

## Chinese Psych Verbs and Covert Clausal Complementation

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Psychological verbs exhibit special properties that pose a challenge for syntactic theory.

**$\Theta$ -Role Inversion** (Lakoff 1971; Postal 1974): Experiencer-Subject (ES) and Experiencer-Object (EO) psych Vs assign the same  $\Theta$ -roles, but their structural positions are 'flipped'. This challenges Universal Alignment/UTAH (Baker 1988).

EXPERIENCER                      THEME  
(1) Little kids      **fear**      horror films.                      (ES)

THEME                                      EXPERIENCER  
(2) Horror films      **frighten**      little kids.                      (EO)

**Binding Anomalies:** Backward binding occurs with EO psych Vs (Belletti & Rizzi 1986, Pesetsky 1987, Grimshaw 1990, a.o.). This challenges the c-command constraint on reflexive binding (Chomsky 1981, 1986).

(3) a. Stories about **himself<sub>i</sub>** pleased **John<sub>i</sub>**.                      (EO)  
b. Pictures of **each other<sub>i</sub>** annoyed **the students<sub>i</sub>**.

(4) \*Friends of **himself<sub>i</sub>** fear **John<sub>i</sub>**.                      (ES)

(5) a. \***Stories** about **himself<sub>i</sub>** described **John<sub>i</sub>** accurately. (SIMPLE TV)  
b. \***Each other<sub>i</sub>'s** advisors invited **the students<sub>i</sub>**.

### In this paper we:

- explore syntactic differences between psych Vs in Chinese involving Experiencer Subjects vs. Experiencer Objects,
- argue that these syntactic differences follow from an additional previously undiscussed semantic one: intensionality,
- propose different underlying structures of the two classes of psych Vs that account for their different syntactic behavior,
- discuss causative variants of the two classes of psych Vs, and suggest possible analyses of their properties.

## 1.0 Chinese Psych Verbs

**$\Theta$ -Role Inversion:** Chinese psych Vs exhibit theta-role inversion.

EXPERIENCER                      THEME  
(6) Zhangsan      **haipa**      Lisi.                      (ES)  
Zhangsan      fear      Lisi  
'Zhangsan fears Lisi.'

THEME                                      EXPERIENCER  
(7) Zhangsan      **gandong-le**      Lisi.                      (EO)  
Zhangsan      touch-LE      Lisi  
'Zhangsan touched Lisi.'

**Binding Anomalies.** Chinese EO psych Vs also show backward binding, in contrast to ES psych Vs & simple transitives:

(8) a. Ziji<sub>i</sub> de pengyou de guanhuai gandong-le Lisi<sub>i</sub>.                      (EO)  
self DE friend DE care touch-LE Lisi  
'The loving care of his<sub>i</sub> (own) friends touched Lisi<sub>i</sub>.'

b. Ziji<sub>i</sub> de chenggong zhenfen-le Fangfang<sub>i</sub>.  
self DE success excite-LE Fangfang  
'Her<sub>i</sub> (own) success excited Fangfang<sub>i</sub>.' (Chen 1995: (8b))

(9) a. \*Ziji<sub>i</sub> de pengyou haipa Lisi<sub>i</sub>.                      (ES)  
self DE friend fear Lisi

b. \*Ziji<sub>i</sub> de fumu danxin Fangfang<sub>i</sub> de shengti.  
self DE parent worry Fangfang DE health (Chen 1995: (7b))

(10) \*Ziji<sub>i</sub> de pengyou changchang piping Lisi<sub>i</sub>.                      (SIMPLE TV)  
self DE friend often criticize Lisi

**Clausal Complementation:**  $\sqrt{\text{ES}}$ , \*EO

(11) a. Zhangsan<sub>i</sub> **haipa** [Lisi hui da tai].  
Zhangsan fear Lisi will hit he  
'Zhangsan<sub>i</sub> feared that Lisi would hit him<sub>i</sub>.'

b. \*Zhangsan **gandong** [Lisi hui ku].  
Zhangsan touch Lisi will cry

**Ba Construction:** \*ES,  $\sqrt{\text{EO}}$

(12) a. \*Zhangsan ba Lisi haipa.  
Zhangsan BA Lisi fear

- b. Zhangsan ba Lisi gandong-le.  
Zhangsan BA Lisi touch-LE  
'Zhangsan touched Lisi.'

