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## Local, Intermediate and Long-distance Binding: The Case of the Chinese Reflexive *Ziji* in the Long *Bei*-construction

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### Abstract

This study tackles binding issues of Chinese reflexive *ziji*, an instantiation of so-called long-distance anaphors. We evaluated a “mixed” approach (Charnavel, 2019; Huang & Liu, 2001; Huang et al., 2009) to long-distance anaphora, by analysing the role of locality and logophoricity on the behaviour of *ziji* in the long-*bei* passive, an understudied construction in the domain of Chinese anaphora. Our analysis shows that the “mixed” approach, which claims that a long-distance anaphor is either a plain anaphor or a logophor subject to logophoricity, is not sufficient for capturing *ziji*'s behaviour in the *bei*-construction. We argue that when taking antecedence from the matrix subject of the long-*bei* passive, *ziji* is neither a plain anaphor as it is not locally bound, nor a logophor as logophoricity effects are absent. We suggest that *ziji* may have a third status: intermediate binding, i.e., neither local nor long-distance, but rather indirect resulting from the mediation of a null operator. Further research will look into other constructions that may involve intermediate binding, e.g., the *ba*-construction, and focus on properties of intermediate binding and seek accounts for it.

### Keywords

Long-distance anaphora, Chinese reflexive *ziji*, the *bei*-construction, locality, logophoricity

## 1. Introduction

Long-distance anaphora (henceforth LDA) refers to the ability of a certain class of anaphors to take an antecedent outside of their local binding domain. Proposals taking distinct theoretical positions have been proposed to account for LDA (Charnavel, 2019; Cole et al., 1990; Huang, 1982; Huang & Liu, 2001; Huang & Tang, 1991; Manzini & Wexler, 1987). This study focuses on the applicability of a “mixed” approach to the Chinese long-distance reflexive (henceforth LDR) *ziji*. This approach argues that a LDA has a dual status (Charnavel, 2019; Huang & Liu, 2001; Huang et al., 2009): when it is locally bound, it is a plain anaphor; when it takes a non-local binder, it is a logophor (Kuno, 1972) or an ‘exempt’ anaphor as defined in Charnavel (2016, 2018, 2019), namely, an anaphor locally bound by a logophoric operator and thus subject to semantic conditions on logophoricity.

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Most studies have focused on the behaviour of *ziji* in two-place predicates, where a non-local relation is identified by the presence of a tensed TP, which is a CP barrier, intervening between *ziji* and its antecedent. This study analyses *ziji* in the anaphoric use and the logophoric use in the long-*bei* passive, a construction that has not received extensive attention. Our analysis reveals that, when *ziji* is long-distance bound by the matrix subject, its behaviour cannot be reduced to plain or logophoric binding; rather, the binding relation is intermediate, a relation built indirectly through the mediation of a null operator generated at the edge of the lower vP. To our knowledge, no study has reported intermediate binding effects for Chinese *ziji* before. This pattern of binding across a local subject in the *bei* construction offers novel insights for future research on Chinese LDA.

The paper is organised as follows: Section 2 provides basic concepts and properties of binding of *ziji*; Section 3 reviews existing accounts of LDA, with a focus on the “mixed” approach; Section 4 and Section 5 present the syntactic analysis of the *bei*-construction and introduce intermediate binding; Section 6 examines properties of intermediate binding in the *bei*-construction; Section 7 is the conclusion.

## 2. Chinese LDR *ziji* and Condition A

Anaphors such as English *himself* are canonically constrained by Standard Condition A of the Binding Theory (1), as illustrated in (2), where *himself* cannot refer to the matrix subject *Bill* as *Bill* is outside of the local domain.

(1) Condition A: An anaphor is bound in its local domain.

(Chomsky 1981; Charnavel & Sportiche, 2016, a.o.)

(2) Bill<sub>i</sub> thinks [<sub>CP</sub> that [<sub>IP</sub> John<sub>j</sub> [<sub>VP</sub> believes himself<sub>\*i/j</sub>]]].

However, some instances of anaphors in many languages, including Chinese *ziji*, escape Condition A. Such anaphors have the ability to take local and non-local binders, as in (3), in which a binding relation crossing over the local subject is licit. *Ziji* in this instance is a LDA as it takes the matrix subject, i.e., *John*, as its antecedent.

(3) John<sub>i</sub> zhidao [<sub>CP</sub> [<sub>IP</sub> Bill<sub>j</sub> bu [<sub>VP</sub> xihuan *ziji* <sub>i/j</sub>]]].

