

The Syntax and the Semantics of *Ba*-Construction in Mandarin Chinese

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【摘要】

本文主要探討漢語中把字句的結構及其語意。首先，本文討論「把」字在結構上的位置，並主張把字句在語意上如及物性及有界性等方面不同於一般的及物句。於此，本文認為把字句不管在結構或這在語意方面都義務要求完整的事件結構(Event structure)。該事件結構在結構上包涵完整的起始/起因結構(initial/causer)，過程結構(process)及結果結構(resultative)。同時，結果結構在語意上亦反映把字句的語意特徵－有界性(boundedness): 包含了時間的界限,空間的界限及量的界限。

【關鍵詞】

現代漢語，把字句，事件結構，有界性

【Abstract】

This paper focuses on the syntax and semantics of *ba*-construction in Mandarin Chinese. Firstly I discuss the structural position of *ba* and then argue that *ba*-construction differs from a general transitive construction in several ways: transitivity, implied readings and boundedness. In addition, I discuss the meaning of *ba*-construction and show that *ba*-construction requires a complete event structure which can be suitably captured by assuming Event Structure Syntax proposed by Ramchand (2008). The complete event (the requirement of a bounded event) can be introduced by a resultative clause which semantically donates a boundary, either temporally, spatially or by quantity.

【Keywords】

Mandarin Chinese, Ba-construction, Event Structure Syntax, Boundedness

The Syntax and the Semantics of *Ba*-Construction in Mandarin Chinese

1. Introduction

This paper discusses the syntax and semantics of *ba*-construction in Mandarin Chinese (henceforth: M.C.) by providing an analysis based on Event Structure Syntax proposed by Ramchand (2008).

It is well known that *ba*-construction in its meaning is similar to transitive construction, but with a different word order. Compare (1) to (2).

- (1) a. Ta da-shang le [Lisi]. [S V O]
he beat-injured ASP Lisi
'He beat Lisi and injured Lisi.'
- b. #Ta [Lisi] da-shang le.
he Lisi beat-injured ASP
- (2) 【*Ba*-construction】
- a. Ta [*ba* Lisi] da-shang le. [S *ba*-O V]
he BA Lisi beat-injure ASP
'He beat Lisi and injured Lisi.'
- b. *Ta da-shang le [*ba* Lisi]. [S V *ba* O]
he beat-injured ASP BA Lisi

(1a) is a general transitive construction introduced by a complex transitive verb *da-shang* 'beat-injured', where the word order is SVO: the object DP *Lisi* must follow the predicate *da-shang* in the unmarked case, in which no contrast focus is involved. The preverbal object DP in (1b) is only allowed when the DP is focused. However, when the object DP co-occurs with the morpheme *ba*, the object DP must appear in

preverbal position with *ba* (2a), instead of staying in the base position (2b).¹

In the following sections, I firstly discuss the structural position of *ba* and show the hierarchical relation between *ba* and other functional heads. Then I summarize the facts about *ba*-construction to show that *ba*-construction is not only syntactically different from transitive construction, but also is semantically distinguished from general transitive constructions. And I assume the event-structure syntax proposed by Ramchand (2008) to reanalyze transitive construction and *ba*-construction. I suggest that *ba*-construction is a construction which requires a complete event structure including a causing subevent, a process-denoting subevent and a result state; while this requirement is optional for transitive construction. The complete event structure is furthermore related to its semantics: a required boundary which can be introduced temporally, spatially and also by quantity.

2. Structure of *Ba*

In this section, I discuss the structural characteristics of *ba*-construction as follows:

- (3) a. Negation/Auxiliary must be structurally higher than *ba*-DP.
- b. *Ba*-DP and VP cannot be separated by negation or auxiliary, while it could be separated by a manner adverb.
- c. *Ba*-DP does not form a constituent.

First of all, negation *mei/bu* ‘not’ and auxiliary *hui* ‘would/will’ must appear in

¹ The object DP can be fronted in preverbal position when focus is involved in the sentence or a postverbal expression such as frequency phrases.

- (i) Ta [Lisi] shi da-shang le, dan mei da-si.
 he Lisi Foc beat-injure ASP but not beat-die
 ‘He beat Lisi and cause him injured, but didn’t cause him die.’
- (ii) Ta [Lisi] da-shang le yi-ci, Zhangsan da-shang le liang-ci.
 he Lisi beat-injure ASP once Zhangsan beat-injure ASP twice-CL
 ‘He injured Lisi once, and injured Zhangsan twice.’

the higher position than *ba*, the data are shown in (4) and (5).

- (4) a. Ta **mei/bu** *ba* Lisi da-shang.
 he not BA Lisi beat-injury
 ‘He beat Lisi but didn’t injure him.’
 b. *Ta *ba* Lisi **mei/bu** da-shang.
 he BA Lisi not beat-injured
- (5) a. Ta (bu) **hui** *ba* Lisi da-shang de.
 he not will/would BA Lisi beat-injury DE
 ‘He would/will beat Lisi and injure him.’
 b. *Ta (bu) *ba* Lisi **hui** da-shang de.
 he (not) BA Lisi will/would beat-injury DE

In (4a) and (5a), the negations *mei/bu* ‘not’ or auxiliary verb *hui* ‘will/would’ come right before the *ba* and the sentences are grammatical; on the other hand, the sentences became ungrammatical if negations or auxiliary appears after *ba* as (4b) and (5b) show. (Negation is also higher than auxiliary in structure because auxiliary in Chinese is more like a verb, instead of a modal) Therefore, the structure of *ba* in negation can be presented in (6).