**Bei passivization:** \*ES,  $\sqrt{EO}$

- (13) a. \*Zhangsan bei Lisi haipa. (ES - LONG PASSIVE)  
Zhangsan BEI Lisi fear  
Intended: 'Zhangsan is feared by Lisi.'  
b. \*Zhangsan bei haipa. (ES – SHORT PASSIVE)  
Zhangsan BEI fear  
Intended: 'Zhangsan is feared.'
- (14) a. Zhangsan bei Lisi gandong-le. (EO - LONG PASSIVE)  
Zhangsan BEI Lisi touch-LE  
'Zhangsan was touched by Lisi.'  
b. Zhangsan bei gandong-le. (EO - SHORT PASSIVE)  
Zhangsan BEI touch-LE  
'Zhangsan was touched.'

**SUMMARY: Properties of Chinese ES and EO psych Vs**

	ES	EO
<b>Backward binding</b>	No	Yes
<b>Clausal complement</b>	Yes	No
<b>Ba construction</b>	No	Yes
<b>Bei construction</b>	No	Yes

## 2.0 Intensionality & Clausal Complementation

### 2.1 Chinese $\Psi$ -verbs & Intensionality

With ES psych Vs (e.g. *haipa* 'fear'):

- a nondenoting object needn't induce falsity (15a)
- substitution of identically referring objects needn't preserve truth (15b)

- (15)a. Lisi haipa xixiegui. (ES)  
Lisi fear vampire  
'Lisi fears vampires.'  
b. Lisi haipa Jackie Chan/Cheng Long.  
Lisi fear Jackie Chan/Cheng Long  
'Lisi fears Jackie Chan/Cheng Long.'

With EO psych Vs (e.g. *gandong* 'touch')

- a nondenoting object always yields a false sentence (16a)
- substitution of identically referring terms always preserves truth (16b)

- (16) a. Lisi gandong-le xixiegui. (EO)  
Lisi touch-LE vampire  
'Lisi touched the vampire.' (false!)  
b. Lisi gandong-le Jackie Chan/Cheng Long.  
Lisi touch-LE Jackie Chan/Cheng Long  
'Lisi touched Jackie Chan/Cheng Long.'

Thus ES psych Vs are intensional, whereas EO psych Vs are extensional.

### 2.2 Chinese ES $\Psi$ -verbs as Covert-Clause-taking

Ross (1986), McCawley (1974) and den Dikken, Larson & Ludlow (1996) and Quine (1960) argue for the following semantics-syntax correlation:

(17) Intensionality  $\leftrightarrow$  Clausal Complementation

Clausal complements may be covert, however. cf. (18a-c):

- (18) a. Yesterday John needed [to have a bicycle tomorrow].  
b. Yesterday John needed a bicycle tomorrow.  
c. Yesterday John needed [TO HAVE a bicycle tomorrow].

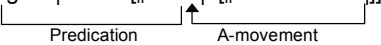
**Consequence:** Intensionality with ES  $\Psi$ -verbs implies a clausal complement. Under (17), (19a) must have a structure as in (19b), where PRED is the covert predicate of an underlying clausal complement. To fear *Lisi* is thus to fear that *Lisi* will do, or undergo, PRED. In contrast, we assume EO  $\Psi$ -verbs have a simple transitive structure with no complementation (20):

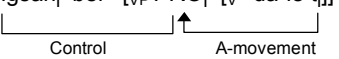
- (19) a. Zhangsan **haipa** Lisi. (ES)  
Zhangsan fear Lisi  
'Zhangsan fears Lisi.'  
b. Zhangsan **haipa** [ Lisi PRED ]
- (20) a. Zhangsan **gandong-le** Lisi. (EO)  
Zhangsan touch-LE Lisi  
'Zhangsan touched Lisi.'  
b. Zhangsan **gandong-le** [<sub>DP</sub> Lisi ]



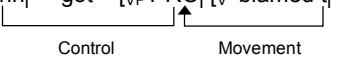
*Bei* passivization, which comes in long & short forms, has a similar analysis (Feng (1995), Cheng, Huang, Li, and Tang (1993, 1999), Ting (1995, 1996, 1998), a.o.)