John know Bill not like self

‘John knows that Bill doesn’t like him/himself.’

(Xu, 1993, p. 125)

Despite the possibility of long-distance (henceforth LD) binding, it is not the case that any sentence-internal NP can qualify as an antecedent. Tang (1989) observes that potential binders of *ziji* have four unique properties, which are not exhibited by antecedents of polymorphemic reflexives like *taziji* ‘himself/herself/itself’, which obey Condition A.

First, subject orientation is the requirement for a potential antecedent of *ziji* to be a subject. In other words, the LDR *ziji* is subject-oriented, and cannot be bound by an object, as shown in (4)<sup>1</sup>:

(4) Zhangsani song Lisij yizhang *Ziji*<sub>i/\*j</sub> de xiangpian.

Zhangsan give Lisi one self DE picture

‘Zhangsani gave Lisij a picture of himself<sub>i/\*j</sub>.’

(Tang, 1989, p.99)

Second, the animacy effect refers to the requirement that antecedents of *ziji* must be animate. An inanimate c-commanding antecedent is ruled out, as illustrated in (5) below:

- (5) [[Zhangsan<sub>i</sub>de] jiaoao]<sub>j</sub> hai-le *Ziji*<sub>i/\*j</sub>.  
 Zhangsan DE pride hurt-LE self  
 ‘Zhangsan<sub>i</sub>’s pride<sub>j</sub> harmed himself<sub>i/\*j</sub>.’ (Xue et al., 1994, p.4)

Third, the fact that in (5) *ziji* takes reference from the non-c-commanding NP *Zhangsan*, rather than the c-commanding subject *Zhangsan de jiaoao* ‘Zhangsan’s pride’, indicates that the c-command condition is too strong. Tang (1989, p.101) proposes that binding of *ziji* is subject to a sub-commanding condition, as stated in (6):

- (6)  $\beta$  SUB-COMMANDS  $\alpha$  if and only if  
 a.  $\beta$  c-commands  $\alpha$ , or  
 b.  $\beta$  is an NP contained in an NP that c-commands  $\alpha$  or that sub-commands  $\alpha$ , and any argument containing  $\beta$  is in subject position.

In (5), the c-commanding subject cannot be an antecedent of *Ziji* due to the animacy condition. *Zhangsan*, in contrast, is a licit binder because it is animate and is contained in the c-commanding subject, and thus sub-commands *ziji*.

Finally, binding of *ziji* displays the blocking effect (Huang & Tang, 1991; Tang, 1989): LD binding of *ziji* is possible only if all potential antecedents agree with one another in phi-features (e.g., person, gender and number); otherwise, long-distance binding is blocked, as illustrated in the contrast pair below:

- (7) a. Zhangsani renwei [<sub>CP</sub> [<sub>IP</sub> Lisi<sub>j</sub> hai-le *Ziji*<sub>i/j</sub>]].  
 Zhangsan think Lisi hurt-LE self  
 ‘Zhangsan thought that Lisi hurt himself/him.’  
 b. Zhangsan<sub>i</sub> renwei [<sub>CP</sub> [<sub>IP</sub> wo/ni<sub>j</sub> hai-le *Ziji*<sub>\*i/j</sub>]].  
 Zhangsan think I/you hurt-LE self  
 ‘Zhangsan thought that I/you hurt myself/yourself/\*him.’ (Huang & Tang, 1991, pp.263-264)

In (7b), the matrix subject *Zhangsan* does not match the local binder (i.e., the subject of the embedded clause) in person (third-person versus first/second person), so LD binding is blocked. By contrast, *Zhangsan* in (7a) can be the antecedent of *ziji* as there is no phi-feature conflict between the local binder Lisi and the remote binder *Zhangsan*.

It is noteworthy that the blocking effect is asymmetrical in terms of person or number (Pan, 2001; Xu, 1993). While first or second person pronouns can block third person pronouns or NPs from the binding of LD *ziji*, third person NPs do not, as exemplified in (8).

- (8) a. Zhangsan<sub>i</sub> shuo wo/ni<sub>j</sub> hai-le *Ziji*<sub>\*i/j</sub>.  
 Zhangsan said I/you hurt-LE self  
 ‘Zhangsan said that I/you hurt myself/yourself/\*him.’  
 b. Wo/Ni<sub>i</sub> shuo Zhangsan<sub>j</sub> hai-le *Ziji*<sub>i/j</sub>.  
 I/you said Zhangsan hurt-LE self  
 ‘I/you said that Zhangsan hurt me/you/himself.’