- (6) [DP_{-subj} [Neg [Aux [*BA* [DP_{-Obj} [V-RC]]]]]]

Secondly, manner adverbs such as *henkuaide* ‘quickly’ can appear before *ba*-DP or after it, as (7) shows. Therefore, the hierarchical structure of *ba* and other functional categories can be represented in (8).

- (7) a. Ta **henkuaide** *ba* fan chi le.
 he quickly BA rice eat ASP

‘He finished up the meal quickly.’

- b. Ta *ba* fan **henkuaide** chi le.
 he BA rice quickly eat ASP
 ‘He finished up the meal quickly.’

- (8) Hierarchical structure
 Neg>Aux>(Adv)>Ba>(Adv)>VP

Furthermore, in this paper I also claim that *ba* and the object DP following *ba* do not form a constituent. This view is not new in the literature, where *ba* has been suggested as an element inserting *v* head (see Huang 1997, Lin 2001, and Kuo 2010 for the details). The first evidence is that *Ba*-DP is not free to move to any other position especially outside the *v*P, see (9b, d).

- (9) a. Ta *ba* Lisi da-ku.
 he BA Lisi beat-cry
 ‘He beat Lisi and caused him to cry.’
 b. ***Ba Lisi**, ta e da-ku. [topicalization]
 c. Ta zuotian *ba* Lisi da-ku.
 he yesterday BA Lisi beat-cry
 ‘He beat Lisi yesterday and caused him to cry.’
 d. *Ta **ba Lisi** zuotian da-ku. [focus movement]

If *ba*-DP forms a constituent, the whole phrase must adjoin to *v*P rather than other functional categories. If *ba*-DP does not form a constituent, no movement is allowed in the first place. Here I argue that *ba*-DP does not form a constituent because *ba*-DP is not capable of undergoing deletion like the preposition phrase *gei*-DP. That is, the deletion of *ba*-DP is not simply a deletion, but will trigger structural reanalysis. Compare (10) and (11). With the deletion of *ba Lisi* in (10), it is

impossible to get the interpretation of (10-i); instead, *Zhangsan* must be the person who is also beaten by the subject *ta* ‘he’ (10-ii), as well as *Lisi*.

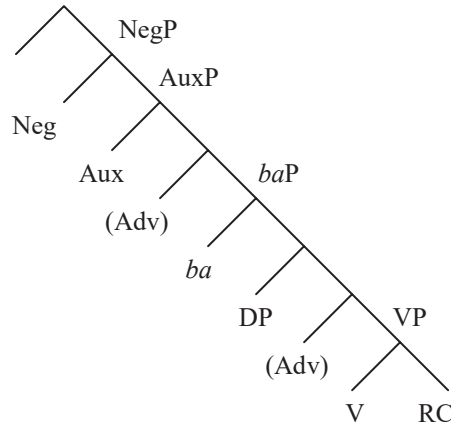
- (10) Ta [*ba* Lisi] da-ku, Zhangsan ye (~~*ba* Lisi~~) da-ku.
he BA Lisi beat-cry Zhangsan also BA Lisi beat-cry
i. *‘He beat Lisi and made him cry, and Zhangsan also beat Lisi causing him to cry.’
ii. ‘He beat Lisi to cry and also beat Zhangsan to cry.’
- (11) Wo song [gei ta] yi-ben shu, Zhangsan ye song (~~gei ta~~) yi-ben shu.
I give to him one-CL book Zhangsan also give to him one-CL book
‘I gave a book to him, and Zhangsan also gave a book (to him).’

Besides, *ba*-DP should also be differentiated from general prepositional phrases. Take *ti*-DP ‘for DP’ for instance, *ti*-DP can move to the topic position and focus position, as (12) shows.

- (12) a. Zhangsan [ti Lisi] mai le yi-ping jiu.
Zhangsan for Lisi buy ASP one-CL wine
b. [Ti Lisi], Zhangsan mai-le yi-ping jiu.
c. Zhangsan [ti Lisi] zuotian mai-le yi-ping jiu

If *ba*-DP is an adjunct like *ti*-DP ‘for DP’, (9b,d) should be grammatical like (12b, c). But the fact is not so. Therefore, *ba*-DP is not an adjunct and is thus not allowed to move like an adjunct. Again, I suggest that *ba*-DP is not a constituent like a prepositional phrase, and summarizing all the facts discussed above, the structure of the *ba*-construction can be considered as follows,

(13) Structure of *BA*-construction

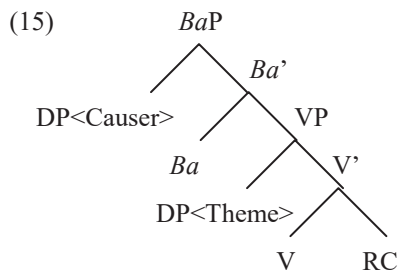


The next question is why DP cannot be separated from *ba*? I suggest that *ba* is not only a head, but also a case assigner of [acc]. According to Adjacency Condition, case assignee and the assigner must meet the requirement of adjacency; otherwise the DP cannot be properly licensed.