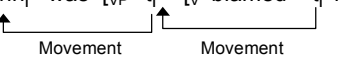
**Long Passives (LPs) vs. Short Passives (SPs):** Chinese LPs involve main verb *bei* & a clausal complement that undergoes NOP, and denotes a property predicated of the Experiencer subject (25). SPs involve an auxiliary-like *bei* with a VP complement whose PRO object is NP-moved & controlled by the Experiencer subject (26). Both involve movement + control/predication.

(25) Zhangsan<sub>i</sub> bei [<sub>IP</sub> OP<sub>i</sub> [<sub>IP</sub> Lisi da-le t<sub>i</sub>]] **LONG PASSIVE**  


(26) Zhangsan<sub>i</sub> bei [<sub>VP</sub> PRO<sub>i</sub> [<sub>V'</sub> da-le t<sub>i</sub>]] **SHORT PASSIVE**  


Chinese passives thus resemble English *get*-passives (27), rather than English *be*-passives, which involve only movement (28).

(27) John<sub>i</sub> got [<sub>VP</sub> PRO<sub>i</sub> [<sub>V'</sub> blamed t<sub>i</sub> for the failure]] **GET-PASSIVE**  


(28) John<sub>i</sub> was [<sub>VP</sub> t<sub>i</sub> [<sub>V'</sub> blamed t<sub>i</sub> for the failure]] **BE-PASSIVE**  


On our proposal, ES psych Vs involve an underlying clausal complement. Lack of LPs and SPs with *haipa* (13a-b) can be assimilated to the general unavailability of *bei* passivization out of clausal complements (30)-(32).

- (29) a. \*Zhangsan bei Lisi haipa. (ES - LONG PASSIVE)  
 Zhangsan BEI Lisi fear  
 Intended: 'Zhangsan is feared by Lisi.'  
 b. \*Zhangsan bei haipa. (ES - SHORT PASSIVE)  
 Zhangsan BEI fear  
 Intended: 'Zhangsan is feared.'

(30) \*Zhangsan<sub>i</sub> bei Lisi haipa [ \_\_ hui da ta<sub>j</sub>.  
 Zhangsan BEI Lisi fear will hit him  
 Intended: 'Zhangsan<sub>i</sub> is feared by Lisi's hitting him<sub>j</sub>.'

- (31) a. Zhangsan rang [ Lisi likai ].  
 Zhangsan let Lisi leave  
 'Zhangsan let Lisi leave.'  
 b. \*Zhangsan bei Lisi rang [ \_\_ likai ].  
 Zhangsan BEI Lisi let leave  
 'Zhangsan was allowed by Lisi to leave.'

- (32) a. Lisi kanjian [ Zhangsan jin-le na-jia canguanr ].  
 Lisi saw Zhangsan enter-LE that-CI restaurant  
 'Zhangsan saw Lisi entering the restaurant.'  
 b. \*Zhangsan bei Lisi kanjian [ \_\_ jin-le na-jia canguanr ].  
 Zhangsan BEI Lisi see enter-LE that-CI restaurant  
 'Zhangsan was seen by Lisi entering the restaurant.'

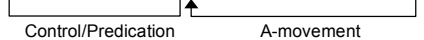
The constraint resembles one found in English *tough* constructions & *get*-passives, which block movement of ECM or small clause subjects (33b,c), (34b,c), even though *be*-passives are permitted (33d), (34d).