The person asymmetry can be explained by adopting a pragmatic account which capitalises on the prominent status of first and second person (speaker/addressee) antecedents, following Kuno’s direct-

discourse hypothesis (1972). In this analysis, LD *ziji* is a logophor, a type of linguistic element specialised for referring to an antecedent whose speech, mental status, point of view or consciousness of an event is reported (Clements, 1975). *Ziji* as a logophor is initiated as wo ‘I’ in the interpretation of direct- discourse, and (8a) thus would have the underlying representation as stated in (9).

- (9) Zhangsan shuo, ‘Wo/Ni hai-le wo.’  
 Zhangsan said I/you hurt-LE I  
 ‘Zhangsan said, ‘I/you hurt I.’

In (9), there are two occurrences of wo ‘I’. The first wo ‘I’ refers to the speaker of the whole sentence, the external Source, whereas the intended interpretation of the second wo ‘I’ is the matrix subject *Zhangsan*, the internal Source. Such a perspective conflict between the external Source and the internal Source would be the reason why the LD binding of *ziji* with the third-person pronoun is blocked by the first- person/second-person pronoun. This in turn explains the acceptability of (8b), in which replacing *ziji* with wo ‘I’ for the direct-discourse complement does not raise any perspective conflict.

In sum, there are four properties of *ziji* identified in the literature, i.e., subject orientation, the animacy effect, sub-command and the blocking effect. The next section briefly reviews existing accounts that aim to explain these properties displayed by *ziji*.

### 3. Existing Accounts for LD *Ziji*

There are three lines of approaches to LD *ziji*: syntactic accounts, pragmatic accounts and “mixed” accounts. This section provides a very brief review of the other two approaches before turning to the predictions of the “mixed” approach, which is of interest in this study.

#### 3.1 Syntactic accounts and pragmatic accounts

Early syntactic accounts included the parameterisation approach (Manzini & Wexler, 1987), the head-movement analysis (see Battistella, 1989; Cole et al., 1990, a.o.) and the IP adjunction analysis (Huang & Tang, 1991). These accounts rescued Condition A in LDA by either expanding the binding domain or positing covert, successive-cyclic movements. Despite taking distinct theoretical positions, all these accounts ultimately reduce LDAs like *ziji* to plain anaphors constrained by Condition A. The syntactic approach has its limitations. None of the accounts captures or explains all properties of LDA, especially the asymmetrical blocking effect (see Charnavel, 2019, for a detailed review of the syntactic approach). Accounts under the discourse-based line (Huang et al., 1984, a.o.) hold that *ziji* is logophoric, subject to discourse, rather than syntactic licensing conditions. This proposal provides an elegant solution to the asymmetry observed in the blocking effect by virtue of the notion of logophoric perspective, as discussed in the last section. However, the discourse-based approach has little to say when it comes to the behaviour of *ziji* in non-logophoric use (see Chen, 1992).

#### 3.2 The “Mixed” account

Incorporating both formal and functional views, the “mixed” account identifies two uses of *ziji*. Following Kuno (1972), Pollard & Sag (1992) and Xue et al. (1994), Huang & Liu (2001) proposed the “dual status” hypothesis for *ziji*, in which a distinction is made between anaphoric and logophoric *ziji*. The dividing line is the local domain. It is claimed that *ziji* is a syntactic anaphor when it is locally bound, whereas it is a logophor when LD binding happens. In the same vein as Huang & Liu, Charnavel and her colleagues (2016, 2018, 2019) proposed a logophoricity-based hypothesis, reducing LD anaphors



- (14) \*[Zhangsan de shibai] biaoshi tamen dui Ziji mei xinxin.  
 Zhangsan DE failure indicate they to self not confidence  
 \*‘Zhangsan’s failure indicates that they have no confidence in himi.’

(Huang & Liu, 2001)

#### 4. The Syntax and Semantics of the Bei-construction

As is widely accepted in Chinese syntax, there are two derivationally different forms of the *Bei*-construction, depending on the presence or absence of the post-*bei* NP (AGENT). Examples of distinct forms of the construction are given in (15)-(16) below.

- (15) The long passive: NP *bei* NP VP

John bei Bill da-le.  
 John Bei Bill hit-LE  
 ‘John got hit by Bill.’

- (16) The short passive: NP *bei* VP

John bei da-le.  
 John Bei hit-LE  
 ‘John got hit.’

