

The Projective Meaning of *Gei* in Mandarin Chinese

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Introduction: The morpheme *gei* in Mandarin has many functions, e.g. marking a benefactive and marking the indirect object in a double object construction. In this paper, I investigate a less well-known use of *gei*, which I call the *projective gei* because it introduces a projective meaning that the verbal event is undesirable and unexpected for the speaker (or some context-salient entity). I propose an analysis that accounts for its syntax and semantics at both the *at-issue* and the *not-at-issue* tiers.

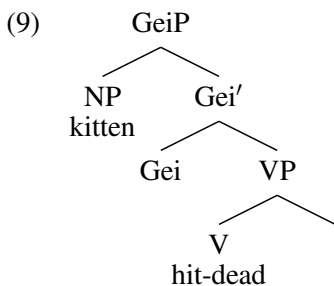
Syntax: *Projective gei* has two salient syntactic properties. First, it occurs in constructions with a fronted object, e.g. the Bei-construction (1a), the Ba-construction (1b), with an unaccusative verb (1c) or topicalization (1d). *Projective gei* also seems to be able to license a fronted object by itself which otherwise has to be postverbal, (2). The agent of (2) is existentially quantified instead of being a PRO/pro, as shown by the fact that it cannot be controlled: (3) cannot mean that *Everyone_i thinks that Zhangsan was hit and hurt by him_i*. *Projective gei* cannot occur in constructions where the object is postverbal (4), which is the unmarked object position in Mandarin. Second, the presence of *projective gei* requires a change of state predicate, otherwise the sentence is ungrammatical, (5). Note that the Bei-constructions, the unaccusatives and topicalization do not require a change of state predicate. The requirement must come from the *projective gei*.

Semantics: The projective meaning introduced by *gei* is that the verbal event is undesirable and unexpected for the speaker (or some context-salient entity). So *projective gei* is always found in sentences with a negative meaning (6), and is very odd in sentences that have a positive meaning (7). The projective meaning passes the *family of sentences* tests (Beaver et al. 2009): (i) The projective meaning cannot be negated. (8a) can only mean that it is undesirable and unexpected for the speaker that the kitten was not killed, but not that the kitten was killed and it is *not* undesirable and unexpected for the speaker (or some context-salient entity). (ii) The projective meaning also projects through a yes-no question. (8b) asks about whether the kitten was killed. Answering *no* cannot mean that the killing-kitten event is not undesirable and unexpected for the speaker (or some context-salient entity). (iii) When appearing in the antecedent of a conditional, the projective meaning does not add to the condition. The speaker of (8c) has to give the money no matter the killing-kitten event is undesirable and unexpected for him (or some context-salient entity) or not. (iv) Finally, the epistemic modal cannot have scope over the projective meaning. (8d) only means that *it is possible that the kitten was killed*, but not that *it is possible that killing the kitten is undesirable and unexpected for someone*.

Proposal: I propose that *projective gei* is a syntactic head with multidimensional semantics. Syntactically, *gei* selects a change-of-state VP as complement and introduces the internal argument of the verb at its specifier (9). Semantically, *gei* combines the verb with the individual argument and introduces a *not-at-issue* meaning that the verbal event is undesirable and unexpected for the speaker or some context-salient entity. The denotation of *projective gei* is shown in (12), where the *not-at-issue* meaning follows the colon. For the semantic computation of the *at-issue* tier, the argument at Spec GeiP saturates the internal argument of the verb (10). The result is exactly like the sentence with a postverbal object. The projection of *Gei* prevents the internal argument of the verb to be projected in the postverbal position, as shown by the ungrammaticality of (4). The internal argument of the verb must be projected at the specifier of *Gei*, where I suggest it cannot get structural case from the verb, thus the ungrammaticality of (11). To case mark the argument at Spec GeiP, either the case marker *ba* is inserted (1b) (Huang 1982), or the argument has to be phonologically empty as in topicalization (1d) and the Bei-construction (1a), where the internal argument is argued to be a null operator (Huang 1999). In the case where *gei* seems to independently license object fronting (2), the fronted object is in the subject position getting case from INFL, since the agent is existentially quantified instead of being a PRO/pro.