- (33) a. Mary believes/considers [John to be intelligent].  
 b. \*?John is tough to believe/consider \_\_ to be intelligent.  
 c. \*?John got believed/considered \_\_ to be intelligent.  
 d. John is believed/considered \_\_ to be intelligent.

- (34) a. Mary heard [John talk to Alice].  
 b. \*John was tough to hear \_\_ talk to Alice.  
 c. \*John got heard [ \_\_ to talk to Alice].  
 d. John was heard [ \_\_ to talk to Alice].

Since the Experiencer object is the 'true' argument of EO psych Vs, it can undergo both long & short passivization just like simple transitives (35a,b).

- (14) a. Zhangsan bei Lisi gandong-le. (EO - LONG PASSIVE)  
 Zhangsan BEI Lisi touch-LE  
 'Zhangsan was touched by Lisi.'  
 b. Zhangsan bei gandong-le. (EO - SHORT PASSIVE)  
 Zhangsan BEI touch-LE  
 'Zhangsan was touched.'

(35) a. Zhangsan<sub>i</sub> bei [<sub>IP</sub> OP<sub>i</sub> [<sub>IP</sub> Lisi gandong-le t<sub>i</sub>]]  
 b. Zhangsan<sub>i</sub> bei [<sub>VP</sub> PRO<sub>i</sub> [<sub>V'</sub> gandong-le t<sub>i</sub>]]  


### 4.0 Backward Binding

An added complexity in the analysis of backward binding is the fact that some members of the two classes of psych Vs have causative variants (36b), (37b):

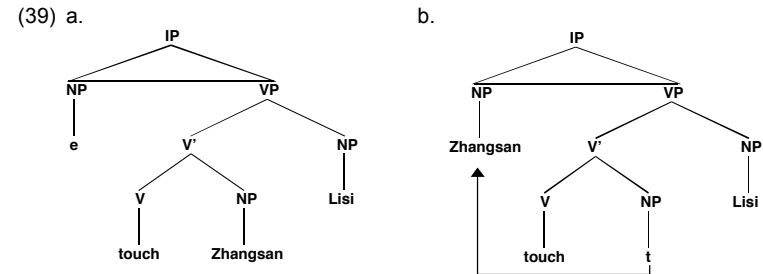
- (36) a. Lisi **haipa** zhe-zhi xiongmeng de gou. (ES)  
 Lisa fear this-CL fierce DE dog  
 'Lisa fears this fierce dog.'  
 b. Zhe-zhi xiongmeng de gou **shi** Lisi hen **haipa**. CAUSATIVE  
 This-CL fierce DE dog make Lisi very fear  
 'This fierce dog makes Lisi very frightened.'
- (37) a. Zhangsan de guanhuai **gandong-le** Lisi. (EO)  
 Zhangsan DE care touch-ASP Lisi  
 'The loving care of Zhangsan touched Lisi.'  
 b. Zhangsan de guanhuai **shi** Lisi hen **gandong**. CAUSATIVE  
 Zhangsan DE care make Lisi very touch  
 'The loving care of Zhangsan touched Lisi very much.'

Backward binding occurs not only with EO psych Vs (9), but also with the causative counterparts of both classes of psych Vs (38a,b):

- (8) a. \***Ziji<sub>i</sub>** de pengyou haipa **Lisi<sub>i</sub>**. (ES)  
 self DE friend fear Lisi  
 b. \***Ziji<sub>i</sub>** de fumu danxin **Fangfang<sub>i</sub>** de shengti.  
 self DE parent worry Fangfang DE health (Chen 1995: (7b))
- (9) a. **Ziji<sub>i</sub>** de pengyou de guanhuai **gandong-le** **Lisi<sub>i</sub>**. (EO)  
 self DE friend DE care touch-LE Lisi  
 'The loving care of his<sub>i</sub> (own) friends touched Lisi<sub>i</sub>.'  
 b. **Ziji<sub>i</sub>** de chenggong zhenfen-le **Fangfang<sub>i</sub>**.  
 self DE success excite-LE Fangfang  
 'Her<sub>i</sub> (own) success excited Fangfang<sub>i</sub>.' (Chen 1995: (8b))
- (38) a. **Ziji<sub>i</sub>** de pengyou de canbao xingwei shi **Lisi<sub>i</sub>** hen haipa.  
 self DE friend DE brutal behavior make Lisi very fear  
 'The cruelties of his<sub>i</sub> (own) friends made Lisi<sub>i</sub> very frightened.'  
 b. **Ziji<sub>i</sub>** de pengyou de guanhuai shi **Lisi<sub>i</sub>** hen gandong.  
 self DE friend DE care make Lisi very touch  
 'The loving care of his<sub>i</sub> (own) friends makes Lisi<sub>i</sub> very touched.'

