

# Inanimate *ziji* and Condition A in Mandarin

Isabelle Charnavel and Yujing Huang

## 1. Introduction

The distribution of many anaphors, including Mandarin *ziji*, is complicated by their sensitivity to logophoricity: such anaphors do not obey Condition A of Binding Theory (Chomsky 1986, Charnavel and Sportiche 2016, a.o.) when they occur in clauses expressing the perspective of their antecedent (Sells 1987, Huang and Liu 2001, Charnavel 2017a, a.o.). It is therefore necessary to disentangle logophoric from non-logophoric instances of anaphors to determine their binding properties.

One strategy for that is to examine inanimate anaphors, as inanimates, which lack a mental state, cannot be logophoric (Charnavel and Sportiche 2016). But this strategy seems inapplicable to Mandarin *ziji*, which is standardly claimed to be obligatorily animate (Tang 1989, a.o.).

The goal of this paper is to question this standard claim and to show, on the basis of experimental evidence, that Mandarin *ziji* can in fact be inanimate. The distribution of inanimate *ziji* thus allows us to reexamine the binding domain of *ziji* controlling for the logophoricity confound, as well as some of its purported binding properties such as subcommand and subject orientation. The results of the experiment confirm the standard definition of the binding domain of *ziji* (with some complication in the case of subjects of embedded clauses) and reveal that subcommand is an artifact of logophoricity while subject orientation is independent from it.

## 2. Background and issues: The binding properties of *ziji*

### 2.1. Long distance binding or logophoric exemption?

Anaphors such as English *himself* are canonically considered to be subject to locality conditions defined by Condition A (Chomsky 1986, Charnavel and Sportiche 2016, a.o.). But it has been crosslinguistically observed that some instances of anaphors escape this requirement (so-called ‘long distance’, ‘free’, ‘exempt’ or ‘logophoric’ anaphors): this is the case of English *himself* (Pollard and Sag 1992, Reinhart and Reuland 1993, a.o.) as in (1) or Icelandic *sig* (Thráinsson 1976, Maling 1984, a.o.) as in (2), among many others, which are not locally c-commanded by their antecedent.

- (1) a. In her<sub>i</sub> opinion, physicists like herself<sub>i</sub> are rare. (adapted from Kuno 1987)  
b. Bill<sub>i</sub> said that the rain had damaged pictures of himself<sub>i</sub>. (adapted from Pollard and Sag 1992)

- (2) Jón<sub>i</sub> segir að María elski sig<sub>i</sub>.  
John says that Mary loves<sub>SUBJ</sub> REFL<sup>1</sup>  
‘John<sub>i</sub> says that Mary loves him<sub>i</sub>.’ (from Thráinsson 1976)

---

\* Isabelle Charnavel, Harvard University, [icharnavel@fas.harvard.edu](mailto:icharnavel@fas.harvard.edu). Yujing Huang, Harvard University, [yujinghuang@g.harvard.edu](mailto:yujinghuang@g.harvard.edu). Thanks to Jim Huang and Dominique Sportiche, as well as the audiences of Harvard LingedIn, Glow-in-Asia XI and WCCFL35 for helpful discussion and comments. We are also grateful to the 56 participants of our survey. This work has been supported by the National Science Foundation under grants 1424054 and 1424336.

<sup>1</sup> The following abbreviations are used in the glosses throughout the paper: ASP=aspectual marker; CL=classifier; INT=intensifier; NEG=negation; REFL=reflexive; SUBJ=subjunctive. Also note that the Mandarin elements *ba* and *de* are simply glossed as BA and DE. The *ba* construction roughly expresses an object being affected (see Huang *et al.* 2009: chapter 5, a.o.) and *de* serves as a relativizer and is used to form possessive constructions.

The same holds for the Mandarin anaphor *ziji*: as shown in (3), *ziji* need not be locally bound.

- (3) Zhangsan<sub>i</sub> renwei Lisi hai-le ziji<sub>i</sub>.  
 Zhangsan think Lisi hurt-ASP self  
 ‘Zhangsan<sub>i</sub> thought that Lisi hurt him<sub>i</sub>.’ (from Huang and Tang 1991)

One first type of hypothesis that was proposed to account for data like (3) (and (2)) (Pica 1987, Cole *et al.* 2006, Reuland 2006a-b, a.o.) builds on the morphological variation among anaphors: long distance binding was claimed to be a property of simplex, subject-oriented anaphors like Icelandic *sig* or Mandarin *ziji*. This hypothesis implies that the size of the binding domain correlates with the morphological complexity of anaphors, and that different types of binding domains must be postulated (Manzini and Wexler 1987, a.o.): while the domain of complex anaphors like *himself* is (roughly) the smallest clause containing the anaphor, the domain of simplex anaphors can be the tensed clause (for *sig*) or even the whole sentence (for *ziji*).

This type of hypothesis does not only go against ideals of parsimony, it also turns out to be incorrect, at least for Mandarin *ziji* (probably more generally, see Charnavel and Sportiche 2017), as shown by Huang and Liu 2001, among others. First, it is not the case that *ziji* has to be bound as shown in (4), where *ziji* does not even have an antecedent in the sentence.