(Huang et al., 2009)

We focus on the long-passive as explicated in (15), a construction where the passivised subject (THEME) appears in pre-*bei* position and the overt agent (corresponding to the English by-phrase) appears in post-*bei* position.

While the categorial status of *bei* is controversial, the assumption that *bei* is a semi-functional verb has gained greater popularity in the literature (Chiu, 1993; Huang, 1999; Tang, 2001, 2004, 2008, a.o.). Huang et al. (2009) proposed that the derivation of long passives involves movement of a null operator and predication (akin to English *tough*-movement). The passivised subject is generated as the external argument of *bei* (a light verb). *Bei* selects a non-finite clause where a null operator coindexed with the matrix subject binds the trace in the internal argument position. The syntactic structure of (15) is given in (17) below.

- (17) [<sub>TP</sub> John ... [<sub>VP</sub> *bei* [<sub>IP</sub> Op<sub>i</sub> [<sub>TP</sub> Bill [ ... [<sub>VP</sub> da-le t<sub>i</sub> ]]]]]].  
 John Bei Bill hit-LE  
 ‘John got hit by Bill.’

The null operator structure is interpreted as a secondary predicate: a property, rather than a full proposition. The semantics of *Bei* could be paraphrased as: ‘my specifier ends up with the property of ...’ (Huang et al., 2009, p. 123).

#### 5. The Phasal Composition of Bei-passives

We adapt Huang et al.’s (2009) analysis to fit it with current assumptions about the phasal status of CP and vP in a multiple-spell out model of syntactic computations (Chomsky, 2001, 2004, 2008). Our goal is to identify the role that the complex, iterated vP structure of the *bei*-construction plays in the binding possibilities of *ziji*.

We assume the structure of (15) to be as follows:

- (18) [<sub>TP</sub> John<sub>i</sub> [<sub>VP</sub> John<sub>i</sub> *bei* [<sub>IP</sub> Bill [<sub>VP</sub> Op<sub>i</sub> [<sub>VP</sub> Bill<sub>j</sub> [<sub>VP</sub> da-le t<sub>i</sub> ]]]]]]].  
 ‘John got hit by Bill.’

*Bei* selects a defective clausal complement, not a CP phase, which is interpreted, following Huang et al.’s analysis, as a property rather than a proposition. Liu (2016), in line with Tang (2001), demonstrates that the structure following *bei* is a non-finite clause containing a vP. We assume the null operator to be right adjoined to the lowest vP (rather than to the intermediate IP) since the adjunction site should be a spell-out domain. Two subjects are available in this construction, originating as specifiers of different vP layers. The link between the highest subject and the thematic position inside the lowest predicate is not direct, but rather results from the mediation of a null operator generated at the edge of the lower vP.

Turning to the consequences of this structure for binding relations involving *ziji*:

- (19) Zhangsani *bei* [<sub>VP</sub> Op<sub>i</sub> [<sub>VP</sub> Lisi<sub>j</sub> guan [zai *ziji*<sub>i/j</sub> de jiali]]].  
 Zhangsan *Bei* Lisi lock at self DE home  
 ‘Zhangsan got locked by Lisi in his/his own home.’

In (19), *ziji* can take two potential antecedents: the overt local subject *Lisi* and the null operator coindexed with the more distant *bei*-subject *Zhangsan*. Both relations are seemingly local but only the former is a case of direct binding. We argue that binding of *Ziji* by the matrix subject *Zhangsan* is *intermediate*: neither local nor long-distance, but rather indirect (i.e., with the mediation of the null Op).

That the binding relation between *ziji* and *Zhangsan* is not local is straightforward: *Zhangsan* is outside of *ziji*’s local binding domain. One may argue that the null operator is able to locally bind *ziji* (within the same spell-out domain) as *Zhangsan* remains a possible binder when *ziji* is replaced with *ta-ziji* ‘himself’, as in (20). *Ta-ziji* ‘himself’ is a polymorphemic reflexive in Chinese and is canonically considered to obey Condition A.

- (20) Zhangsani *bei* [<sub>VP</sub> Op<sub>i</sub> [<sub>VP</sub> Lisi<sub>j</sub> guan [zai ta-*Ziji*<sub>i/j</sub> de jiali]]].  
 Zhangsan *Bei* Lisi lock at himself DE home  
 ‘Zhangsan got locked by Lisi in his/his own home.’

However, as noted by Charnavel and Huang (2018), *ta-Ziji* can take antecedents outside of its binding domain such as (21), and thus *ta-Ziji* cannot serve as a safe baseline for identifying local binding.