### 4.1 Possibility: Underlying C-command

**Belletti & Rizzi (1986)**: backward binding with EO psych Vs results from A-movement of the surface subject from a position where it is underlyingly c-commanded by the surface object (39):



No such derivation is available with ES psych Vs & simple transitives, hence no backward binding. We could extend this directly to Chinese EO psych Vs.

**Question:** What about causatives?

English causatives show similar backward binding effects with quantifiers (40a). Note also that *make*-causatives allow an expletive subject (40b). This suggests (40a) might derive from (40b) by raising CP from an underlying position where *every boy* c-commands it (40c):

- (40) a. [<sub>CP</sub> That **he<sub>i</sub>** was praised] made **every boy<sub>i</sub>** happy.  
 b. It made **every boy<sub>i</sub>** happy [<sub>CP</sub> that **he<sub>i</sub>** was praised].  
 c. [<sub>CP</sub> That **he<sub>i</sub>** was praised] made **every boy<sub>i</sub>** happy \_\_\_.

This would analogize *make*-causatives to *because*-constructions, which Larson (2004) argues to attach low in the clause (41), (42). Thus *make* = *be* + *because*:

- (41) a. Every boy<sub>i</sub> was happy [<sub>PP</sub> because he<sub>i</sub> was praised].  
 b. [<sub>VP</sub> every boy<sub>i</sub> [<sub>V</sub> be [<sub>VP</sub> [<sub>AP</sub> happy] [<sub>V</sub> t [<sub>PP</sub> because he<sub>i</sub> was praised]]]]]
- (42) a. It made every boy<sub>i</sub> happy [that he<sub>i</sub> was praised].  
 b. [<sub>VP</sub> it [<sub>V</sub> make [<sub>VP</sub> every boy<sub>i</sub> [<sub>V</sub> t [<sub>VP</sub> happy [<sub>V</sub> t [<sub>CP</sub> that he<sub>i</sub> was praised]]]]]]]]]

A similar analysis could be offered for the Chinese causatives.

## 4.2 Possibility: Logophoricity

Huang & Liu (2001): *ziji* in psych V examples like (43) is not a standard reflexive, subject to standard domain constraints; rather it is a **logophor** (44).

(43) [Ziji<sub>i</sub> de xiaohai mei de jiang]-de xiaoxi shi Lisi<sub>i</sub> hen shangxin.  
Self's child not get prize-DE news make Lisi very sad  
'The news that his child didn't win the prize made Lisi very sad'

(44) "A logophor refers to a person whose (a) speech or thought, (b) attitude or state of consciousness, and/or point of view, or perspective, is being reported. This person may be the speaker (the external Source, Self, or Pivot) or an internal protagonist denoted by an argument of the sentence." (p.16)

H&L suggest: "In [43], Lisi is the internal Self whose mental state is being reported." This use of *ziji* is not binding, hence not subject to binding constraints.

**Issues:** Appeal to logophoricity is attractive for (43), but faces challenges with the full range of cases.

- Declarations, thoughts, attitudes, mental states, etc, involve propositions, expressed by clauses.
- Many subjects of EO psych Vs and causatives have no obvious clausal source or propositional content (45a,b), (46a,b).
- Reconstructing the thoughts involved requires considerable abstraction (45c-e), (46c-e).

