. Taking *que* into account, Wei also observes that Soh's account fails to distinguish polarity symmetry between the two conjuncts in (8) from polarity asymmetry in (9).

- (8) 他不能去。李四*(也) 不能。
 Ta bu-neng qu. Lisi *(ye) [ΣP bu [ModP neng [[vP v [vP]]]]] ([-], [-]) he not-can go Lisi also no can
 'He cannot go. Lisi cannot either.'
- (9) 他能去。李四(却)不能。
 Ta neng qu. Lisi (que) [_{2P} bu [_{ModP} neng [[_{vP} v [_{vP}]]]]] ([+], [-])

¹ Note that in general the part after dummy *shi* is phonologically null. The ungrammaticality of (7) may be due to some reason(s) independent of purely structural positions among *shi*, *bu* and *neng*.

he can go Lisi but not can 'He can go, but Lisi cannot.'

Ye is used when both clauses are positive or negative. Que is used when one clause is positive while the other is negative. Connecting que with ye, Wei then suggests that ye/que occupies a head of FP higher than the dummy shi.

- (10) $[F_{\text{FocP}} ye/que [\text{TP} ... [P_{Ol/\Sigma P} Pol/\Sigma (shi/~) [N_{egP} (Neg) [M_{odP} Mod [v_P v [v_P V]]]]]]$
- (11) [FocP ZS [bu yao qu Meiguo]], danshi [FocP Lisi (que) [Pol/ΣP~ [ModP yao [vP]]]]
 张三不要去美国, 但是李四(却)要。

On Wei's analysis, dummy *shi* alternates with a zero morpheme ~ indicating the negative counterpart, similar to the contrast between *ye* and *que*. There is an agreement between *ye/que* and *shi/~*. *Ye* patterns with *shi*, showing that both clauses are positive or negative. On the other hand, *que* goes with ~, highlighting the positive/negative contrast. The difference exhibited in (7-9) receives an explanation on lexical requirements by *ye* and *que*. The sentence in (12) is bad due to the fact that *que* co-occurs with the dummy *shi*.

 *张三没吃苹果。但是李四(却)是。
 *Zhangsan mei chi pingguo. Danshi Lisi (que) shi. Zhangsan not ate apple but Lisi but be

3. Distributivity in ellipsis

In a parallel analysis, I (Li 1997, 2007, 2008) propose that *ye/dou* occupy the head of DistP to derive distributivity.

(13) a. 老张和老李都买了房子。

Lao Zhang he Lao Li dou mai-le fangzi. Lao Zhang and Lao Li all buy-ASP house 'Both Lao Zhang and Lao Li bought a house.'

b. 老张买了房子。老李也买了房子。

Lao Zhang mai-le fangzi. Lao Li ye mai-le fangzi. Lao Zhang buy-ASP house Lao Li also buy-ASP house 'Lao Zhang bought a house; Lao Li also bought a house.'

Siding with some recent syntactic/semantic theorists, I take distributivity to be a relation between predicate and subject. I argue that the projection DistP *dou/ye* heads sits between

IP and VP, thus distributing on the subject. In (13a), *dou* forms a distributive predicate, deriving distributivity on the subject *Lao Zhang and Lao Li*. Distributivity may not only manifest itself in the subject, but also may take context information as part of conjunct to be interpreted distributively. In (13b), *ye*, which also occupies the head of DistP, requires that a different, previously mentioned subject be taken into consideration for the sentence to be grammatical. The predicate *bought a house* manifest as DistP distributes over a variable that realizes in this particular sentence as *Lao Zhang* and *Lao Li*. The difference between (13a) and (13b) is that in the former both Lao Zhang and Lao Li appear overtly in the sentence, whereas in the latter they occur separately as subjects of different clauses.

a. λx.x bought a house
b. Lao Zhang & Lao Li [DistP bought a house]

My theory derives the observation that there is a difference between English and Chinese with respect to distributivity via verb movement, a free-ride for an English sentence to have a distributive reading without an overt distributive marker. (see Li 1997, 2008) To the extent that *ye* is a distributive marker, the question to ask is how to account for its distributive nature in sentences like (1). If Soh is correct, then the distributive reading exhibited from *ye* in (1) is not obtainable from the projection DistP because ΣP is higher than DistP and consequently *ye* is too high to be the head of DistP. If Wei is correct, that is, *ye* is at the head of FocP higher than TP, then there must be more than one position for *ye* if in both cases *ye* plays the same function and should be regarded as the same element.