Moreover, based on the structure shown in (13), two questions need to be answered. The two questions are shown in (14):

- (14) a. How does the syntactic structure of *ba*-construction co-relate with the argument structure of the predicate?
- b. What kind of relation exists between *ba* and VP?

I suggest that *ba* in lexicon is a functional head that requires a DP <Causer/Initiator> and a VP, in which it includes two complements, a DP complement <Theme> and a resultative complement. The brief structure for *ba* can be illustrated in (15).



To prove (15), it is necessary to know what syntactic and semantic properties *ba*-construction has first. Is *ba*-construction the same as general transitive construction or not? How and in which way are these two constructions different from or similar to each other? I will start from empirical data and discuss them in the next section.

3. *Ba*-construction vs. Transitive Construction

Ba-construction is similar to general transitive construction in its transitivity of the predicate, but is still distinguished from general transitive in semantics and syntactic ways. I will discuss the transitivity of *ba* construction, the requirement of boundedness, and the lack of transitivity counterpart in *ba*-construction in what follows. In conclusion, I suggest that *ba*-construction is not derived from a general transitive construction.

3.1. Transitivity

Ba-construction and transitive construction are very similar in their transitivity of the predicate. In (16) and (17), unaccusative verb *dao* ‘fall down’ and unergative verb *xiao* ‘laugh’ are intransitive verbs, the transitivity can be obtained by syntactic causativization ((16c), (17c)), or by some morpho-syntactic operation such as inserting light verb *nong* ‘do’ in (16d) and compounding resultative verb in (17d).

- (16) Unaccusative verb: *dao* 'fall down'. Process +result (no initiation)
 (Unaccusative)
- a. Shu dao le.
 tree fall-down ASP
 'The tree fell down.'
- b. *Lisi dao le shu. (*Lexical causativization)
 Lisi fall-down ASP tree
 'Lisi caused the tree down.'
- c. Lisi shi/rang shu dao le. (Syntactic causativization)
 Lisi cause/make tree down ASP
 'Lisi caused/made the tree fall down.'
- d. Lisi **nong** dao le shu. (Light verb insertion: *nong* 'do')
 Lisi do fall-down ASP tree
 'Lisi caused the tree down.'
- (17) Unergative verb: *xiao* 'laugh' Initiation + process (no result)
 (unergative)
- a. Lisi xiao le.
 Lisi laugh ASP
 'Lisi laughed.'
- b. *Ta xiao Lisi. (*Lexical causativization)
 he laugh Lisi
 'He made Lisi laugh.'
- c. Ta shi/rang Lisi xiao le. (Syntactic causativization)
 he cause/make Lisi laugh ASP
 'He caused/made Lisi laugh.'
- d. Ta xiao-**fan** le Lisi. (V+RC)
 he laugh-turn over ASP Lisi.
 'He made Lisi laugh so hard that Lisi turned over himself.'

Ba-construction is more like transitive construction instead of causative construction because *ba* does not function like a causative marker, such as *shi/rang* ‘cause/make’ shown in (16c) and (17c). As (18) shows, the morpheme *ba* neither triggers syntactic causativization nor introduces transitivity to predicates; the sentences in (18) thus are still ungrammatical. On the other hand, as (19) shows, the transitivity requirement in *ba* construction can be satisfied by morpho-syntactic operation, which is the same as transitive constructions shown in (16d), (17d).

- (18) a. *Lisi **ba** shu dao le. (unaccusative verb)
 Lisi Ba tree fall-down ASP
 ‘Lisi caused the tree to fall down.’
- b. *Ta **ba** Lisi xiao le. (unergative verb)
 he BA Lisi laugh ASP.
 ‘He made Lisi laugh.’
- (19) a. Lisi **ba** shu **nong** dao le. (Light verb insertion)
 Lisi BA tree do fall-down ASP
 ‘Lisi did something to the tree and caused the tree down.’
- b. Ta **ba** Lisi **xiao-fan** le. (Resultative verb compound)
 he BA Lisi laugh-turn over ASP
 ‘He did something to Lisi (told a joke) and made Lisi laugh so hard that Lisi turned himself over.’

Those facts show that the causative-like reading in *ba*-construction is not derived by any *ba*-alternation process like syntactic causativization, but is inherent in the property of transitivity of the predicate.

3.2. Implied Event in *Ba*-construction

Even though the transitivity requirement of the predicate in *ba*-construction is

similar to general transitive construction, the meaning in *ba*-construction is different. Transitive verbs involving two arguments in one event, imply how the theme/patient is affected by the action that is introduced by the agent. On the other hand, *ba* connects two separated parts of the event: one is that ‘the agent/initiator starts to do something to affect the theme/patient’, where a preparatory process is involved, and the other is ‘how the theme/patient is affected by that action’, where a consequence state is involved (cf. Rhys (1996)). The difference lies on whether there is a potential event implied or not; the transitive construction does not imply *the additional event*, but *ba*-construction does.