- (45) a. [Ziji<sub>i</sub> de dianying] gandong-le Zhangsan<sub>i</sub>.  
self DE movie touch-LE Zhangsan  
'His<sub>i</sub> (own) movie touched Zhangsan<sub>i</sub>.'
- b. [Ziji<sub>i</sub> de dianying] shi Zhangsan<sub>i</sub> hen gandong.  
self DE movie make Zhangsan very touch  
'His<sub>i</sub> (own) movie made Zhangsan<sub>i</sub> very touched.'
- c. [Beiren chong-pai ziji<sub>i</sub> de dianying de xiaoxi] gandong-le Zhangsan<sub>i</sub>.  
others re-shoot self DE movie DE news touch-LE Zhangsan  
'The news of others' re-shooting his<sub>i</sub> (own) movie touched Zhangsan<sub>i</sub>.'
- d. [Beiren dui ziji<sub>i</sub> de dianying de rentong] gandong-le Zhangsan<sub>i</sub>.  
others to self DE movie DE recognition touch-LE Zhangsan  
'Others' recognition for his<sub>i</sub> (own) movie touched Zhangsan<sub>i</sub>.'

e. [Ziji<sub>i</sub> de dianying suo miaoshu de zhenshi gushi] gandong-le Zhangsan<sub>i</sub>.  
self DE movie SUO describe DE true story touch-LE Zhangsan  
'The true story that his<sub>i</sub> (own) movie described touched Zhangsan<sub>i</sub>.'

- (46) a. [Ziji<sub>i</sub> de chenggong gushi] zhenfen-le Zhangsan<sub>i</sub>.  
self DE success story excite-LE Zhangsan  
'His<sub>i</sub> (own) success story excited Zhangsan<sub>i</sub>.'
- b. [Ziji<sub>i</sub> de chenggong gushi] shi Zhangsan<sub>i</sub> hen xingfen.  
self DE success story make Zhangsan very excited  
'His<sub>i</sub> (own) success story made Zhangsan<sub>i</sub> very excited.'
- c. [Ziji<sub>i</sub> de chenggong gushi suo dailai de yiqie] zhenfen-le Zhangsan<sub>i</sub>.  
self DE success story SUO bring DE everything excite-LE Zhangsan  
'Everything that is brought (to him) by his<sub>i</sub> (own) success story excited Zhangsan<sub>i</sub>.'
- d. [Beiren dui ziji<sub>i</sub> de chenggong gushi de guanzhu] zhenfen-le Zhangsan<sub>i</sub>.  
others to self DE success story DE attention excite-LE Zhangsan  
'Others' attention to his<sub>i</sub> (own) success story excited Zhangsan<sub>i</sub>.'
- e. [Youguan ziji<sub>i</sub> de chenggong gushi de baodao] zhenfen-le Zhangsan<sub>i</sub>.  
concern self DE success story DE report excite-LE Zhangsan  
'Reports about his<sub>i</sub> (own) success story excited Zhangsan<sub>i</sub>.'

We leave the choice between these analyses open. In fact, the two views do not seem exclusive.

## 5.0 Summary

- Chinese ES and EO  $\Psi$ -Vs diverge importantly in syntactic distributional properties.
- They also differ in an important semantic property: complements of ES  $\Psi$ -Vs are intensional; complements of EO  $\Psi$ -Vs are not.
- Under an attractive hypothesis about the representation of intensionality in grammar, ES  $\Psi$ -Vs must involve a clausal complement, whether one appears overtly or not.
- This hypothesis appears to explain all of the crucial syntactic differences between ES and EO  $\Psi$ -Vs, up to backward binding in EO  $\Psi$ -Vs.
- Backward binding – in EO  $\Psi$ -Vs & in causative variants of both ES and EO  $\Psi$ -Vs might be explained by a generalization of Belletti & Rizzi (1986), or of Huang & Liu's (2001) logophor proposal.

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