While *dou* and *ye* both occur in a pre-verbal position to achieve distributivity, there is a difference between them in other cases with respect to the position they occupy. *Dou* occurs before or after modals, negator, but *ye* occurs only before modal or negator.

(15) a. 我们都能买房子。

Women dou neng mai fangzi. we all can buy house 'We can all buy a house.'

- b. 我们能都买房子。 Women neng dou mai fangzi. we can all buy house 'We can all buy a house.'
- (16) a. 我们也能买房子。

Women ye neng mai fangzi. we also can buy house

'We can also buy a house.'

- b. *我们能也买房子。*Women neng ye mai fangzi. we can also buy house
- (17) a. 我们都不买房子。
 Women all bu mai fangzi. we all not buy house
 'None of us buy a house.'
 b. 我们不都买房子。

Women bu dou mai fangzi. we not all buy house 'Not all of us buy a house.'

(18) a. 我们也不买房子。

Women ye bu mai fangzi. we also not buy house 'We don't buy a house, either.'

b. *我们不也买房子。 *Women not ye mai fangzi. we not also buy house

The sentences in (15-18) collectively indicate that to the extent that *ye* induces distributivity, the source of a distributive reading with *ye* is bound to be from a distinct position than what is assumed by Li if Soh and Wei's lines of reasoning are on the right track. In other words, a distributive reading is not derived exclusively from a position designed for distributivity.

I follow Wei in assuming that *shi* is in the head of ΣP and *ye/que* occupies the head position of FP. Note that when *ye* occurs, *dou* can co-occur with it.

(19) a. 老张买了房子。老王和老李也是。

Lao Zhang mai-le fangzi. Lao Wang he Lao Li ye shi. Lao Zhang buy-ASP house Lao Wang and Lao Li also be 'Lao Zhang bought a house. Lao Wang and Lao Li did, too.'

b. 老张买了房子。老王和老李也都是。

Lao Zhang mai-le fangzi. Lao Wang he Lao Li ye dou shi. Lao Zhang buy-ASP house Lao Wang and Lao Li also all be 'Lao Zhang bought a house. Both Lao Wang and Lao Li did, too.'

We may assume that the head of FP may contain both *ye* and *ye dou* in ellipsis. *Dou*'s occurrence in this construction depends on *ye*, without which the sentence is ungrammatical.

(20)*老张买了房子。老李都是。

*Lao Zhang mai-le fangzi. Lao Li dou shi. Lao Zhang buy-ASP house Lao Li all be.

(20) is ungrammatical not because the subject of the second clause is singular, as (21) indicates.

(21)*老张买了房子。老王和老李都是。

* Lao Zhang mai-le fangzi. Lao Wang he Lao Li dou shi. Lao Zhang buy-ASP house Lao Wang and Lao Li all be.

In ellipsis construction, ye is crucial.

(22)*老张买了房子。老李是。

*Lao Zhang mai-le fangzi. Lao Li shi.

Lao Zhang buy-ASP house Lao Li be.

The question then boils down to whether distributivity could in principle result from ellipsis. From the data we have reviewed distributivity should have two sources: one is from DistP, the other from FocP. If distributivity may come from focus projection, then ellipsis may result in distributivity if ellipsis is a type of focus (see Wu 2002).

That ellipsis is related to focus is supported by the fact that whether a given string is accented or deaccented will result in different meanings from context. The following quote is due to Johnson (2008). "That unpronounced strings derive their meanings from context, just as pronouns do, could be related to the fact that deaccented material is also sensitive to context (see Rooth 1985 and Schwarzschild 1999, for example) and, of course, unpronounced strings are necessarily deaccented. The anaphoric nature of deaccented material can be exemplified in connected discourses like those in (23, Johnson's 12).

(23) a. James ate the yellow banana.

No, he ate the BLACK banana.

b. James ate the yellow banana.

*No, he MASHED the black banana.