The difference between these two constructions can be easily seen by questioning the sentences by *zenme* ‘how/by what means’. *Zenme* in (20a) modifies the main predicate *ku* ‘cry’, whereas it modifies an implied event ‘what the woman did to Lisi’, which can be considered introducing by *ba*.

- (20) a. Na nuren *zenme* ku-sha le Lisi?
that woman how cry-stunned ASP Lisi.
‘In which way did that woman cry so hard that it made Lisi stunned?’
* ‘What did that woman do to Lisi and thus made Lisi cry so hard as to get stunned?’
- b. Na nuren *zenme ba* Lisi *ku-sha* le ?
that woman how BA Lisi cry-stunned ASP
*‘In which way did that woman cry so hard that made Lisi stunned?’
‘What did that woman do to Lisi and thus made Lisi cry so hard as to get stunned?’

(20a), the case of transitive construction, is allowed to have subject *na nuren* ‘that woman’ interpreted as an experiencer of *laughing* and as well as a causer to make Lisi stunned. However, in *ba*-construction shown in (20b), the subject *na nuren* ‘that woman’ is interpreted as a causer of making Lisi cry so hard as to get him stunned.

That is, *zenme* ‘how/in which way’ in (20b) modifies the causative event that *ba* introduces, and thus the sentence implies a reading of asking ‘what did the causer *na nuren* ‘the woman’ do to cause the object Lisi to cry’. Obviously, the experiencer reading of the subject *na nuren* ‘that woman’ in *ba*-construction in (20b) does not exist.

As a result, even though the transitivity in *ba*-construction comes from the same syntactic causative process that a transitive construction has, *ba*-construction further implies an additional event where the subject DP introduced by *ba* must be a causer/initiator of it. This indicates that the theta role of subject DP in *ba*-construction is not assigned by the predicates, but by something like *ba*. Subject DP in transitive construction, as is well known, is directly assigned theta role by the predicate, therefore *na nuren* ‘that woman’ in (20a) can only be interpreted as an experiencer of the predicate *ku* ‘cry’.

3.3. Boundedness

The other semantic difference between general transitive construction and *ba*-construction is that there must be *boundary* (*completeness* of the event) in the event of *ba*-construction, but it is *optional* in transitive construction.

According to Smith (1994), aspect marker *le* semantically conveys termination for durative events, the completive reading of the event is due to the type of situation. The verb *da* ‘beat’ shown in (21) is an atelic verb and only has terminative reading when adding the perfect aspect marker *le*. In this case, transitive construction is grammatical (21a) but not for *ba*-construction (21b).

(21) Atelic verb (without end point): *da* ‘beat’

- a. Ta da le Lisi (terminative reading, no result state)
 he beat ASP Lisi
 ‘He beat Lisi.’

- b. *Ta *ba* Lisi da le.
 he BA Lisi beat ASP

Contrary to an atelic verb, a telic verb (no matter whether the final point is encoded in the verb or introduced by a complement) with perfect marker *le* results in a completive reading of the event, and both general transitive construction and *ba*-construction are allowed as (22) shows.

(22) Telic verb (accomplishment could be introduced by complement):

gai-fangzi ‘build- house’

- a. Ta gai le fangzi. (completive reading, with result state)
 he build ASP house
 ‘He built a house.’
- b. Ta haishi *ba* fangzi gai le.
 he eventually BA house build ASP
 ‘He eventually built a house (without considering others’ opposition).’

Gai-fangzi ‘build-house’ is an accomplishment verb and the co-occurrence of *le* introduces a closed situation (with an end). In this sentence *ba*-alternation is allowed. Lets see another verb *jian* ‘build’, which is a synonym for *gai* ‘build’. *Jian fangzi* ‘build house’ in (23a) donates a bounded event; however, it does not have a counterpart of *ba*-construction (see (23b)).

- (23) a. Lisi jian le yi-dong fangzi.
 Lisi build ASP one-CL house
 ‘Lisi built a house.’
- b. *Lisi *ba* na-dong fangzi jian le.

Lisi BA that-CL house build ASP

As mentioned above, the complement *yi-dong fangzi* ‘a house’ or *na-dong fangzi* ‘that house’ can introduce an end point for the event of *jian* ‘build’, and thus the completive reading in (23a) is achieved. However, as (23b) shows, the perfective marker *le* does not introduce an end point for the event of *jian* ‘build’. This fact does not conflict with our discussion here because *gai* and *jian* could be different in their semantics. In fact, if we introduce a temporal boundary to *jian-le*, the sentence with *ba* becomes acceptable. See (24).

- (24) Lisi *ba* na-dong fangzi jian le san -nian, hai mei jian-wan.
 Lisi BA that-CL house build ASP three-year still not build-finish
 ‘Lisi has been building that house, but it’s still not finished after three years.’

