Chinese Psych Verbs and Covert Clausal Complementation
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Psychological verbs exhibit special properties that pose a challenge for syntactic theory.

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

<table>
<thead>
<tr>
<th>EXPERIENER</th>
<th>THEME</th>
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<tr>
<td>Little kids</td>
<td>fear horror films.</td>
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<tr>
<td>Horror films</td>
<td>frighten little kids.</td>
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</tbody>
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| (3) a. Stories about himself pleased John. | (EO) |
| (3) b. Pictures of each other annoyed the students. |
| (4) *Friends of himself fear John. | (ES) |
| (5) a. *Stories about himself described John accurately. | (SIMPLE TV) |
| b. *Each other’s advisors invited the students. |

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

Θ-Role Inversion: Chinese psych Vs exhibit theta-role inversion.

(6) Zhangsan haipa [Lisi hui da ta].
Zhangsan fear Lisi will hit he
‘Zhangsan fears Lisi.’

(7) Zhangsan gandong-le [Lisi hui ku].
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 de pengyou de guanhuai gandong-le Lisi. (EO)
self DE friend DE care touch-LE Lisi
‘The loving care of his (own) friends touched Lisi.’

b. Ziji de chenggong zhenfen-le Fangfang,
self DE success excite-LE Fangfang
‘Her (own) success excited Fangfang.’ (Chen 1995: (8b))

(9) a. *Ziji de pengyou haipa Lisi. (ES)
self DE friend fear Lisi

b. *Ziji de fumu danxin Fangfang, de shengti,
self DE parent worry Fangfang, DE health

(10) *Ziji de pengyou changchang piping Lisi. (SIMPLE TV)
self DE friend often criticize Lisi

Clausal Complementation: \(v_{ES}, ^{\ast}OE\)

(11) a. Zhangsan hui da ta. (EO)
Zhangsan fear Lisi will hit he
‘Zhangsan feared that Lisi would hit him.’

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

Ba Construction: \(^{\ast}OE, v_{EO}\)

Zhangsan BA Lisi fear
b. Zhangsan ba Lisi gandong-le. 
   Zhangsan BA Lisi touch-LE 
   ‘Zhangsan touched Lisi.’

Bei passivization: *ES, VEO

(13) a. *Zhangsan bei Lisi haipa. 
   Zhangsan BEI Lisi fear 
   Intended: ‘Zhangsan is feared by Lisi.’
   (ES - LONG PASSIVE)
   b. *Zhangsan bei haipa. 
   Zhangsan BEI fear 
   Intended: ‘Zhangsan is feared.’
   (ES – SHORT PASSIVE)

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

SUMMARY: Properties of Chinese ES and EO psych Vs

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<thead>
<tr>
<th></th>
<th>ES</th>
<th>EO</th>
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<tbody>
<tr>
<td>Backward binding</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Clausal complement</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Ba construction</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Bei construction</td>
<td>No</td>
<td>Yes</td>
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2.0 Intensionality & Clausal Complementation

2.1 Chinese ψ-verbs & Intensionality

With ES psychVs (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.  
   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 psychVs (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.  
       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 psychVs are intensional, whereas EO psychVs are extensional.

2.2 Chinese ES ψ-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 ↔ 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 ψ-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 ψ-verbs have a simple transitive structure with no complementation (20):

(19) a. Zhangsan haipa Lisi.  
       Zhangsan fear Lisi 
       ‘Zhangsan fears Lisi.’

   b. Zhangsan haipa [ Lisi PREd ]

(20) a. Zhangsan gandong-le Lisi.  
       Zhangsan touch-LE Lisi 
       ‘Zhangsan touched Lisi.’

   b. Zhangsan gandong-le [DP Lisi ]
3.0 Unraveling the Properties of Ψ-verbs

3.1 Θ-Role Inversion: The challenge to UTAH, in which identical thematic roles (Experiencer & Theme) are projected into different configurations, dissolves. The apparent Theme of an ES psych V is not an argument of V at all, but rather a constituent of a larger clausal complement.

3.2 Overt Clausal Complementation: ES psych Vs, unlike EO psych Vs, typically allow overt clausal complements:

(11) a. Zhangsan haipa [Lisi hui da ta].
    Zhangsan fear Lisi will hit him
    ‘Zhangsan feared that Lisi would hit him.’