In (23a), everything in the second sentence is deaccented except *black* and this partition corresponds perfectly to what is new to this sentence and what has already been introduced in the first place. That is, everything that is deaccented in the second sentence of (23a) can be found in the first sentence of (23a). This isn't true for the second sentence of (23b), however, and this results in an ill-formed discourse. In general, deaccented material must convey information that has already been introduced in the discourse." If this line of reasoning is on the right track, both deaccented and unpronounced strings derive their meanings from context, thus putting the overt string as focus.

In Chinese "*lian ...dou/ye*" construction is also assumed to be an instance of focus (see Shyu 1995).

(24) a. 连老王都能买房子。

Lian Lao Wang dou neng mai fangzi. even Lao Wang all can buy house 'Even Lao Wang can buy a house.'

b. 连老王也能买房子。

Lian Lao Wang ye neng mai fangzi. even Lao Wang also can buy house 'Even Lao Wang can buy a house.'

Since the focus projection is higher than models (and distributivity phrase), *dou* and *ye* don't follow *neng*.

(25) a. *连老王能都买房子。
*Lian Lao Wang neng dou mai fangzi. even Lao Wang can all buy house
b. *连老王能也买房子。
*Lian Lao Wang neng ye mai fangzi. even Lao Wang can also buy house

That *dou* cannot follow *neng* in focus construction would be a puzzle if "*lian ...dou/ye*" construction were subsumed under distributivity projection (cf. 13).

4. Obligatory ye and optional que

Note the following contrast.

(26) a. 老张买了房子。老李也买了房子。Lao Zhang mai-le fangzi. Lao Li ye mai-le fangzi.

Lao Zhang buy-ASP house Lao Li also buy-ASP house 'Lao Zhang bought a house. Lao Li also bought a house.'

- b. 老张买了房子。老李买了房子。
 Lao Zhang mai-le fangzi. Lao Li mai-le fangzi.
 Lao Zhang buy-ASP house Lao Li buy-ASP house
 'Lao Zhang bought a house. Lao Li bought a house.'
- a. 老张买了房子。老李也是。
 Lao Zhang mai-le fangzi. Lao Li ye shi.
 Lao Zhang buy-PERF house Lao Li also be
 'Lao Zhang bought a house. Lao Li did too.'
 - b. *老张买了房子。老李是。 *Lao Zhang mai-le fangzi. Lao Li shi. Lao Zhang buy-PERF house Lao Li be

There is a difference in *ye* between non-elliptical and elliptical sentences. In the former, *ye* is optional as in (26). However, in ellipsis *ye* is obligatory. Notice that there is a similarity in the requirement of elements like *ye* between Chinese and English.

- (28) a. John bought a house; Mary also bought a house.b. John bought a house; Mary bought a house.
- (29) a. John bought a house; May did too.b. *John bought a house; May did.

Reasons that were offered in the literature for the obligatoriness of *ye* are primarily pragmatic. The following are some proposals.

Green (1968) proposes that the obligatoriness results from what *too* conventional implicates: what I say about the contrasting (or focused) constituent in the second clause, I also say about the contrasting constituent in the first clause. Kaplan (1984) argues that *too*'s obligatoriness stems from its discourse function, which is to emphasize the similarity between the members of a pair of contrasting items.²

Fiengo and May (1994, p 97) point out "We will also gloss over the function of such particles as *too*, *as well*, the negative, and *either*, which occur with lists of sentences,

² This paragraph is taken from Wu (2002).

including those in which there is ellipsis. Briefly the generalization underlying their occurrence is that their presence indicates that the same thing is being said over again, their absence, that different things are being said. Thus, *too* signals that what is being said about Max in *Max loves Sally, and Oscar does, too* (or *Max loves Sally, and Oscar loves Sally, too* for that matter) is also what is being said about Oscar. Absence of this particle is decidedly odd: **Max loves Sally, and Oscar does.* Presumably this is because the clauses say the same thing about Max and Oscar, but this is not properly specified by the presence of *too*. Negating one of the clauses brings a return to well-formedness: *Max loves Sally, but Oscar doesn't; Max doesn't love Sally, but Oscar does. Too* is absent here because the clauses say opposite things about Max and Oscar, not the same thing. If, on the other hand, both clauses are negated, then a "same-saying" indicator, in the negative form *either*, must return; Compare **Max doesn't love Sally, and Oscar doesn't*. Notice that certain contexts prohibit the appearance of *too: John saw Max before Bill did, too.* In the former, what is being said of Bill (that he saw Max) is not what is being said of John (that he saw Max before Bill saw Max)."