Implications: The properties of *projective gei* discussed in this paper help to distinguish it from the other uses of *gei*, some of which also have object-fronting (e.g. 13)) and therefore have the same surface form with *projective gei*. There are two major differences between (13) and sentences with *projective gei* (e.g. (14)). First, sentence (13) does not have a *not-at-issue* meaning while (14) does. Second, the *gei* morpheme in (13) can be omitted while the *projective gei* in (14) cannot be omitted. (14) without *gei* becomes very awkward and the agent is not existentially quantified, but a null pronoun. So *projective gei* licenses an existentially quantified external argument, while other uses of *gei* do not.

- (1) a. Zhangsan bei Lisi **gei** da-shang-le.
Zhangsan BEI Lisi GEI hit-hurt-ASP
'Lisi was hit and hurt by Zhangsan.'
b. Lisi ba Zhangsan **gei** da-shang-le.
Lisi BA Zhangsan GEI hit-hurt-ASP
'Lisi hit and hurt Zhangsan.'
- (2) Zhangsan *(**gei**) da-shang-le.
Zhangsan GEI hit-hurt-ASP
'Zhangsan was hit and hurt.'
- (3) Meigeren dou yiwei Zhangsan **gei** da-shang-le.
everyone DOU think Zhangsan GEI hit-hurt-ASP
'Everyone thinks that Zhangsan was hit and hurt.'
- (4) Lisi (***gei**) da-shang-le (***gei**) Zhangsan.
Lisi GEI hit-hurt-ASP GEI Zhangsan
- (5) a. Zhangsan bei dajia (***gei**) liaojie.
Zhangsan BEI people GEI know
'Zhangsan was known by people.'
b. Zhangsan (***gei**) shuijiao.
Zhangsan GEI sleep
'Zhangsan sleeps.'
- (6) a. Zhangsan bei laoban **gei** kaichu-le.
Zhangsan BEI boss GEI fire
'Zhangsan was fired by his boss.'
b. Zhangsan **gei** da-si-le.
Zhangsan GEI hit-dead-ASP
'Zhangsan was hit to death.'
- (7) a. # Zhangsan bei laoban **gei** biaoyang-le.
Zhangsan BEI boss GEI praise-ASP
'Zhangsan was praised by the teacher.'
b. # Zhangsan **gei** biaoyang-le.
Zhangsan GEI praise-ASP
'Zhangsan was praised.'
- (8) a. Xiaomao mei **gei** da-si.
kitten not GEI hit-dead
'The kitten was not hit to death.'
b. Shi-bu-shi xiaomao **gei** da-si-le?
be-not-be kitten GEI hit-dead-ASP
'It is the case that the kitten was killed?'
- (9) Ruguo xiaomao **gei** da-si-le, wo gei ni qian.
if kitten GEI hit-dead-ASP I give you money
'If the kitten was killed, I will give you money.'
- (10) Xiaomao keneng **gei** da-si-le.
kitten possible GEI hit-dead-ASP
'It is possible that the kitten was killed.'



- (10) a. $[[VP]] = [[V]] = \lambda x. \lambda e. \text{HIT-DEAD}(e)(x)$
b. $[[\text{Gei}]] = \lambda f_{\langle e, st \rangle} \lambda x \lambda e. f(e, x)$
c. $[[\text{GeiP}]] = \lambda e. \text{HIT-DEAD}(e)(\text{kitten})$
- (11) * Lisi Zhangsan **gei** da-shang-le.
Lisi Zhangsan GEI hit-hurt-ASP
intended: 'Lisi hit and hurt Zhangsan.'

(12) $[[\text{Gei}]] = \lambda f_{\langle e, st \rangle} \lambda x \lambda e. f(e, x)$: e is undesirable and unexpected for the speaker or some context-salient entity.

- (13) Yifu (**gei**) (ta) xi-ganjing-le.
clothes GEI he wash-clean-ASP
'The clothes were washed clean (for him).'

- (14) Zhangsan *(**gei**) da-si-le.
Zhangsan GEI hit-dead-ASP
'Zhangsan was hit to death.'

References: Beaver, David, Craige Roberts, and Mandy Simons (2009), "Investigating properties of projective meaning." Ms.; Huang, C.-T. James (1982), *Logical Relations in Chinese and the Theory of Grammar*. Ph.D. thesis, MIT; Huang, C.-T. James (1999), "Chinese passives in comparative perspective." *Tsing Hua Journal of Chinese Studies* 29: 42309.