- (4) Zhe-ge xiangfa chule ziji zhiyou san-ge ren zancheng.  
 this-CL idea besides REFL only three\_CL people agree  
 ‘As for this idea, besides myself, only three other people agree.’ (Huang & Liu 2001)

Second, *ziji* can only be long distance bound under certain discourse conditions related to perspective. The antecedent of *ziji* is a perspective center in examples like (4) (the speaker) and (3) (the attitude holder, i.e. subject of the attitude verb *renwei* ‘think’). The contrast between (5)a and (5)b (observed by Huang and Liu 2001) further demonstrates that *ziji* must be perspectival: *ziji* can be long distance bound by *Zhangsan* only in (5)a where *Zhangsan* is the perspective center of the relative clause containing *ziji*, not in (5)b where *Zhangsan* is not a subject of consciousness at the time of the event described by that clause.

- (5) a. Zhangsan<sub>i</sub> kuajiang-le changchang piping ziji<sub>i</sub> de naxie ren.  
 Zhangsan praised\_ASP often criticize REFL DE those persons  
 ‘Zhangsan<sub>i</sub> praised those people who criticize him<sub>i</sub> a lot.’  
 b. ?? Zhangsan<sub>i</sub> kuajiang-le houlai sha si ziji<sub>i</sub> de naxie ren.  
 Zhangsan praised\_ASP later kill die REFL DE those persons  
 ‘Zhangsan<sub>i</sub> praised those people who later killed him<sub>i</sub>.’ (Huang & Liu 2001)

Thus, *ziji* is not subject to long distance binding, but to logophoric exemption: *ziji* is exempt from the locality conditions imposed by Condition A when it is logophoric, i.e. when it occurs in a clause expressing the perspective of its antecedent (cf. Clements 1975, Sells 1987, Charnavel 2017a, a.o.). Like many other anaphors, *ziji* therefore exhibits two behaviors (Charnavel and Sportiche 2016): it behaves either like a plain anaphor subject to Condition A (in which case it need not be logophoric), or like an exempt anaphor subject to logophoric conditions (in which case it need not be locally bound<sup>2</sup>).

## 2.2. Distinguishing between plain and exempt *ziji*: The inanimacy strategy

Given that plain and exempt *ziji* are morphologically identical, this raises the issue of how to distinguish between instances of plain *ziji* and instances of exempt *ziji*. Indeed, the definition of Condition A is not known a priori (so it would be circular to be based on its standard definition to

<sup>2</sup> At least superficially: see Charnavel 2017a for a unified analysis of plain and exempt anaphors, where it is argued that exempt anaphors are in fact locally bound by silent logophoric operators (cf. Koopman and Sportiche 1989, Anand 2006, a.o.).

identify instances of plain *ziji*), and the definition of logophoricity is imprecise and controversial (the definition of logophoric center is too vague in the literature to serve as a basis for identifying instances of exempt *ziji*).

One strategy that has been adopted to circumvent this issue<sup>3</sup> is to use the distribution of the complex anaphor *ta-ziji* as a baseline for Condition A in Mandarin: on the basis of examples like (6), *ta-ziji* is usually considered to be an anaphor strictly obeying Condition A, unlike *ziji*.

- (6) Zhangsan<sub>i</sub> renwei Lisi<sub>k</sub> hai-le {ziji<sub>i/k</sub> / ta-ziji<sub>\*i/k</sub>}.  
 Zhangsan think Lisi hurt-ASP REFL REFL  
 ‘Zhangsan<sub>i</sub> thought that Lisi<sub>k</sub> hurt {him<sub>i</sub>/himself<sub>k</sub>}.’ (Huang and Tang 1991)

But examples such as (7), where *ta-ziji* is bound from outside its clause, question this assumption (cf. Pan 1998, Dillon *et al.* 2015).

- (7) Zhangsan<sub>i</sub> shuo naben shu fang zai ta-ziji<sub>i</sub> de jiali.  
 Zhangsan say that-CL book put at REFL DE home  
 ‘Zhangsan<sub>i</sub> said that book was put at his<sub>i</sub> home.’ (Pan 1998)

As *ta-ziji* cannot in fact serve as a safe baseline for Condition A, we here adopt the inanimacy strategy instead (first proposed by Charnavel and Sportiche 2016 for French anaphors) based on the following reasoning: even if the notion of logophoricity remains unclear, one generalization that crucially holds is that inanimates cannot be logophoric, since logophoric centers need a mental state to take perspective.<sup>4</sup> This implies that inanimate *ziji* cannot be exempt, so that Condition A in Mandarin can be determined on the basis of its distribution.

This approach however faces an obvious challenge: *ziji* is standardly considered to be obligatorily animate (Tang 1989, Xue *et al.* 1994, Huang and Liu 2001) because of examples like (8).

- (8) \*Huo<sub>i</sub> ximie le ziji<sub>i</sub>.  
 fire extinguish ASP REFL  
 ‘[The fire]<sub>i</sub> extinguished itself.’ (Tang 1989)

But it is also usually claimed that even if *ziji* cannot be inanimate as an anaphor, it can be inanimate when used as an intensifier as in (9), and this dual behavior is unexpected. Moreover, natural examples such as (10) involving an inanimate *ziji* can easily be found (e.g. on the internet).