To claim that elements like *too/ye* are required for some exclusively pragmatic reason seems to be necessary but not sufficient. All of the statements above point to the correct descriptions for *too/ye* to appear but at the same time too powerful to allow cases where *too/ye* is not obligatory. For example, if two clauses say the same thing then *too/ye* need to be there, then when the second clause is not in the form of ellipsis, in other words in the form of being fully overt, *too/ye* is not required, as sentences in (26) and (28) show. To say that *too/ye* is required because of *too/ye*'s pragmatic usage has little to do with what is required when *too/ye* is absent. It is not simply the case that when a second clause is in ellipsis does *too/ye* need to be there.

Wu argues "for a focus-based theory of ellipsis parallelism since, as Rooth (1992), Tomioka (1995) and Fox (1998) point out, the function of ellipsis is to bring the subject to focus or contrastivity." As we have seen above, Wei also argues for a focus-based analysis of ellipsis. To the extent that some focus involves distributivity, we may infer that some ellipses involve distributivity. Ellipsis triggers distributivity. Then there are two sources of distributivity. The similarity between the two types of distributivity arguably lies in the possibility of assuming that regular distributivity is a special type of focus without one element being more highlighted than others, whereas focus-related distributivity brings up contrast. Consequently there are two types of distributivity: contrastive vs. non-contrastive. Non-contrastive distributivity needs to be licensed within a sentence; contrastive distributivity always involves context.

It is interesting to note that for the obligatoriness of *ye/too* there is no difference between English and Chinese. Both require the element to appear. On the other hand, for *dou/all* or *each* the difference between English and Chinese is one of being obligatory vs. optional. In Chinese *dou* is obligatory because there are no other options available to achieve distributivity. Contrastively in English *all/each* being optional is necessitated by

the availability of verb movement which gives a free-ride for distributivity. From the viewpoint of sentences in the absence of *too/ye*, their presence is obligatory in ellipsis not because of pure semantic or pragmatic reasons, but because of the conjunction of the syntactic requirement on distributivity. When ellipsis occurs, focus ensues. The element to be focused forms a plural distributive conjunct with another element from context, hence resulting in distributivity. Accordingly the projection responsible for distributivity must be licensed so as to make distributivity obtainable.

If this line of reasoning is on the right track, then *too/ye* is required because the contextual information is forced to be incorporated into a distributive conjunct. The requirement is syntactic, rather than purely pragmatic.

As Fiengo and May point out, *too* cannot be used if the second clause does not say the same thing as the first clause. From the viewpoint of distributivity, a distributive conjunct forms when the subjects are different while the predicate remains the same. If the predicates are different, then no distributivity arises. Wei observes that in Chinese ellipsis, *ye* is required but *que* is optional.

(30) a. 张三吃苹果。李四*(也)是。
Zhangsan chi pingguo. Lisi *(ye) shi.
Zhangsan eat apple Lisi also be
'Zhangsan eats apple, Lisi does *(too).'
b. 张三不吃苹果。李四*(也)是。
Zhangsan bu chi pingguo. Lisi *(ye) shi.

Zhangsan ou eat apple Lisi also be 'Zhangsan does not eat apple, Lisi does not *(either).'

(31) a. 张三要去美国。但是李四(却)不要。
Zhangsan yao qu Meiguo. Danshi Lisi (que) bu yao.
Zhangsan will go America but Lisi but not will
'Zhangsan will go to America, but Lisi will not.'
b. 张三不要去美国。李四(却)要。
Zhangsan bu yao qu Meiguo. Lisi (que) yao.
Zhangsan not will go America Lisi but will
'Zhangsan will not go to America, but Lisi will.'

In the sentences in (30-31) ye is obligatory, but que is optional. In cases of ye, the elided in the second clause is the same as the corresponding part in the first clause, thus forming a distributive conjunct.