- (21) Zhangsan<sub>i</sub> shuo naben shu fang zai ta-*Ziji*<sub>i</sub> de jiali.  
 Zhangsan say that-CL book put at himself DE home  
 ‘Zhangsan said that book was put at his own home.’

(Pan, 1998)

## 6. Intermediate Binding of *Ziji* in the *Bei*-construction

We have seen that in the long-*bei* passive *ziji* can be bound by the matrix subject outside of the local binding domain. This section addresses the following questions:

- When *ziji* is bound by the pre-*bei* NP,  
 A) Is *ziji* an ‘exempt’ anaphor?  
 B) Is the relation a case of LD binding?  
 C) What are the properties of *ziji* in such a binding relation?

### 6.1 *Ziji* in the long-*bei* passive need not be a logophor

Question A and Question B are related. According to the mixed accounts, when *ziji* is LD bound, it is a logophor, and when *ziji* is in logophoric use, it builds LD binding relation. If we can figure out the answer to Question A, we will know the answer to Question B. Our answer to Question A is, *ziji* need not be a logophor when it takes antecedence from the matrix subject of the long passive.

Recall that the “mixed” accounts (Huang and Liu’s Dual Status Hypothesis and Charnavel’s logophoricity-based hypothesis) hold that LD binding involves logophoricity. In the LD reading the binder of *ziji* must be interpreted as the perspectival centre whose mental state is *being* reported. Sell (1987) systematises the distinction between different logophoric centres that can be assimilated to logophoricity: a. Source: the one who is the intentional agent of the communication; b. Self: the one whose mental state or attitude the proposition describes; c. Pivot: the one with respect to whose (time-space) location the content of the proposition is evaluated. (22a) is a case of Source and (22b) Self.

- (22) a. Zhangsan<sub>i</sub> shuo [<sub>TP</sub> Lisi<sub>j</sub> xihuan *Ziji*<sub>i/j</sub>].  
 Zhangsan say Lisi like self  
 ‘Zhangsan said that Lisi liked him/himself.’
- (22) b. Zhangsan<sub>i</sub> ganjue [<sub>TP</sub> Lisi<sub>j</sub> xihuan *Ziji*<sub>i/j</sub>].  
 Zhangsan feel Lisi like self  
 ‘Zhangsan felt that Lisi liked him/himself.’

Accordingly, if consciousness is absent, the LD coreferential interpretation is unavailable, such as the example in (23)

- (23) ??Zhangsan<sub>i</sub> kanjian [<sub>TP</sub> *Ziji*<sub>i</sub> bei naxie ren shasi-le].  
 Zhangsan see self Bei those people kill-LE  
 ??‘Zhangsan saw himself *being* killed by those people.’

Imagine a scenario in which *Zhangsan* got stabbed behind his back. The context strongly indicates that *Zhangsan* can hardly witness the event of himself *being* killed. This means that no consciousness is involved; the consciousness requirement on *ziji* in logophoric use is thus not met.

The contrast between (22) and (23) suggests that the “mixed” approach’s generalization is correct on the status of *ziji* in LD binding: long-distance binding of *ziji* is constrained by logophoricity. Only a logophoric centre can serve as a long-distance antecedent for *ziji*.

Logophoric, non-locally bound *ziji* has typically been studied in complement clauses introduced by attitude verbs (*say, know, think, feel, etc.*), as shown in (22). However, the *bei*-construction doesn’t normally qualify as an attitude context, since the meaning of *bei* is simply ‘acquire or end up with the property of...’ and the argument serving as antecedent for *ziji* is a theme of whom the event of acquiring the property in question is predicated. For example, in (19), repeated here in (24) below, the possible antecedent *Zhangsan* is not necessarily aware of the action (i.e., got locked in a place) performed on him, nor are *Zhangsan*’s feelings, attitudes or point of view reported here.

- (24) Zhangsan<sub>i</sub> bei [<sub>VP</sub> Op<sub>i</sub> [<sub>VP</sub> Lisi<sub>j</sub> guan [zai *ziji*<sub>i/j</sub> de jiali]]].  
 Zhangsan Bei Lisi lock at self DE home  
 ‘Zhangsan got locked by Lisi in his/his own home.’