- (9) Huo ziji ximie le.  
 fire INT extinguish ASP  
 ‘The fire went out of itself.’ (Tang 1989)

- (10) [Zhe ke xingxing]<sub>i</sub> you ziji<sub>i</sub> de weixing.  
 this CL planet have REFL DE satellite  
 ‘[This planet]<sub>i</sub> has its<sub>i</sub> own satellites.’

To settle the question, we therefore undertook to further investigate the acceptability of inanimate *ziji* based on a systematically controlled questionnaire.

<sup>3</sup> It is also possible to distinguish exempt *ziji* from plain *ziji* by controlling for *de se* readings and blocking effects (Huang and Liu 2001, Anand 2006, a.o.): only exempt *ziji* has to be read *de se* and exhibits blocking effects, i.e. is not licensed when a first or second person pronoun intervenes. But the subtlety of these tests makes it difficult to systematically examine the binding properties of *ziji*.

<sup>4</sup> Only mental perspective can indeed create logophoric domains (clauses in which logophoric elements can occur), as it has content (expressible by clauses). In particular, spatial perspective cannot create logophoric conditions and inanimate spatial reference points are not logophoric (see Charnavel 2017b [this volume]).

### 3. Our experimental study of inanimate *ziji*

#### 3.1. Goals

Our survey had two main goals. The first, empirical goal was to test the acceptability of inanimate *ziji*. The second, analytical goal was conditional on the positive results of the first one: in case *ziji* can be inanimate in principle, we wanted to determine its distribution to reexamine the binding properties of *ziji* (binding domain, subject orientation, subcommand) independently of logophoricity.

#### 3.2. Participants and procedure

Fifty-six native speakers of Mandarin were asked to perform grammaticality judgment tasks online (on Qualtrics) on 48 randomly ordered sentence items based on a Likert scale from 1 (unnatural) to 6 (natural). The sentences were divided into two lists so that each participant only had to judge 24 sentences and did not see two near-identical sentences (to avoid repetition effects, cf. examples (i)-(ii) of fn. 5). The questionnaire started with a consent followed by instructions explaining the notion of naturalness based on some practice examples. At the end, some questions were asked about the linguistic background of participants (esp. about their native language(s) and any other language(s) they may speak).

#### 3.3. Stimuli

All sentences contained the inanimate anaphor *ziji* and its intended antecedent in various positions. Specifically, we manipulated the distance and the structural relation between the anaphor and its antecedent by varying both the position of the antecedent (matrix subject, within matrix subject, matrix object) and the position of the anaphor ((within) matrix object, (within) embedded subject, (within) embedded object) as shown in Table 1. Moreover, we distinguished between real inanimates and near animates such as *company* or *supermarket*, which refer to groups of people.

Tests	Configuration	Conditions	
		Antecedent	Anaphor
Local binding	[Subj Ant] V [Obj <i>ziji</i> ]	subject	object of same clause <sup>5</sup>
	[Subj Ant] V [Obj... <i>ziji</i> ...]	subject	within object of same clause
Subcommand	[Subj ...Ant...] V [Obj... <i>ziji</i> ...]	within subject	(within) object of same clause
Object binder	Subj V [Obj Ant] [... <i>ziji</i> ...]	object	(within) object of same clause
Long distance binding	[Subj Ant] V [DP ...N... [Obj... <i>ziji</i> ...]]	subject	(within) object of DP with subject
	[Subj Ant] V [TP [Subj... <i>ziji</i> ... ] V...]	matrix subject	(within) subject of complement clause
	[Subj Ant] V [TP Subj V [Obj... <i>ziji</i> ...]]	matrix subject	(within) object of complement clause
	[Subj Ant] V [Adj CP [Subj... <i>ziji</i> ... ] V...]	matrix subject	(within) subject of adjunct clause
	[Subj Ant] V [Adj CP Subj V [Obj... <i>ziji</i> ...]]	matrix subject	(within) object of adjunct clause

<sup>5</sup> We further distinguished between objects of resultative verbs, non-resultative verbs and BA-constructions:

- (i) Zhe ba po ju ju duan le ziji  
 this CL worn-out saw saw broke ASP REFL  
 ‘This worn-out saw sawed itself into pieces.’
- (ii) Zhe ba po ju ba ziji ju duan le  
 this CL worn-out saw BA REFL saw broke ASP  
 ‘This worn-out saw sawed itself into pieces.’
- (iii) Lazhu ranshao le ziji, zhaoliang le bieren.  
 candle burn ASP REFL lighten ASP others  
 ‘The candles burn themselves and lighten others.’