(30') a. $[_{\text{TP}} \text{ Zhangsan } [_{\text{vp}} \text{ ate apple}]_i]$ $[_{\text{FocP}} \text{ Lisi } ye [_{\text{TP}} [_{\text{Pol}\SigmaP} shi [_{\text{vp}} ~]_i]]]$

b. [_{TP} Zhangsan [_{NegP} not [_{vp} ate apple]]_i] [_{FocP} Lisi *ye* [_{TP} ... [_{Pol/ΣP} *shi* [_{NegP} ~ [_{vp} ~]]_i]]]

However, in cases involving *que*, the elided in the second clause is always the negative/positive counterpart. Thus it fails to form a distributive conjunct. Therefore it is optional.

- (31') a. [TP Zhangsan [NegP [ModP will [vp go to America]]]_i] [FocP Lisi (que) [NegP not [ModP will [vp ~]]]_j] h. [... Zhangsan [.... pat [.... will [... so to America]]]
 - b. $[_{TP} Zhangsan [_{NegP} not [_{ModP} will [_{vp} go to America]]]_i]$ $[_{FocP} Lisi (que) [_{NegP} - [_{ModP} will [_{vp} ~]]]_j]$

A distributive conjunct is to be formed across sentences if what is elided is anaphorically associated with the predicate in the previous discourse.

(32) Lao Zhang $[_{PRED}$ bought a house $]_i$ Lao Li did too $[_{PRED} \sim]_i$

If the two predicates are not identical, then there is no distributive conjunct to be formed.

(33) Lao Zhang [PRED bought a house]_i Lao Li did [PRED not ~]_i

5. Distributivity in a nutshell

In a sentence that involves a plural subject a distributive reading needs to be syntactically marked to eliminate an otherwise default collective reading. In principle there are two ways to mark the syntactic designation within a sentence: by way of V-to-I movement or over lexical insertion. While lexical insertion is always available, the option of V-to-I movement is independently motivated, resulting in a difference between English and Chinese. In general, to have a distributive reading is to make use of the predicate in a reiterate fashion. I assume that if nothing happens distributivity is not available. This applies to discourse. If two sentences (or more) are to form a plural conjunct as a result of focus in ellipsis, then a syntactic marking is necessary to mark distributivity. Since there is no mechanism like V-to-I movement available, the only option is to resort to lexical insertion. Thus both English and Chinese use a distributive marker in ellipsis.

Finally, this paper has dealt with problems surrounding *ye/also*, but left out issues on why dummy *shi* is required in Chinese. In English we may say *John bought a house and Mary too* in which *did* is not even used.

REFERENCES

- Breul, Carsten. 2004. *Focus structure in generative grammar*. Amsterdam: John Benjamins Publishing Company.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, Mass: MIT Press.
- Johnson, Kyle. Ed. 2008. Topics in ellipsis. Cambridge: Cambridge University Press.
- Li, X. G. 1997. *Deriving distributivity in Mandarin Chinese*. Unpublished Ph.D. dissertation, University of California, Irvine.
- Li, X.G. 2007. Contrast and distributivity. Paper presented at IACL-15 & NACCL-19 Joint Conference, Columbia University.
- Li, X.G. 2008. To differ: something from nothing. Paper presented at IACL-16.
- Shyu, Shu-ing. 1995. *The syntax of focus and topic in Chinese*. Unpublished Ph.D. dissertation, University of California, Los Angeles.
- Soh, Ling Hooi. 2007. Ellipsis, last resort, and the dummy auxiliary *shi* 'be' in Mandarin Chinese. *Linguistic Inquiry* 38.1: 178-188.
- Wang, Chyan-an Arthur & Hsiao-hung Iris Wu. 2006. Sluicing and focus movement in *wh*-in-situ languages. Penn Working Papers in Linguistics, Volume 12.1.
- Wei, Ting-Chi. 漢語動詞刪略句中的也和卻. Ms.
- Wei, Ting-Chi. 2008. Focus structure in Mandarin VP-ellipsis: implications on crosslinguistic analysis. IACL-16.
- Wu, Hsiao-hung Iris. 2002. Ellipsis and focus. Ms. National Tsing Hua University, Hsingchu.