We now see that *ziji* does not necessarily behave like a logophor in the long-*bei* passive voice. This leads to the answer to Question B. That is, in the *bei*-construction, when binding crossing over the local



domain happens, it need not be an instance of LD binding. In (22), however, *ziji*'s non-local binding relation with *Zhangsan* is a case of LD binding. Why is there such a contrast between (22) and (24)? In (22), a tensed TP intervenes between *ziji* and the matrix subject *Zhangsan*. In contrast, in (24) *ziji* and the matrix subject is structurally too close, as the intervenor is a vP. We call this type of non-local, non-LD binding *intermediate* binding, i.e., indirect binding with the mediation of the null operator.

## 6.2 Assessing the properties of *Ziji* in intermediate binding

Turning to Question C, does intermediate binding in the *bei*-construction behave in the same way as LD binding, or local binding? This question is (partly) addressed by using four diagnostics for logophoric *ziji*, following Charnavel's strategies for identifying exempt anaphors. The four diagnostics and corresponding predictions for *ziji* in anaphoric use and logophoric use are summarised in Table 1. The behaviour of intermediate binding is evaluated against the diagnostics to explore its properties. Results reveal that *ziji* indeed is not necessarily a logophor in intermediate binding, as it can take a remote antecedent that is an inanimate or a non-perspective centre. Another piece of evidence comes from the fact that the blocking effect is not found in intermediate binding.

Table 1

*Diagnostics for Ziji as a Logophor*

	Inanimate antecedent	Non-perspective centre antecedent	Blocking effects	Sub-commanding antecedent
Anaphoric <i>ziji</i>	√	√	×	×
Logophoric <i>ziji</i>	×	×	√	√

Inanimacy test is the most reliable test for identifying logophoric LDRs cross-linguistically. A logophoric anaphor can't take inanimate antecedents because its antecedent must be aware of the event denoted by the clause containing it. The second test is the perspective centre test: logophoric anaphors can't take a LD binder that is not a perspective centre. This is because logophoric anaphors must occur in the scope of a logophoric operator expressing the first-personal perspective of the antecedent. The blocking effect test and the subcommand test draw upon the unique properties of LD *Ziji*. Recall that under the logophoricity-based account, the blocking effect and subcommand are a discourse effect, rather than a syntactic reflex of agreement. (Asymmetrical) blocking effects arise due to intervention of a first/second person subject, which results in perspective conflicts. Similarly, subcommand boils down to logophoric exemption, rather than a syntactic relation. *Ziji* can only be bound by a sub-commander if the inanimate NP containing the sub-commander creates logophoric conditions. By contrast, when *Ziji* is locally bound, it is not a logophor and thus does not display discourse effects. Plain *Ziji* can take an inanimate or a non-perspective centre NP as its binder. No blocking effect is expected, and sub-commanders are not available as antecedents-plain *Ziji* can only c-commanding NPs as its binders.

### 6.2.1 Acceptability of inanimate antecedent

The example in (25) shows that *Ziji* can take antecedence from an inanimate pre-*bei* NP, a non-local binder. This suggests that the matrix subject in the *bei*-construction does not have to be animate to bind *Ziji*. When the matrix subject is an inanimate, e.g., in (25), it cannot be a logophoric centre, and thus *Ziji* is not a logophor in this case. Charnavel & Huang (2018) also found *Ziji* can take an inanimate as its antecedent, contrary to the animacy effect observed by Tang (1989), i.e., only animates qualify as antecedents of *Ziji*. The animacy effect is best interpreted as a logophoricity effect: when *Ziji* takes an

antecedent outside of the local domain, binding is constrained by logophoricity, and thus only animate *Ziji* can be licensed.

- (25) Zhege rengong shengtaixitong bei yanjiurenyuan qieduan-le Zijii-de  
 This artificial ecosystem Bei researcher cut-LE self-DE  
 nengliang gongying.  
 energy supply  
 ‘This artificial ecosystem got its own energy supply cut by the researchers.’

### 6.2.2 Acceptability of non-perspective centre antecedent

Logophoric anaphors cannot have non-local antecedents that are not perspective centres of the clause. The example in (26) shows *Ziji* can be bound by a remote binder *Su* that is not a perspective centre.

- (26) Context: *Su*, *Ou’yang* and *Wang* are three famous litterateurs and politicians in the earlier Song Dynasty (960-1127). They appreciated each other’s literature talent while holding different political views. There was a time *Su* was banished from court by *Wang*.  
*Ou’yang* beitan *Su* bei *Wang* bianchu-dao-le zijii-de laojia.  
*Ou’yang* lament *Su* BEI *Wang* exile-LE self’s hometown  
 ‘*Ou’yang* was very sorry that *Su* was sent into exile (back to) his own home by *Wang*.’