## 4. Results and theoretical consequences

### 4.1. Acceptability of inanimate *ziji*

The first result of the survey is to demonstrate that *ziji* can in fact be inanimate, contrary to what is standardly claimed (Tang 1989, a.o.). In the condition of local binding, sentences indeed received high scores as shown in Table 2 and illustrated in (11)-(12).<sup>6</sup>

	Conditions	Average	Standard deviation
<b>Local binding</b>	[Subj Ant] V [Obj <i>ziji</i> ]	4.24	1.91
	[Subj Ant] V [Obj... <i>ziji</i> ...]	4.69	1.69

(11) [Zhe ge shengwu xitong]<sub>i</sub> neng zhichi ziji<sub>i</sub> de nengliang gongji.  
 this CL biological system can support REFL DE energy supply  
 ‘[This biological system]<sub>i</sub> can support its<sub>i</sub> own energy supply.’ [5.12]

(12) [Zhe ke shu de shuguan]<sub>i</sub> tai chen, ya wan le ziji<sub>i</sub>.  
 this CL tree DE tree\_crown too heavy, burden bent ASP REFL  
 ‘[The crown of this tree]<sub>i</sub> is too heavy. It<sub>i</sub> bent itself<sub>i</sub>.’ [4.90]

### 4.2. Binding domain

The second result of the questionnaire is to confirm (for the most part) the Chomskian (1986) definition of the binding domain as the smallest XP containing the anaphor and a subject distinct from it.<sup>7</sup>

	Conditions	Average	Standard deviation
<b>Long distance binding</b>	1. [Subj Ant] V [DP ...N... [Obj... <i>ziji</i> ...]]	3.31	1.99
	2. [Subj Ant] V [TP [Subj... <i>ziji</i> ... ] V...]]	3.94	1.98
	3. [Subj Ant] V [TP Subj V [Obj... <i>ziji</i> ...]]	2.08	1.51
	4. [Subj Ant] V [Adj CP [Subj... <i>ziji</i> ... ] V...]]	3.50	2.03
	5. [Subj Ant] V [Adj CP Subj V [Obj... <i>ziji</i> ...]]	2.22	1.58

First, there is a significant difference in score ( $p < 0.001$ )<sup>8</sup> between sentences like (11)-(12) (local binding condition) and sentences like (13) where *ziji* is (within) the object of a XP (DP, complement or adjunct clause) with subject (underlined in (13)) and is bound from outside that XP (conditions 1, 3, 5 of long distance binding).<sup>9</sup>

<sup>6</sup> The reason why sentences like (8) (Tang 1989) are unacceptable is probably because the construction is rather middle or unaccusative than reflexive, and unlike *itself*, *ziji* cannot have a middle or unaccusative use. Moreover, note that sentences with inanimate *ziji* as an object such as (iv) below were rated lower than sentences with *ziji* as possessor of the object such as (11). This may be due to the fact that constructions with *ziji* as a direct object compete with constructions involving the preverb *zi-* (e.g. *zi-ran* ‘self-burn’).

(iv) [Zhe tai diannaol]<sub>i</sub> sanre buhao, shaohuai le ziji<sub>i</sub>.  
 this CL computer radiate NEG-well, burn-broken ASP REFL  
 ‘[This computer]<sub>i</sub> does not radiate heat properly. It burned itself<sub>i</sub>.’ [3.46]

<sup>7</sup> We do not consider the possibility that the distribution of *ziji* could be accounted for by predicate-based theories (Pollard and Sag 1992, Reinhard and Reuland 1993, a.o.), because uncontroversial examples like (3) immediately show that this type of theory is too strong. According to predicate-based theories, anaphors must be bound by their coarguments, but in (3), *ziji* can be anteceded by the matrix subject even if it is the object of the embedded clause.

<sup>8</sup> The p-values reported throughout the paper have been calculated using the Wilcoxon rank sum test. This choice results from the fact that the responses are on a scale and do not follow a normal distribution, which violates the assumptions for a t-test.

<sup>9</sup> This difference only obtained with real inanimates: near animates like *company* or *party* behave like animates and are therefore not incorporated in the results of the survey.

- (13) \*[Zhe zhang shouju]<sub>i</sub> xianshi [<sub>TP</sub> youren gaidong guo ziji<sub>i</sub> de shuju].  
 this CL receipt show someone change ASP REFL DE record  
 ‘[This receipt]<sub>i</sub> shows that [<sub>TP</sub> somebody changed its<sub>i</sub> record].’ [1.64]

Second, there is no significant difference in score ( $p=0.18$ ) between sentences like (11) (local binding condition) and sentences like (14) involving *ziji* (within the) subject of a complement clause (condition 2 of long distance binding).

- (14) [Zhe tai diannao]<sub>i</sub> yong gao yu qita diannao de yunxing sude xianshi le [<sub>TP</sub> ziji<sub>i</sub>  
 this CL computer use higher than other computer DE processing speed show ASP REFL  
 youzhe genggao de xingneng].  
 has higher DE quality  
 ‘[This computer]<sub>i</sub> with a computing speed higher than other computers indicated that [<sub>TP</sub> it<sub>i</sub> has  
 better quality].’ [4.74]

This shows that the matrix subject (the intended antecedent) is contained in the binding domain of *ziji* when *ziji* is (within) the subject of the embedded clause,<sup>10</sup> but not when it is (within) its object. In fact, sentences like (14) were rated significantly higher than sentences like (13) ( $p<0.001$ ).

This appears to support Chomsky’s (1986) definition of Condition A. According to it, the binding domain must contain a potential binder for the anaphor, which accounts for the acceptability of (15).<sup>11</sup>

- (15) [They<sub>i</sub> said that [<sub>TP</sub> pictures of themselves<sub>i</sub> were on sale]].