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

In essence, the hidden clause account simply postulates a covert version of what is overtly observed in other examples.

3.3 Ba Construction: Proposed Constraints

Li and Thompson (1981): post-ba NP must be understood as affected by the action described by V; cf. (21a) vs. (21b).

(21) a. Lisi qi-lei-le ma.
    Lisi ride-tired-LE horse
    i. ‘Lisi rode a horse and made it tired.’
    ii. ‘Lisi became tired from riding a horse.’

   b. Lisi ba ma qi-lei-le.
    Lisi BA horse ride-tired-LE
    i. ‘Lisi rode a horse and made it tired.’
    ii. #Lisi became tired from riding a horse.’

Li (1995, 1999): event described by ba is typically composed of two, causally related sub-events, E1 and E2. E1 denotes an action with two participants, P1 and P2, where P2 is also a participant in E2. In such a context, P2 can be introduced by ba:

E1 cause E2  E1 = qi ‘ride’ <Lisi, horse>  E2 = lei ‘tired’ <horse>  can be introduced by ba

It’s not clear that these constraints suffice to explain why EO, but not ES psych Vs, occur with ba. Given (22a) is well-formed. Experiencers must count as affected arguments. But then why is (22b) bad under the intended reading?

(22) a. Zhangsan ba Lisi gandong-le.
    Zhangsan BA Lisi touch-LE
    ‘Zhangsan touched Lisi.’

   b. *Lisi ba Zhangsan haipa.
    Lisi BA Zhangsan fear
    Intended: ‘Lisi caused fear in Zhangsan.’

Similarly if (22a) can be understood as involving two causally related events, following Li’s schema, why can’t (22b)?

Our Proposal: The ba construction involves only arguments in the same thematic complex. Compare:

(23) a. Lisi caiding [Zhangsan you zui].
    Lisi judge Zhangsan have crime
    ‘Lisi judged Zhangsan to be guilty.’

   b. *Lisi ba Zhangsan caiding you zui.

Z may be affected by L’s judgment; furthermore, the act of L judging Z (E1) causes a state of being-found-guilty (E2) in which Z is a participant. Nonetheless the ba construction is not licensed.

Consequences:

- The Experiencer object of an EO psych Vs is a ‘true’, affected argument of V; hence we correctly predict it can appear in ba construction.

- The “Experiencer object” of an ES psych Vs is not an argument of V at all under our analysis, and hence no ba construction variant is expected.

3.4 Bei passivization as Null operator (NOP) movement

Tough-constructions in English have been proposed to involve null operator (NOP) movement & predication (24) (Chomsky 1981).

(24) This problem is tough [CP OP, for us to solve t]

**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) Zhangsan1 bei [VP OP1 [VP Lisi da-le t]]

(26) Zhangsan1 bei [VP PRO1 [VP da-le t]]

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

(27) John1 got [VP PRO1 [VP blamed t for the failure]]

(28) John1 was [VP t [VP blamed t for the failure]]

On our proposal, ES psych VPs 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) *Zhangsan1 bei Lisi haipa [__ hui da ta].
    Zhangsan BEI Lisi fear
    will hit him
    Intended: ‘Zhangsan is feared by Lisi’s hitting him1.’

(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-CL restaurant
    ‘Zhangsan saw Lisi entering the restaurant.’

   b. *Zhangsan bei Lisi kanjian [ ___ jin-le na-jia canguanr ].
    Zhangsan BEI Lisi see enter-LE that-CL 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).

(35) a. Zhangsan1 bei [VP OP1 [VP Lisi gandong-le t]]

   b. Zhangsan1 bei [VP PRO1 [VP gandong-le t]]
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-zi xiongmeng de gou.  (ES)
   ‘Lisa fear this-CL fierce DE dog
   ‘Lisa fears this fierce dog.’

b. Zhe-zi 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 de pengyou haipa Lisi.  (ES)
   self DE friend fear Lisi
b. *Ziji de fumu danxin Fangfang de shengti.
   self DE parent worry Fangfang DE health (Chen 1995: (7b))

(9) a. Ziji de pengyou de guanhuai gandong-le Lisi.  (EO)
   self DE friend DE care touch-LE Lisi
   ‘The loving care of his, (own) friends touched Lisi.’