There are three NPs available as antecedents in (26), i.e., *Ou’yang*, *Su* and *Wang*. Binding relations of these three antecedents with *Ziji* are distinct. *Wang-Ziji* is an instance of local binding as *Wang* is contained within the binding domain (i.e., the lowest vP/IP). The locally bound *Ziji* is a plain anaphor. *Ou’yang-Ziji* is a case of LD binding, subject to logophoricity. *Ou’yang* whose mental state is expressed is the perspective centre of the whole sentence, and *Ziji* is in logophoric use in this case. Binding between *Su* and *Ziji* is non-local, non-long distance. *Su* is not a local binder due to intervention of the intermediate vP headed by *bei*. Nor is *Su* a LD binder because the passive does not create any logophoric conditions. *Su* is not a perspective centre because the semantics of *bei* does not make it possible for the clause to express the perspective of *Su*. When bound by the non-perspective centre NP *Su*, *Ziji* is not a logophor. Is *Ziji* in this case a plain anaphor then? The answer is not straightforward. It is a plain anaphor if the binding domain is extended from the smallest XP containing *Ziji* to the smallest tensed TP containing it (Ronat, 1982). The consequence of such extension is that the local binding domain is the whole long-*bei* passive, and *Wang* as well as *Su* both are local binders. Reconstruction of binding domain is not desirable out of considerations of parsimony. We take binding like *Su-Ziji* as an instantiation of intermediate binding, i.e., indirect as a result of intervention of a defective vP. Further research will focus on similarities and differences between plain *Ziji* and intermediately bound *Ziji*.

### 6.2.3 No blocking effect in intermediate binding

The blocking effect is a property of *Ziji* in LD binding, rising from perspective conflicts caused by intervention of a first/second person subject. No such effect is found in the *bei* passive that involves intermediate binding, as illustrated in (27). The antecedent for *Ziji* can either be the first-person/second person pronoun *wo/ni* ‘I/you’ following *bei* or the matrix subject *Zhangsan*.

- (27) Zhangsani bei wo/ni guan zai Zijii<sub>i,j</sub> decheli.  
 Zhangsan Bei I/you shut in self De car-inside  
 ‘Zhangsan was shut up by me/you in his own/my/your car.’

Why is there no blocking effect in intermediate binding? Assuming that the blocking effect is indeed explained by logophoricity then the lack of a blocking effect suggests that the intermediate binder is not a perspective centre and the binding relation is not logophoric. In other words, if no blocking effect is shown, *ziji* in that case should not be treated as a logophor. Therefore, intermediately-bound *ziji* is not a logophor.

#### 6.2.4 No subcommand in intermediate binding

If subcommand is constrained by logophoricity, a sub-commander is a possible binder only when the NP containing the sub-commander creates logophoric conditions. The example in (28) below shows that sub-commanders cannot be picked out as intermediate binders (at least in the *bei*-construction), suggesting *Ziji* in this case is not a logophoric anaphor. In (28), *Ziji* can be bound only by the local binder Lisi but not the sub-commanding NP Zhangsan.

- (28) [Zhangsani de xin] bei Lisij jigei-le Ziji<sub>\*i/j</sub>.  
 Zhangsan DE letter Bei Lisi send-to-LE self  
 ‘Zhangsan’s letter was sent by Lisi to himself.’

Crucially, the restriction on subcommand is not due to intervention. In (29), a short-*bei* passive with no overt intervening agent, the *bei*-subject is also an inaccessible antecedent (*ziji* in this case is freely bound and by default, it refers to the speaker of the whole sentence). The inaccessibility of *Zhangsan* in (28)-(29) is due to the lack of logophoricity.

- (29) \*[Zhangsan<sub>i</sub> de xin] bei jigei-le Ziji<sub>i</sub>.  
 Zhangsan DE letter Bei send-to-LE self  
 \*‘Zhangsan’s letter was sent to himself.’

However, it is possible that *ziji* is bound by a sub-commander in the *bei*- construction, even if the c-commanding NP containing the sub-commander does not express mental status or attitudes of the antecedent, as exemplified in (30), where *ziji* can only refer to the sub-commander *Zhangsan*.

- (30) [Zhangsani (de) maichuqu de fangzi] bei gongzuorenyuanj  
 Zhangsan (DE) sold-out DE house Bei staff  
 hua-hui-le Ziji<sub>i/\*j</sub> mingxia  
 transfer-back-to-LE self’s under-name  
 ‘The ownership of the house Zhangsan sold got transferred back to him by the staff.’