But the generalization on which this account is based has been questioned by Charnavel and Sportiche (2016).<sup>12</sup> They observe (based on the distribution of French anaphors) that sentences like (15) are only acceptable if the anaphor is animate, which suggests that *themselves* is not a plain anaphor in (15), but an exempt anaphor. Consequently, they claim that the binding domain of (French) anaphors can be no bigger than a tensed clause, which leads them to propose a phase-based definition of Condition A (the binding domain for Condition A is the Spell-Out domain of a phase).

The acceptability of inanimate *ziji* in the subject of embedded clauses thus raises an issue, as it reveals an empirical difference between English and French on the one hand (anaphors in subjects of tensed clauses can only be exempt), and Mandarin on the other hand (these anaphors can be plain).<sup>13</sup> To solve this issue without resorting to parametrization of binding domains, one possibility is to assume that subjects do not occupy the same position in English/French and in Mandarin, so that

<sup>10</sup> Huang and Liu (2001) observe that *ziji* exhibits mixed properties when it is (within) the subject of an embedded clause: like an exempt anaphor, it must be read *de se*, but like a plain anaphor, it is not subject to blocking effects.

<sup>11</sup> More precisely, the binding domain of *themselves* must be extended to the matrix sentence in this theory because there is no subject accessible to the anaphor according to the *i*-within-*i* filter.

<sup>12</sup> Another fact undermining the hypothesis that Chomsky’s 1986 theory could explain the Mandarin facts is that adjunct clauses differ from complement clauses in this respect: when *ziji* is (within) the subject of an adjunct clause as in (v), it is degraded as compared to locally bound *ziji* ( $p<0.001$ ).

(v) Zhe liang che zai ziji jingguo xiuli zhihou rengan changchang chuxian wenti  
 this CL car at REFL experienced repair after still often appear problem  
 ‘This car often has problems even after it was fixed.’ [2.02]

This difference is not predicted by the Chomskian theory. It could however follow from the hypothesis suggested above if *ziji* in adjunct clauses (vs. complement clauses) cannot be high enough to escape the spellout domain (by topicalization).

<sup>13</sup> Another difference is that Mandarin anaphors, unlike English/French anaphors, can be the subject of tensed clauses as illustrated in (vi) vs. (vii). This is independent of logophoricity and has been explained by the Anaphor Agreement Effect (Rizzi 1990, Woolford 1999): nominative anaphors are only grammatical in languages without agreement.

(vi) Zhangsan<sub>i</sub> shuo ziji<sub>i</sub> hui lai.  
 Zhangsan say REFL will come  
 ‘Zhangsan<sub>i</sub> said that he<sub>i</sub> will come.’ (Huang 1982)

(vii) \*They<sub>i</sub> said that themselves<sub>i</sub> will come.

Mandarin subjects are higher than TP and are thus outside the Spell-Out domain. Specifically, it could be the case that Mandarin subjects appear in a Topic position. This can be tested by examining instances of overtly topicalized anaphors as in (16), which involves the complex anaphor *ta-ziji*.

- (16) Zhangsan<sub>i</sub> shuo, ta-ziji<sub>i</sub>, Lisi chang piping.  
 Zhangsan say REFL Lisi often criticize  
 ‘Zhangsan<sub>i</sub> said that himself<sub>i</sub>, Lisi often criticized.’ (Huang & Tang 1991)

But given that it is not clear, as we have seen above (see example (7)), that *ta-ziji* is a plain anaphor, a better test to be done in future surveys would be to examine topicalized inanimate *ziji* as in (17).<sup>14</sup>

- (17) ?[Zhe zhang shouju]<sub>i</sub> xianshi ziji<sub>i</sub> de shuju, youren gaidong guo.  
 this CL receipt show REFL DE record someone change ASP  
 ‘?[This receipt]<sub>i</sub> shows that its<sub>i</sub> record, somebody changed.’

### 4.3. Subject orientation

The third result of the survey is to show that subject orientation is independent of logophoricity.

Table 4	Condition	Average	Standard deviation
Object binder	Subj V [Obj Ant] [... ziji...]	1.78	1.16

Like other anaphors such as Icelandic *sig*, Mandarin *ziji* is standardly considered to require a subject as antecedent on the basis of examples like (18).

- (18) Zhangsan<sub>i</sub> yijing tongzhi Lisi<sub>k</sub> ziji<sub>i/\*k</sub> de fenshu le.  
 Zhangsan already inform Lisi REFL DE grade ASP  
 ‘Zhangsan<sub>i</sub> already told Lisi<sub>k</sub> his<sub>i/\*k</sub> grade.’ (Huang *et al.* 2009)

Subject orientation cannot be part of Condition A (at least if we want to preserve a crosslinguistically uniform Condition A), since many anaphors such as English *himself* can be bound by objects. It could be reasonable to suppose that subject orientation is in fact an artifact of logophoricity: all examples mentioned in the literature involve animate *ziji* and the antecedents are usually subjects of attitude verbs (e.g. *tongzhi* ‘inform’ in (18), *renwei* ‘think’ in (3) and (6), *shuo* ‘say’ in (v) fn. 13) that make *ziji* logophoric, while objects are usually not perspective centers and thus cannot make *ziji* logophoric.