The facts in (23b) and (24) support our discussion here that *ba*-construction requires a bounded event VP as its complement, and once the event VP fails to have boundary (I will discuss the boundedness in *ba*-construction in section 5), the sentence becomes unacceptable like (21b) and (23b).

In sum, not every transitive verb allows *ba*-alternation, in addition to *transitivity* requirement, *boundedness* of the event is also required in *ba*-construction. *Ba*-construction must include a final point of the event or the result state of the event (an interval after final point). This kind of completeness of the event can be introduced into VP by several ways: resultative compound VP shown in (1b) itself has already included a result state, but others such as verbs taking PP (25a), resultative clause shown in (25b) or resultative VP shown in (25c) as the complements can also make the completed situation possible.²

² For the other way round, as Rhys (1996) observed, even the predicates denote boundedness, *ba*-construction is not allowed.

(i) a. Wo kanjian ta le.

- (25) a. Ta *ba* Lisi da le yi-dun. (V1-PPcomplement)
 he Ba Lisi beat ASP one-CL
 'He beat Lisi up.'
- b. Ta *ba* Lisi da de zhang-bu-qi-lai. (V1+Resulative clause)
 he BA Lisi beat DE stand-not-rise-come
 'He beat Lisi and caused Lisi barely to stand up.'
- c. Lisi *ba* tie qiao-da cheng yishupin. (V1+resultative VP)
 Lisi BA iron hammer-beat become artifact
 'Lisi hammered at the iron and made it as an artifact.'

3.4. *Ba*-construction without Transitive Counterpart

There are some data also showing that *ba*-construction does not derive from general transitive construction, such as the examples in (26) and (27). For each *ba*-construction, there is no counterpart in transitive construction.

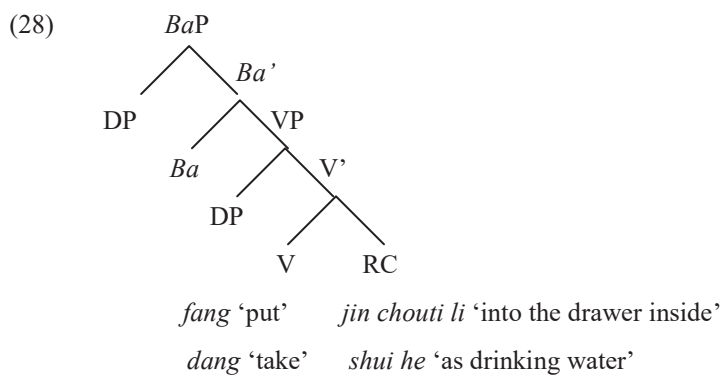
- (26) a. Ta *ba* **shu** fang jin chouti li. (*Ba*-construction)
 he BA book put into drawer inside
 He put the book into the drawer.
- b. *Ta fang **shu** jin chouti li. (V O)
 he put book into drawer inside
- (27) a. Ta *ba* **jiu** dang shui he. (*Ba*-construction)
 he BA alcohol take-as water drink
 'He drinks alcohol as water'

-
- b. *Wo *ba* ta kanjian le.
 c. Wo chi-bao fan le.
 d. *Wo *ba* fan chi-bao le.

The ungrammaticality of (i-b)(i-d) is generally said to be because of the affectedness. Object DP in *ba*-construction must be subject to the affectedness constraint, whereas object DP in general transitive construction does not need to.

- b. *Ta dang shui he jiu. (V O)
 he take-as water drink alcohol

The structures of these sentences can be captured by *ba* structure I assumed in (15) (= (28)).



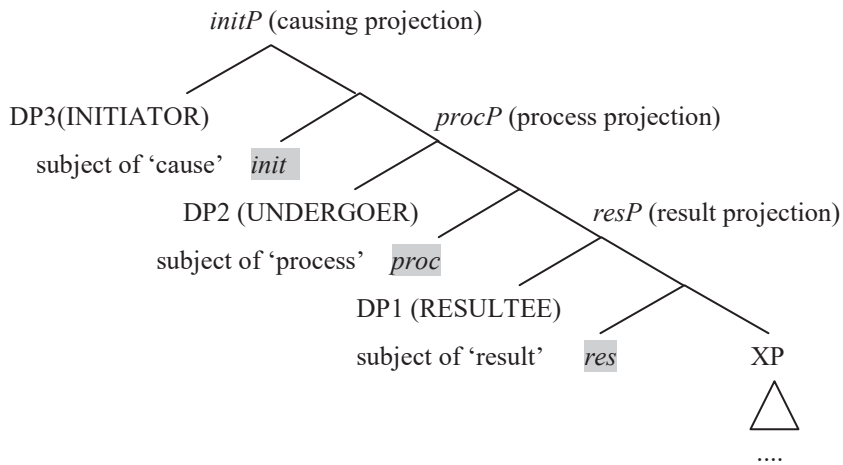
4. Event-structure Syntax

In this section, I will answer the questions shown in (29) (= (14))

- (29) a. How does the syntactic structure of *ba*-construction correlate to the argument structure of the predicate?
 b. What kind of relation exists between *ba* and VP?

