

FEATURE SATURATION PROCESS IN CHINESE LONG DISTANCE BINDING

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Abstract : Chinese long distance binding is explored in this paper by a feature-orientated approach: a long distance anaphor has barren or impoverished phi-features before its upward movement at LF, and that its upward movement and its phi-feature obtaining process provide answers to long distance binding. The feature obtaining process is governed by rules which are summarized in terms of Feature Saturation process (FSP). Accordingly, binding is an instance of a perfect match of features possessed by a saturated anaphor and an NP at LF. An anaphor is bound when it moves to INFL with full phi-features matched with a feature functioning NP, while a middle-way anaphor with unsaturated phi-features is not bound. This approach has an advantage in better explaining the binding relations of the type of sentence cited in the paper and providing alternative answers to other issues of Chinese long distance reflexives. It is further shown that the binding of Chinese reflexive ziji to its antecedent(s) results from a sequence of local dependency through movement.

Keywords : anaphor; Chinese; long distance binding; ziji; feature; saturation; Principle A; FSP

INTRODUCTION

Chinese long distance binding and its blocking effect have constituted a serious challenge to the universality of GB. Of the various approaches to account for this language property, the Movement-to-INFL hypothesis proposed by Battistella (1989) has been

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considered one of the most capable to reconcile the Chinese long distance binding and the locality requirement of the binding principles[1].

It has been suggested that reflexives in Chinese follow a pattern of Movement-to-INFL at LF in much the same way as English Wh-movement (Battistella: 1989). According to Battistella, Chinese long distance reflexives, having generated features similar to those of the subject NP in the local domain, follow a strict successive cyclic movement from the base position to higher structure at LF, the landing site of this movement being INFL. It follows that *ziji* in 1) first moves at LF from the object position within the local governing category to INFL in this domain, and then to adjoin to INFL of the intermediate clause, and finally the matrix clause. This approach allows a rather extendible account for those seemingly language specific properties such as subject orientation which asserts that only subject, not object can serve as an antecedent of a reflexive in Chinese.

1) [Zhangsan ziji-INFL renwei [Lisi t"-INFL zhidao [Wangwu t'-INFL ai t]]]
Zhangsan thinks Lisi knows that Wangwu loves self

However the assumption that phi-features of an anaphor are base-generated has caused some unsolved problems, as shown in 2) and 3).

2) Zhangsan$_i$ renwei tamen$_j$ ai ziji *i/j*
Zhangsan$_i$ thinks they$_j$ love self *i/j*

3) [Bier$_i$ renwei [Mali$_j$ juede [Yuehan$_k$ ai ziji $_{i/j/k}$]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self$_{i/j/k}$

This approach rules out the binding relation between *ziji and Zhangsan* in 2) for an incompatibility of their number features although their coreference in the sentence is perfectly acceptable. In 3), according to its treatment, *ziji* carries the 'base-generated' features identical to *John's,* i.e. the third person singular masculine, its binding with *Mary* is thus ruled out because of a conflict of the gender feature. But in fact, *ziji* can be bound by either Mali in the intermediate clause or Bill in the Matrix clause.

In addition, this approach has imposed a linear dependency of long distance binding on local bindings, i.e. the binding of the reflexive with an NP in a lower domain is the prerequisite for its long distance binding with NPs in higher-up domains. This linear requirement is empirically problematic: when, for example, a speaker or a hearer perceives the binding relation between *ziji* and *Zhangsan* in 1), he or she will instinctively reject binding of *ziji* and NP in the lower and upper clauses.

FEATURE SATURATION PROCESS (FSP)

To address the above issues on binding and long distance binding in particular, I would like to suggest an alternative in which reflexives are considered barren or impoverished in phi-features before they move at LF, while I will share the methodologies in dealing with binding by Battistella and others.

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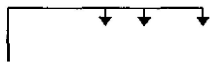
In comparison, English reflexives are feature-rich with at least person and number features specified, while Chinese *ziji* feature-impoverished. As will be shown, this difference determines to a large extent parametric differences of binding in the two languages.

Chinese *ziji*, can be coreferenced with any potential NP with varied phi-features. It is assumed that co-reference involves identical features of the reflexive and the antecedent. In the following sentences, *ziji* is co-referenced with different NPs with different phi-features. To explain this, we envisage a feature copying process in which *ziji* obtains phi-features from its various antecedent NPs at LF: the anaphor moves to INFL and copies features from the feature-functioning Nps.



[0p[0#(0g)]][2]	[3p[S#(Mg)]]	
Yuehan taoyan ziji (a)	Yuehan ziji-INFL taoyan t	(b)
John dislikes himself	John dislikes himself	

Let us assume that a checking rule will check whether the features of the reflexive match those of other NPs. Binding is thus considered possible only when an anaphor moves to INFL and possesses -features identical to those of the binder. On the contrary, a middle-way anaphor with unsaturated phi-features is not able to be bound by a potential binder. The following is a summary of the rules which govern the feature mechanism in the movement-to-INFL in Chinese.