The distribution of inanimate *ziji* however demonstrates that subject orientation is independent of logophoricity and is a property of plain *ziji*. As shown in Table 4 above and illustrated in (19) below,<sup>15</sup> inanimate *ziji* cannot be anteceded by an object. The object binder condition is rated significantly lower than the local binding condition ( $p < 0.001$ ) where the binder of *ziji* is a subject.

- (19) \*Zhangsan cuo ba wenzhang<sub>i</sub> fagei le ziji<sub>i</sub> de zuozhe.  
 Zhangsan mistake BA article send ASP REFL DE author  
 ‘Zhangsan sent [the article]<sub>i</sub> to its<sub>i</sub> own author by mistake.’<sup>16</sup> [2.12]

<sup>14</sup> If this test fails, it could simply be because Topic is not the relevant position (it is not high enough). Another possible test in that case could be to reexamine the cases with inanimate *ziji* as embedded subject and add an overtly topicalized object above it, which would force *ziji* to be in a lower position. Unacceptability would be expected in that case.

<sup>15</sup> The control sentence with the pronoun *ta* instead of *ziji* is acceptable to most speakers.

<sup>16</sup> We chose to make the subject animate to avoid ambiguity and make sure that the only possible option for the participants of the survey was to interpret *ziji* as anteceded by the object. But note that the same judgment would hold with an inanimate subject:

- (viii) Zhe ge bianji xitong zongshi ba wenzhang<sub>i</sub> fagei le ziji<sub>i</sub> de zuozhe.  
 this CL editing system always BA article send ASP REFL DE author.  
 ‘This editing system always sends [the article]<sub>i</sub> to its<sub>i</sub> own author.’

One hypothesis explaining subject orientation is to assume covert movement of the anaphor to a high position where the only possible (higher) antecedent is the subject. In particular, *ziji* can be assumed to covertly attach to the verb to form a reflexive verb, just like reflexive clitics overtly do in Romance (Lebeaux 1983, a.o.).

It has been argued (see Cole *et al.* 2006 and references therein) that this analysis could be extended to account for instances of long distance *ziji* by assuming long distance movement of *ziji* to the TP layer.<sup>17</sup> But besides the issues mentioned in Section 2.1, this analysis faces the following fatal problem: it predicts that long distance *ziji* cannot occur in syntactic islands, contrary to facts (Cole *et al.* 2006). Instead, we suppose that the movement of *ziji* to a high clausal position (and thus subject orientation) is only local, and exempt *ziji* is bound by a silent logophoric operator (see fn. 2), which occurs in the high TP layer (Charnavel 2017a). Given that the operator can be in a relation of coreference with the superficial antecedent of *ziji*, this predicts that exempt *ziji* is not subject oriented in principle: its superficial antecedent can be in any position as long as it meets logophoric conditions.<sup>18</sup> In fact, example (20) below and the examples involving apparent subcommand in the next Section 4.4 show that the antecedent of exempt *ziji* does not have to be the subject of a (full) clause, and example (4), where exempt *ziji* does not have an antecedent in its sentence, confirms this (cf. Huang and Liu 2001; fn. 31).

- (20) *Ziji<sub>i</sub> de xiaohai mei de jiang de xiaoxi shi Lisi<sub>i</sub> hen shangxin.*  
 REFL DE child NEG get prize DE news make Lisi very sad  
 ‘The news that his<sub>i</sub> child didn’t win the prize made Lisi<sub>i</sub> very sad.’ (Huang & Liu 2001)

#### 4.4. Subcommand

Finally, the results of our study reveal that subcommand, unlike subject orientation, is an artifact of logophoricity.

Table 5	Condition	Average	Standard deviation
Subcommand	[Subj...Ant...] V [Obj...ziji...]	3.35	1.92

It is standardly claimed that *ziji* does not have to be in a strict c-commanding relation with its antecedent to obey Condition A: *ziji* can also be subcommanded by its antecedent (Tang 1989, Huang and Liu 2001, a.o.). As illustrated in (21), this means that its antecedent (Zhangsan) can be the specifier of a larger DP that c-commands the anaphor if that DP is inanimate (*jiao’ao* ‘pride’).

- (21) [Zhangsan<sub>i</sub> de jiao’ao] hai-le ziji<sub>i</sub>.  
 Zhangsan DE pride hurt-ASP REFL  
 ‘[Zhangsan<sub>i</sub>’s arrogance] harmed him<sub>i</sub>.’

As this property seems to be idiosyncratic to Mandarin, it is worthwhile to wonder whether it is not illusory. One possibility is that subcommand is in fact an artifact of logophoricity. Indeed, subcommand is usually observed in examples involving mental, inanimate nouns (such as *jiao’ao* ‘pride’ in (21)) that can create logophoric conditions. Similar cases do occur in other languages as shown in (22): Icelandic *sig* can be anteceded by *John* even if *John* does not c-command *sig*, because the presence of the noun *skoðun* ‘opinion’ makes *sig* logophoric, i.e. the clause containing *sig* expresses the perspective of its antecedent *John*.

- (22) *Skoðun Jóns<sub>i</sub> er [að sig<sub>i</sub> vanti hæfileika].*  
 opinion John’s is that REFL lacks-SUBJ talents  
 ‘John<sub>i</sub>’s opinion is that he<sub>i</sub> lacks talents.’ (Maling 1984)

<sup>17</sup> The proponents of this approach usually argue that *ziji* undergoes head movement to T in a cyclic manner (T-to-T movement).