First of all, I follow Ramchand (2008) and suggest that syntactic projection of arguments is based on event structure. According to Ramchand, event structure contains three subevental components: causing subevent, process-denoting subevent and subevent corresponding to result state. Each subevent is represented as its own projection, and the specifier of each project represents each participant (argument) involved in the event structure. The event-syntax structure is in (30).

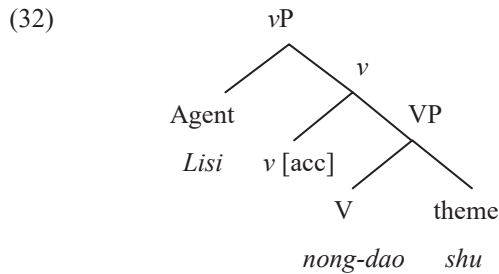
(30) Ramchand (2008,39 (1))



The specifier of *ini* donates INITIATOR/CAUSER which is the subject of the ‘cause’; the specifier of *proc* indicates the UNDERGOER which undergoes the action and change of the state. The specifier of *res* indicates the subject (RESULTEE) of the resultative state. The complement of *resP* is optional and could be any kind of categories. I suggest that transitive construction and *ba*-construction can be decomposed by the event structure based on (30).

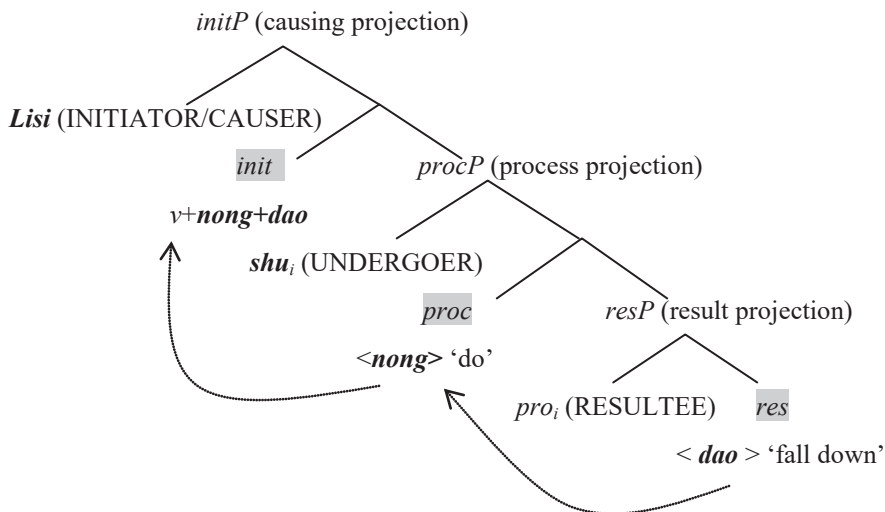
Firstly, let us see the general assumption about the structure of transitive construction.

- (31) Lisi **nong** dao le shu. (Lexical light verb insertion: *nong* ‘do’)
 Lisi do fall-down ASP tree
 ‘Lisi did something to cause the tree down.’



Nong-dao ‘do-down’ is a compound predicate and assigns theta role to two arguments (*Lisi* and *shu* ‘tree’); however, the drawback of the structure is that it does not represent the complete semantic relation between the argument *shu* ‘tree’ and the predicate. That is, the argument *shu* ‘tree’ is not only the affectee of the verb *nong* ‘do’, but also a theme that undergoes the static change of falling down. This semantic information is lost in (32), but if we decompose the verb by event structure shown in (30), we can get a clearer picture of semantic relations through the syntactic structure. The reanalyzed structure of (31) is in (33).

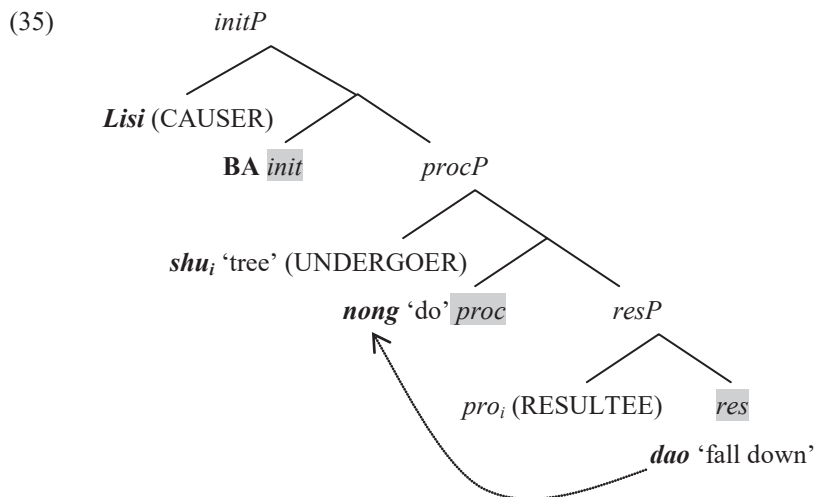
(33) Event-structure of (31)



The compound predicate *dong-dao* ‘do-down’ can be decomposed into three parts, lexical heads *nong* and *dao*, and functional head *v*. Lexical heads *nong* and *dao* enter the computational system separately and undergo head movement to satisfy the morphological requirement. *Nong-dao* further undergoes head movement to *v* which is a functional head assigning theta role <initiator/causer> to an argument. In numeration, I assume that there are *pro* and its antecedent *shu*; *pro* receives RESULTEE from *dao* as its theta role, and *shu* receives UNDERGOER from *nong* as its theta role. *Dao* merges with *pro* and projects *resP*, then *nong* merges with *resP* and *shu* to project *procP*. The order of merge of *pro* and *shu* is arbitrary, but *pro* cannot be properly interpreted if it is not c-commanded by its antecedent. Therefore, (33) is the only structure that is not ruled out syntactically and semantically, and also a structure that captures all the semantic relations well.