The availability of Zhangsan and the unavailability of gongzuorenyuan ‘staff’ as an antecedent can be explained by Kuno (1972)’s system. Zhangsan is reported by the external speaker as the empathy locus, to which the deictic element -hui ‘back to’ refer. Since this Zhangsan-*Ziji* binding relation is subject to logophoric condition, it is an instantiation of LD binding.

To sum up, a sub-commander is an accessible antecedent in LD binding but is not an accessible antecedent in intermediate *bei*-binding.

### 6.3 Summary

Results of testing intermediately-bound *ziji* using diagnostics for logophoric anaphors are summarised in Table 2.

Table 2

*Properties of Intermediately-Bound Ziji*

	Inanimate antecedent	Non-perspective centre antecedent	Blocking effects	Sub-commanding antecedent
Intermediately-bound <i>ziji</i>	√	√	×	×

The behaviour of *Ziji* in intermediate binding is distinct from logophoric *Ziji* in LD binding, while similar to anaphoric *Ziji* in local binding. We interpret the results as such that *Ziji* need not be a logophor in *bei* passives, yet it requires the mediation of a null operator at the vP-edge. *Ziji* may have a third status that binding of *Ziji* by the pre-*bei* subject is intermediate: neither local nor long-distance, but rather indirect, i.e., with the mediation of the null operator. The cause of the difference between intermediate binding and LD binding could be a difference between CP and vP phases. Unlike the complement of an attitude-verb *being* a proposition, the *bei*-complement is a property.

We conclude that the vP-edge operator binding *ziji* does not have to be logophoric.

## 7. Conclusion

This study investigated binding of Chinese reflexive *Ziji* in the long-*bei* passive. Using a readapted phase-based analysis of the *bei*-construction and diagnostics for logophoric anaphors, we found that *Ziji* is in a third status when it is bound by the pre-*bei* subject. Binding in this case is neither local nor long-distance, but intermediate. Therefore the logophoricity-based hypothesis that reducing all non-local anaphors to logophors is too strong. Intermediate, or indirect binding of *Ziji* by the matrix subject of the *bei*- construction is mediated by the null operator generated at the edge of vP. We also demonstrate that intermediately-bound *Ziji* need not be a logophor. Rather, it behaves in a way similar to a plain anaphor: it can take inanimates and NPs that are not perspective centres as antecedents, but no sub-commanders are accessible binders if logophoric conditions are absent, and no blocking effect is observed in intermediate binding. Further research will look into other constructions that may involve intermediate binding, e.g., the *ba*-construction, to investigate distribution and properties of intermediate binding and seek accounts for this type of binding.

## Abbreviations

*Bei*: passive marker *bei*

CL: classifier

CP: complementiser phrase

DE: pre-nominal modification marker *de*

IP: inflectional phrase LD: long-distance

LDA: long-distance anaphora LDR: long-distance reflexive

LE: perfective marker or sentence-final particle NP: noun phrase

t: trace of moved element TP: tense phrase

vP: light verb phrase VP: verb phrase

XP: full syntactic phrase of type X

## Note

1. Some researchers (e.g., Pan, 1998) believe that the object *Lisi* is an *accessible* antecedent. The author's intuition as a Chinese native speaker is that *ziji* cannot refer to *Lisi*.

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# 近距、中距与长距约束：以中文反身代词“自己”在长被动句的行为为例

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## 摘要

本研究探讨了中文长距反身代词“自己”的约束问题。通过分析“自己”在长被动句中有关局部性 (locality) 和语内传递 (logophoricity) 的表现，我们评估了用以解释长距约束的“混合”方法 (Charnavel, 2019; Huang & Liu, 2001; Huang 等, 2009)。被动句在中文回指的领域是一个研究不足的结构。我们的分析显示：声称可建立长距约束关系的反身代词实质上是普通的回指或语内传递语的“混合”方法不足以完全解释“自己”在被动句中的行为。我们认为，当指代长被动句的最高级主语时，由于局部约束和语内传递效应的缺失，“自己”既不是一个普通的回指，也不是一个语内传递语。我们认为，长距反身代词“自己”可能有第三种状态：中距约束。这种约束关系既不是局部的，也不是远距离的，而是由于一个空操作符的调解而间接产生的。后续研究将探索其他可能涉及中距约束的结构，例如把字句，以进一步研究中距约束的性质并寻求其解释。

## 关键词

长距指代，中文反身代词“自己”，被字句，局部性，语内传递

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