<sup>18</sup> This has been experimentally shown to be borne out for the Cantonese anaphor *jihgei*, which can take a non-subject antecedent in logophoric environments (Chan 2017).

The question is thus to know whether *ziji* is plain or exempt in examples like (21). If it is plain, we predict that inanimate *ziji* can be subcommanded; if it is exempt, only animate *ziji* can be licensed in such configurations under logophoric conditions, and subcommand is only an illusion.

The results of the survey reported in Table 5 show that the latter prediction is borne out. Inanimate *ziji* in subcommand configurations like (23) is significantly degraded ( $p < 0.001$ ) as compared to inanimate *ziji* in local binding conditions like (11)-(12).<sup>19</sup> This supports the hypothesis that subcommand is an artifact of logophoricity.

- (23) \*[Zhe ke shu]<sub>i</sub> de guoshi ya wan le ziji<sub>i</sub>.  
 this CL tree DE fruit press bent ASP REFL  
 ‘The fruits of [this tree]<sub>i</sub> bent it<sub>i</sub>.’ [3.20]

This hypothesis is corroborated by the fact that animate *ziji* can only be subcommanded by its antecedent if the inanimate noun containing the subcommander creates logophoric conditions, as suggested by the contrast between (24) and (25) provided by Huang and Liu (2001): while the noun *shibai* ‘failure’ does not make it possible for the clause containing *ziji* to express the perspective of its antecedent *Zhangsan*, the noun *baogao* ‘report’ does, given that a report has a content.

- (24) \*Zhangsan<sub>i</sub> de shibai biaoshi tamen dui ziji<sub>i</sub> mei xinxin.  
 Zhangsan DE failure indicate they to REFL NEG confidence  
 ‘Zhangsan<sub>i</sub>’s failure indicates that they have no confidence in him<sub>i</sub>.’
- (25) Zhangsan<sub>i</sub> de baogao biaoshi tamen dui ziji<sub>i</sub> mei xinxin.  
 Zhangsan DE report indicate they to REFL NEG confidence  
 ‘Zhangsan<sub>i</sub>’s report indicates that they have no confidence in him<sub>i</sub>.’

Crucially, this also holds in local conditions as shown by the contrast reported by several native speakers between (21) and (26).

- (26) ??Zhangsan de che bi ziji de zixingche gui.  
 Zhangsan DE car than REFL DE bike expensive.  
 ‘Zhangsan’s car is more expensive than his bike.’

As neither the noun *che* ‘car’ nor the VP are mental, the clause containing *ziji* does not have to express Zhangsan’s perspective and *ziji* is therefore degraded as predicted by the logophoricity hypothesis. A more systematic investigation of this type of cases should confirm whether subcommand indeed always boils down to logophoric exemption.

## 5. Conclusion

In sum, our survey on inanimate *ziji* makes empirical, methodological and theoretical points. Empirically, we show that contrary to what is standardly claimed, *ziji* can in fact be inanimate. Methodologically, this provides us with a tool for distinguishing between plain and exempt, logophoric *ziji* in a theory-neutral way. This has several theoretical consequences: in particular, the distribution of inanimate *ziji* supports a Chomskian definition of Condition A and reveals that subcommand is an artifact of logophoricity, while subject orientation is independent of it.

<sup>19</sup> A further question is why subcommanded *ziji* seems to be less degraded than *ziji* bound by an object in the survey, even if both are significantly worse than locally c-commanded *ziji*. This could be due to the fact that in subcommand conditions, an animate DP is available in the sentence (the subject, see fn. 16) that could act as a competitor.