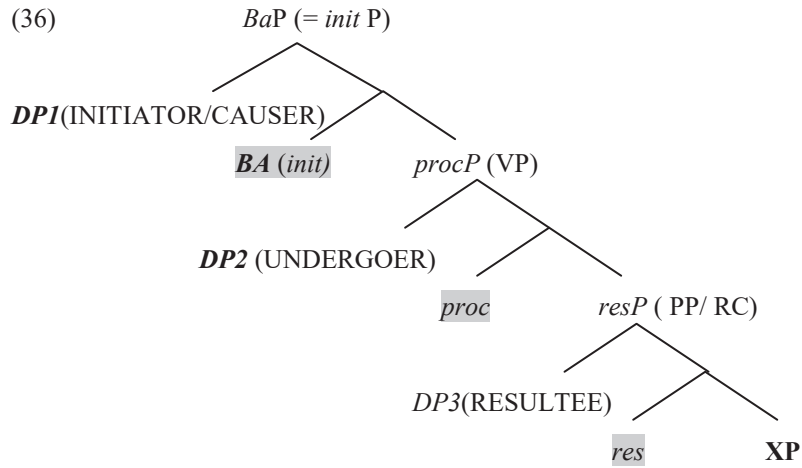
Next, what should the structure of *ba*-construction be under the assumption of event structure? In sentence (34), subject DP *Lisi* before *ba* is a CAUSER, who causes *shu* ‘tree’ to undergo static change; object DP *shu* ‘tree’ introduced by *ba* is both UNDERGOER and RESULTEE of *nong dao*. Then the event structure of (34) can be illustrated as that in (35).

- (34) *Lisi ba shu nong dao le.*
 Lisi BA tree DO fall-down ASP
 ‘Lisi did something to cause the tree down.’



In (35), *ba* is assumed as a *v* and also the head of *init* which introduces an initiator or a causer; *nong* ‘do’ and *dao* ‘fall down’ are the same as the case of transitive construction in (33); *nong* occupies the head position of *proc* and *dao* occupies the head position of *res*. *Ba* and *nong*, *dao* were altogether in the numeration, and due to the lexical property of *ba*, it requires a VP as its complement and DP in its specifier. That is why *ba* cannot merge with any other heads to form a compound verb, such as **ba nong*, **ba-dao*, **ba-nong-dao*. *Shu* ‘tree’ is in the specifier of *proc* and co-indexes with *pro* in the specifier of *res*, as we have discussed the above. The difference between the structure of transitive construction and *ba*-construction would be what occupies the head position of *init*, functional head null *v* or *ba*.

As a result, I suggest that the meaning and the structure of *ba* construction can be well captured by assuming event-structure shown in (36).



If the structure is correct, the question shown in (14a), repeated in (37) can be answered:

- (37) How does the syntactic structure of *ba*-construction correlate the argument structure of the predicate?

Ba is the head of *initP*, which takes *procP* (VP) as its complement. And *procP* further takes *resP* as its complement. The DP1 in *ba*-construction donates initiator/causer of the *initiation* subevent. Object DP2 right after *ba* occupies the specifier of *procP*; it undergoes static change over time. *ResP* can be introduced by any kind of category such as PP and resultative clause.

5. The boundedness in *Ba*-construction

In 3.3 I argued for the obligatory completive event structure of *ba*-construction, that is, there must be a *boundary* (*completeness* of the event) in the event structure in *ba*-construction. In this section, I discuss the requirement of the boundedness in *ba*-construction from a semantic perspective and show that the boundary can be

introduced temporally, spatially and by quantity.

5.1. Temporal Boundary (Telicity and Durative/Time Span Adverbial)

Ba-construction requires a temporal boundary. Thompson (2006) claims that durative phrase is incompatible with telic predicate as (38) shows. According to Thompson (2006), the bounded verb *build* in combination with definite NP object *the house*, which is bounded, results in the telic reading (38a). While the same verb in combination with indefinite NP *houses*, which is unbounded, results in atelic reading (38b).

- (38) a. John built the house in a week/*for a week.(Thompson 2006 (10a,b))
b. John built houses *in a week/for a week.

The time span adverbial like *in a week* is compatible with telic reading (bounded), but not with atelic reading as shown in (38a); on the other hand, a durative adverbial like *for a week* is compatible with atelic reading as shown in (38b). The durative (*for a week*) forces an interpretation in which the event must continue for the time; a time span adverbial can target the end of event (MacDonald 2008, 113).