FEATURE SATURATION PROCESS (FSP)

(A) An anaphor with empty or impoverished phi-feature is bound to move upward to achieve saturation at LF.

(B) An anaphor saturated with phi-features is obliged to reside in the domain where it becomes saturated, thus a binding relation is established.

(C) A barren or an impoverished anaphor is obliged to copy person feature from an adjacent NP in the local domain, and then copy features optionally in the order of number and gender in either the local domain or higher up domains. [3]

An anaphor is considered saturated if A) or B):

(A) it acquires all phi-features.

(B) it has the same features of the subject NP in a particular domain.

By adopting this, we are in a position to explain the two sentences which have caused problems to the existing theories on long distance binding. Let us see how *ziji* is able to be bound by both local and long distant NPs in 3) although there exists a discrepancy of the gender features possessed by the NPs.

3) [Ip Bier$_i$ renwei [Ip' Mali$_j$ juede [Ip" Yuehan$_k$ ai ziji $_{i/j/k}$]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self $_{i/j/k}$

The binding of *Yuehan* and *ziji* is realized when the featureless ziji moves to INFL of IP" and copies full features from *Yuehan* (F(Yuehan) [3p [S# (Mg)]]), thus it lands in the local INFL of the sentence resulting in a binding relation in accordance with FSP-b and FSP-c:

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[3p[S#(Mg)] ←([0p[0#(0g)]]

3a.[Ip Bier$_i$ renwei[Ip' Mali$_j$ juede [Ip"[Yuehan$_k$ ziji-INFL ai t]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self$_{k/*i/*j}$

However, this is not the only possibility, as *ziji* does not have to copy all features from *Yuehan*. If *ziji* does not obtain full features in the local domain, it is required, however, to copy at least the person feature in accordance with FSP-c, and changes its feature status to either [3p[0#(0g)]] or [3p[S#(0g)]]. Under this circumstance, according to FSP-a, *ziji*, being impoverished in features, is motivated for an upward movement to the higher-up domain. As a result, it will end up at INFL of IP'. The moving-up *ziji* carrying [3p[0#(0g)]] has three alternatives: it can either acquire full phi-features of gender and number from *Mali* (Mary) so as to be bound by the latter, a similar process like binding occurring between *ziji* and *Yuehan*, or to get from *Mali(*Mary) only a second feature, i.e. the number feature (see 3c), or no feature at all (see 3d). When *ziji* moves to INFL in IP, it resides there after copying full features from *Bier* (Bill), hence the long distance binding with the NP in the matrix sentence.

[3p[S#(Fg)] ← [3p[0#(0g)]

3b.[Bier$_i$ renwei [Mali$_j$ ziji-INFL juede [Yuehan$_k$ t' ai t]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self$_{j/*i/*k}$

[3$_p$[S$_\#$(M$_g$)] ← [3$_p$[S$_\#$(0$_g$)] ← [3$_p$[0$_\#$(0$_g$)]

3c. [Bier$_i$ ziji renwei [Mali$_j$ t" juede [Yuehan$_k$ t' ai t]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self$_{i/*j/*k}$

[3$_p$[S$_\#$(M$_g$)] ← [3$_p$[0$_\#$(0$_g$)] ← [3$_p$[0$_\#$(0$_g$)]

3d. [Bier$_i$ ziji renwei [Mali$_j$ t" juede [Yuehan$_k$ t'ai t]]]
Bill think Mary feel John love self
Bill$_i$ thinks that Mary$_j$ feels that John$_k$ loves self$_{i/*j/*k}$

It is clear that the binding dependency in upper domains on the lower domains does not exist here. As binding is realized after the reflexive acquires full phi-features, and it may happen only once in the upward movement at LF, the binding of a reflexive with different each NP is thus an independent instance in its movement-to-INFL.

In the same manner, FSP explains why the discrepancy of number features of *tamen* (they and *Zhangsan* in 2) does not constitute a problem to their binding relationship with *ziji*. According to FSP-a and FSP-c, *ziji* may only copy the person feature from *tamen* (they) and then moves upward to the matrix sentence. The long distance binding of *ziji* with *Zhangsan* thus becomes possible regardless of the fact that *Zhangsan* and *Tamen* (in the local domain) have different number features.

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NOTES

[1] General discussions on GB and Chinese reflexive can be found in Tang 1986; Huang & Tang 1988; Battistella, E 1989; Pan 1989; Sung & Cole 1991, etc. Constrained by the space in this proceeding, I have to skip the background information on this issue.

[2] In this feature scheme, p, # and g stand for person, number and gender respectively, while 0,3, S, P, M and F represent zero, third person, singular, plural, masculine and feminine respectively.

[3] FSP offers explanations of the binding phenomena in both Chinese and English, English reflexives observe FSP-a and FSP-b, but are subject to parametric variations in FSP-c: an English anaphor is obliged to become saturated in the local domain either by copying or without copying the (gender) feature in this domain.

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