## References

- Anand, Pranav, 2006: *De De Se*. Ph.D. Dissertation, MIT.
- Charnavel, Isabelle, 2017a: “Logophoricity and Locality”. Harvard Manuscript. lingbuzz/002683.
- Charnavel, Isabelle, 2017b: “Deictic Perspective and Logophoric Exemption from Condition A”. *Proceedings of the thirty-fifth West Coast Conference on Formal Linguistics (WCCFL35)* [this volume].
- Charnavel, Isabelle & Dominique Sportiche, 2017: “Simplex, yet local”. *Proceedings of the forty-seventh Annual Meeting of the North Eastern Linguistics Society (NELS47)*.
- Charnavel, Isabelle & Dominique Sportiche, 2016: “Anaphor Binding – What French Inanimate Anaphors Show”. *Linguistic Inquiry* 47 (1): 35–87.
- Chan, Queenie Kwai Ying, 2017: *Cantonese Jihgei: Subject-object Asymmetry and Non-subject Antecedent Potential*. Master Thesis, Simon Fraser University.
- Chomsky, Noam, 1986: *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.
- Clements, George N., 1975: “The Logophoric Pronoun in Ewe: Its Role in Discourse”. *Journal of West African Languages* 10: 141–177.
- Cole, Peter, Gabriella Hermon & Cheng-Teh James Huang, 2006: “Long-Distance Binding in Asian Languages”. In Martin Everaert & Hank Van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 21–84.
- Dillon, Brian, Wing-Yee Chow & Ming Xiang, 2015: “The Relationship Between Anaphor Features and Antecedent Retrieval: Comparing Mandarin *Ziji* and *Ta-Ziji*”. *Frontiers in Psychology* 6, article 1966.
- Huang, Cheng-Teh James, 1982: *Logical Relations in Chinese and the Theory of Grammar*. Ph.D. Dissertation, MIT. Also published by Garland Publishing, New York (1998).
- Huang, Cheng-Teh James & Chen-Sheng Luther Liu, 2001: “Logophoricity, Attitudes and *ziji* at the Interface”. In Peter Cole, Gabriella Hermon and Cheng-Teh James Huang (eds.), *Long Distance Reflexives, Syntax and Semantics* 33, 141–195. New York: Academic Press.
- Huang, Cheng-Teh James & Chih-Chen Jane Tang, 1991: “The Local Nature of the Long-Distance Reflexives in Chinese”. In Jan Koster and Eric Reuland (eds.), *Long-Distance Anaphora*, 263–282.
- Huang, Cheng-Teh James, Yen-hui Audrey Li & Yafei Li, 2009: *The Syntax of Chinese*. Cambridge: Cambridge University Press.
- Koopman, Hilda & Dominique Sportiche, 1989: “Pronouns, Logical Variables and Logophoricity in Abe”. *Linguistic Inquiry* 20: 555–589.
- Kuno, Susumu, 1987: *Functional Syntax: Anaphora, Discourse and Empathy*. Chicago: University of Chicago Press.
- Lebeaux, David, 1983: “A Distributional Difference between Reciprocals and Reflexives”. *Linguistic Inquiry* 14(4): 723–730.
- Maling, Joan, 1984: “Non-Clause-Bounded Reflexives in Modern Icelandic”. *Linguistics and Philosophy* 7: 211–241.
- Manzini, Maria Rita & Kenneth Wexler, 1987: “Parameters, Binding Theory, and Learnability”. *Linguistic Inquiry*: 413–444.
- Pan, Haihua, 1998: “Closeness, Prominence, and Binding Theory”. *Natural Language and Linguistic Theory* 16(4): 771–815.
- Pica, Pierre, 1987: “On the Nature of the Reflexivization Cycle”. *Proceedings of the North East Linguistic Society* 17(2): 483–500.
- Pollard, Carl & Ivan Andrew Sag, 1992: “Anaphors and the Scope of Binding Theory”. *Linguistic Inquiry* 23: 261–303.
- Reinhart, Tanya & Eric Reuland, 1993: “Reflexivity”. *Linguistic Inquiry* 24: 657–720.
- Reuland, Eric, 2006a: “Icelandic Logophoric Anaphora”. In Martin Everaert & Hank Van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 544–557.
- Reuland, Eric, 2006b: “Long Distance Binding in Germanic Languages”. In Martin Everaert & Hank Van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 85–108.
- Reuland, Eric, 2011: *Anaphora and Language Design*. Cambridge, MA: MIT Press.
- Rizzi, Luigi, 1990: “On the Anaphor-Agreement Effect”. *Rivista di Linguistica* 2: 27–42.
- Sells, Peter, 1987: “Aspects of Logophoricity”. *Linguistic Inquiry* 18: 445–479.
- Tang, Chih-Chen Jane, 1989: “Chinese Reflexives”. *Natural Language and Linguistic Theory* 7(1): 93–121.
- Thráinsson, Höskuldur, 1976: “Reflexives and Subjunctives in Icelandic”. *Proceedings of the Sixth Annual Meeting of the North Eastern Linguistics Society (NELS6)*: 225–239.
- Woolford, Ellen, 1999: “More on the Anaphor Agreement Effect”. *Linguistic Inquiry* 30(2), 257–287.
- Xue, Ping, Carl Pollard & Ivan Andrew Sag 1994: “A new Perspective on Chinese *ziji*”. *Proceedings of the Thirteenth West Coast Conference on Formal Linguistics (WCCFL13)*: 432–447.

# Proceedings of the 35th West Coast Conference on Formal Linguistics

edited by Wm. G. Bennett, Lindsay Hracs,  
and Dennis Ryan Storoshenko

Cascadilla Proceedings Project   Somerville, MA   2018

## Copyright information

Proceedings of the 35th West Coast Conference on Formal Linguistics  
© 2018 Cascadilla Proceedings Project, Somerville, MA. All rights reserved

ISBN 978-1-57473-472-0 library binding

A copyright notice for each paper is located at the bottom of the first page of the paper.  
Reprints for course packs can be authorized by Cascadilla Proceedings Project.

## Ordering information

Orders for the library binding edition are handled by Cascadilla Press.  
To place an order, go to [www.lingref.com](http://www.lingref.com) or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA  
phone: 1-617-776-2370, fax: 1-617-776-2271, [sales@cascadilla.com](mailto:sales@cascadilla.com)

## Web access and citation information

This entire proceedings can also be viewed on the web at [www.lingref.com](http://www.lingref.com). Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Charnavel, Isabelle and Yujing Huang. 2018. Inanimate *ziji* and Condition A in Mandarin. In *Proceedings of the 35th West Coast Conference on Formal Linguistics*, ed. Wm. G. Bennett et al., 132-141. Somerville, MA: Cascadilla Proceedings Project. [www.lingref.com](http://www.lingref.com), document #3383.