b. Ziji de chenggong zhenfen-le Fangfang.
   self DE success excite-LE Fangfang
   ‘He, (own) success excited Fangfang.’  (Chen 1995: (8b))

(38) a. Ziji de pengyou de canbao xingwei shi Lisi hen haipa.
   self DE friend DE brutal behavior make Lisi very fear
   ‘The cruelties of his, (own) friends made Lisi very frightened.’

b. Ziji de pengyou de guanhuai shi Lisi hen gandong.
   self DE friend DE care make Lisi very touch
   ‘The loving care of his, (own) friends makes Lisi 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):

(39) a.  
   b.  

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. [CP That he was praised] made every boy happy.
   b. It made every boy happy [CP that he was praised].
   c. [CP That he was praised] made every boy 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 was happy [VP because he was praised].
   b. [VP every boy [V be [VP [VP happy [V t [VP because he was praised]]]]]

(42) a. It made every boy happy [that he was praised].
   b. [VP it [V make [VP every boy [V t [VP happy [V t [CP that he 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) [Zìjì de xiāohài mei de jiàng]-de xiǎoxì shì Lìsì hén shānxìnxìn.
    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. [Zìjì de diànyìng] gǎndòng-le Ūngsànghà.
    self DE movie touch-LE Zhangsan
    ‘His (own) movie touched Zhangsan.’

b. [Zìjì de diànyìng] shì Ūngsànghà hén gǎndòng.
    self DE movie make Zhangsan very touch
    ‘His (own) movie made Zhangsan very touched.’

c. [Bèiren chōng-pái zìjì de diànyìng de xiǎoxì] gǎndòng-le Ūngsànghà.
    others re-shoot self DE movie DE news touch-LE Zhangsan
    ‘The news of others’ re-shooting hisi (own) movie touched Zhangsan.’

d. [Bèiren dūi zìjì de diànyìng de rènzhǎng] gǎndòng-le Ūngsànghà.
    others to self DE movie DE recognition touch-LE Zhangsan
    ‘Others’ recognition for hisi (own) movie touched Zhangsan.’

e. [Zìjì de diànyìng suǒ miàoshù de zhènsī gūshì] gǎndòng-le Ūngsànghà.
    self DE movie SUO describe DE true story touch-LE Zhangsan
    ‘The true story that hisi (own) movie described touched Zhangsan.’

(46) a. [Zìjì de chénggōng gūshì] zhēn-fén-le Ūngsànghà.
    self DE success story excite-LE Zhangsan
    ‘Hisi (own) success story excited Zhangsan.’

b. [Zìjì de chénggōng gūshì] shì Ūngsànghà hén xīngfèn.
    self DE success story make Zhangsan very excited
    ‘Hisi (own) success story made Zhangsan very excited.’

c. [Zìjì de chénggōng gūshì suǒ dāilái de yǐqié] zhēn-fén-le Ūngsànghà.
    self DE success story SUO bring DE everything excite-LE Zhangsan
    ‘Everything that is brought (to him) by hisi (own) success story excited Zhangsan.’

d. [Bèiren dūi zìjì de chénggōng gūshì de guānzhu] zhēn-fén-le Ūngsànghà.
    others to self DE success story DE attention excite-LE Zhangsan
    ‘Others’ attention to hisi (own) success story excited Zhangsan.’

e. [Yóuguān zìjì de chénggōng gūshì de bādào] zhēn-fén-le Ūngsànghà.
    concern self DE success story DE report excite-LE Zhangsan
    ‘Reports about hisi (own) success story excited Zhangsan.’

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

5.0 Summary

- Chinese ES and EO Ψ-Vs diverge importantly in syntactic distributional properties.
- They also differ in an important semantic property: complements of ES Ψ-Vs are intensional; complements of EO Ψ-Vs are not.
- Under an attractive hypothesis about the representation of intensionality in grammar, ES Ψ-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 Ψ-Vs, up to backward binding in EO Ψ-Vs.
- Backward binding – in EO Ψ-Vs & in causative variants of both ES and EO Ψ-Vs might be explained by a generalization of Belletti & Rizzi (1986), or of Huang & Liu’s (2001) logophor proposal.
References