In Mandarin Chinese, the temporal adverbial *yi xingqi* ‘one week’ can be either durative or a time span adverbial; the difference between these two is distinguished by their structural positions. As (39a) shows, a time span adverbial must be interpreted in higher position than VP, whereas durative must be interpreted inside VP, as shown in (39b).

- (39) a. Lisi yi xingqi xie le yi-ben shu.
Lisi one week write ASP one-CL book
‘Lisi wrote a book in a week.’

- b. Lisi yi-ben shu xie le yi xingqi.
 Lisi one-CL book write ASP one week
 ‘Lisi has been writing a book for a week.’

(39a) implies that Lisi is very good at writing a book, so that he is able to accomplish writing a book in only one week, or in every week. The event of writing a book is closed in a certain period (time span). Contrary to (39a), (39b) implies that ‘Lisi has been writing a book for a week’, meaning that the event of writing a book takes at least one week. *A week* is focused on the duration of the event, instead of the period of time of that whole event.

On the basis of this assumption, we can predict that if the event that *ba*-construction introduced is telic with a temporal boundary, it should not allow the co-occurrence of durative, because durative is only compatible with atelic. If *ba*-construction is allowed to co-occur with a time span adverbial, we can predict that *ba*-construction must have a telic reading, instead of a durative reading. The predictions are stated in (40).

- (40) Predictions.
- If *ba*-construction requires an event with a temporary boundary, durative (temporal phrase inside VP) cannot be compatible with *ba*.
 - If *ba*-construction does not require an event with a temporary boundary, durative may be allowed in *ba*-construction.

The result shows the prediction (40a) is correct; the data are shown in (41).

- (41) a. Lisi ba fan chi-wan le. ([telic, durative])
 Lisi BA rice eat-finish ASP
 ‘Lisi finished up the meal.’

- b. *Lisi ba fan chi-wan le *shi fenzhong*.
Lisi BA rice eat-finish ASP ten minute
'Lisi finished up the meal for 10 minutes.'
- c. ?Lisi ba fan *shi fenzhong(nei)* chi-wan le.
Lisi BA rice ten minutes (in) eat-finish ASP
'Lisi finished up the meal in ten minutes.'
- d. Lisi *shi fenzhong* ba fan chi-wan le.
Lisi ten minutes BA rice eat-finish ASP
'Lisi finished up the meal in ten minutes.'

(41b) shows that the durative *shi fenzhong* 'ten minutes' inside VP is not compatible with *ba*-construction; whereas *shi fenzhong* 'ten minutes' as a time span adverbial appears outside the VP or above *ba*-DP in *ba*-construction, as (41c, d) show. Due to this, the event in *ba*-construction can be considered as having the property of telic, rather than atelic.

5.2. Spatial Boundary and Quantity

Besides the temporal boundary, it is observed that spatial boundary and quantity are compatible with *ba*-construction. The data are shown in (42) and (43) respectively. In (42), the PP *dao gangkou* 'to the port' in (42b) and *guo taiping yang* 'cross the Pacific Ocean' in (42c) introduce spatial boundary such as the path and the goal, and the sentences are more acceptable than (42a).

- (42) a. *Ta ba quan hua (le).
he BA boat paddle (ASP)
- b. Ta ba quan hua dao gangkou.
he BA boat paddle till port
'He paddles the boat to the port.'

- c. Ta ba quan hua guo taiping yang.
he BA boat paddle across Pacific ocean
'He paddles the boat across the Pacific ocean.'

The same property can also be observed in quantity as well. The quantity here is defined as an extent reading of the event. In (43), the pragmatic meaning of the sentence in (43a) is to express the great extent of 'how often he drinks the alcohol!', and the sentence in (43b) expresses the great extent of 'how cheap the alcohol is!'. In (43c), the meaning it implies is 'He tries as a last resort to save a hopeless situation'. This kind of extent reading is also compatible with *ba*-construction.

- (43) a. Ta ba jiu dang shui he.
he BA alcohol take-as water drink
'He drinks (alcohol) like a fish. (How often he drinks alcohol!).'
- b. Ta ba jiu dang shui mai.
he Ba alcohol take-as water sell
'He sells alcohol as cheap as water. (How cheap the alcohol is!).'
- c. Ta ba si ma dang huo ma yi.
he BA dead horse take-as alive horse cure
'He treats the dead horse just as if it is still alive. (He tries as a last resort to save a hopeless situation).'

6. Conclusion

In this paper, I discussed the semantics and syntax of *ba*-construction in Mandarin Chinese. I firstly compared the differences between *ba*-construction and the general transitive construction, and suggested that *ba* lexically requires a DP <Initiator/Causer> and a bounded VP, which includes a DP<Theme> and a resultative state (RC). Secondly, I follow Ramchand (2008) and reanalyzed transitive

construction and *ba*-construction by assuming event-structure syntax, and further showed that this event-structure aptly represents the full-fledged semantic information of these two constructions. The last discussion in this paper was about the semantic requirement of boundedness of the VP event that *ba* selects, where boundedness can be introduced into the VP event either by time span, spatial boundary or quantity.

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