

The Middle Construction in Mandarin Chinese and the Presyntactic Approach*

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The purpose of this paper is to argue for a presyntactic approach to middle formation in Mandarin Chinese. The subjecthood of the clause-initial NP in the construction at issue is first demonstrated. It is thus not true that these sentences may only be derived by topicalization along with a null subject, as Li and Thompson (1981) propose. It is further argued that the patient NP in a grammatical subject position is base-generated as external argument of the middle verb and that the logical subject of the middle verb is suppressed and present only at some presyntactic structure. This presyntactic approach to middle formation in Mandarin Chinese is supported by the comparison between middles and *ba*-constructions involving intransitive *V-de* resultatives as well as by the comparison between middles and inchoatives. The findings of this study thus lend support to a view put forth by Authier and Reed (1996) that middle formation is not homogeneous across languages.

Key words: middle construction, presyntactic approach, argument structure, patient subject construction

1. Introduction

The term “middle” was originally conceived as a voice category to designate an intermediate category between the active and passive voices. As Kemmer (1993:1) points out, “sometimes it denotes a formal category (e.g. Valfells 1970) in keeping with its original use in referring to an inflectional category of the Classical Greek verb.” In other cases it is purely semantic; e.g., Lyons (1969) characterizes the middle voice as indicating that “the ‘action’ or ‘state’ affects the subject of the verb or his interests.” Such instances can be illustrated by English middles in (1).

- (1) a. The baggage transfers efficiently. (Stroik 1992)
b. Harlequin Romances, worldwide, sell six copies a second. (Fagan 1992:55)

In this article, I will take the term “middle construction” to describe a construction where a patient argument does not occur in the canonical object position but instead in

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the grammatical subject position and crucially the middle verb is not inflectionally marked as a passive verb.

As a language with meager morphological marking, Chinese lacks an inflectional morpheme denoting middle voice. Applying the semantic criterion, the issue thus arises as to whether Chinese exhibits any phenomenon on a par with the so-called middle construction in other languages, such as English. I will argue, first, that Mandarin Chinese has constructions syntactically and semantically comparable to middle constructions in other languages. Second, I will argue in favor of a presyntactic approach (e.g. in Fagan 1988, 1992, Zribi-Hertz 1993 and Ackema and Schoorlemmer 1994, 1995) to deriving these middle sentences. More specifically, the preverbal patient NP in a grammatical subject position is base-generated as an external argument of the middle verb. The logical subject of the middle verb is suppressed and present only at some presyntactic structure. This approach contrasts with the syntactic approach taken by Cheng and Huang (1994) (cf. Huang 2005) to Mandarin Chinese middles along the lines of Keyser and Roeper (1984) (see also Carrier and Randall 1992, Stroik 1992, 1995, 1999, Hoekstra and Roberts 1993, Authier and Reed 1996). The findings of this paper will support the view of Ackema and Schoorlemmer (1995) and Authier and Reed (1996) that middle formation is not necessarily homogeneous across languages. Some languages may involve presyntactic derivation while others may involve NP-movement. In the literature on middle formation, the syntactic approach appears to be more often defended than the presyntactic one. Chinese, however, will be shown in this paper to be a language that derives middles at the presyntactic level, thus lending support to the presyntactic approach as an approach to middle formation.

At the center of my discussion is a sentence-type having a patient argument NP in the sentence-initial position but lacking an explicit passive marker *bei*, called the “notional passive” by Wang (1958) and Liu et al. (1983/1996) as in (2).¹

¹ These sentences fall under the traditional category of patient subject sentences; canonical *bei* passives are another member of this category. The notional passives have many structural and semantic properties similar, but not identical, to those of short *bei* passives as in (i), to which we will return in Section 4.

- (i) a. yifu bei xi-hao-le
 clothes BEI wash-good-ASP
 ‘The clothes have been washed.’
 b. zhangai bei paichu-le
 barrier BEI exclude-ASP
 ‘Barriers have been removed.’
 c. diren bei da-tui-le
 enemy BEI hit-withdraw-ASP
 ‘The enemy has been defeated.’

- (2) a. yifu xi-hao-le
 clothes wash-good-ASP
 ‘The clothes have been washed.’
- b. zhangai paichu-le
 barrier exclude-ASP
 ‘(The) barriers have been removed.’
- c. diren da-tui-le
 enemy hit-retreat-ASP
 ‘The enemy has been defeated.’

After establishing that the sentence-initial patient NP in such sentences can be in a grammatical subject position rather than a topic position in Section 2, I will argue for a presyntactic approach to these Chinese middles in Section 3 by showing that this grammatical subject NP is derived by base-generation rather than NP- movement and that there is no syntactically implicit logical subject. Section 4 will examine the semantic properties of this construction. Section 5 reviews the two presyntactic approaches to middle formation and discusses their possible application in accounting for the middle formation in Chinese. Section 6 presents a brief conclusion.

2. The preverbal patient NP as a grammatical subject

To argue for the treatment of notional passives in (2) as equivalents to middles in other languages, the first task is to show that the sentence initial preverbal NP can be, and in certain cases must be, in a grammatical subject position. This is because Chinese, a pro-drop language, allows a derivation involving both topicalization and a null subject. Thus the structure in (3) is a natural possibility for sentences like (2a).

- (3) [_{TopicP} yifu [_{IP} pro [_{VP} xi-hao-le]]]
 clothes wash-good-ASP
 ‘The clothes have been washed.’

Here the topic NP moves from the complement position of the verb to a projection immediately higher than IP. Such an NP has been demonstrated by many studies to exhibit A'-properties (see for example Tsao 1977, 1990, Shyu 1995 and Ting 1995a, cf. Shi 2000 and also unique discourse functions, for which see Tsao 1977, 1990). I will henceforth use the term “topic position” for such an A'-position outside of IP. This topic approach can be found in Li and Thompson (1981, 1994). Though the preverbal patient NP can be derived by topicalization, I will argue that it can be in a

grammatical subject position. The construction thus has a configuration on a par with middles in other languages like English. In addition to several arguments provided by Cheng and Huang (1994), I will provide two more arguments in favor of the subjecthood of this patient NP. These arguments will show that the notional passives under discussion can only have the structure in (4), but not the structure in (3).

- (4) [IP yifu [VP xi hao- le]]
 clothes wash-good-ASP
 ‘The clothes have been washed.’

The first argument is based on reflexive binding. Using the paradigm in (5), Tan (1991) (see also Y. Li 1991) shows that the preverbal patient NP in (5a) may bind a reflexive; this behavior is on a par with that of a grammatical subject in the *bei* passive structure as in (5b), rather than with that of a topic NP as in (5c).

- (5) a. Lisi_i xiafang dao-le ziji_i de lao jia
 Lisi demote arrive-ASP self DE old home
 ‘Lisi has been demoted to his own hometown.’
 b. Lisi_i bei lingdao_j xiafang dao-le ziji_{i/j} de lao jia
 Lisi BEI leader demote arrive-ASP self DE old home
 ‘Lisi_i has been demoted to his_{i/j} own hometown by the leader_i.’
 c. Lisi_i, lingdao xiafang_j dao-le ziji_{*i/j} de lao jia
 Lisi leader demote arrive-ASP self DE old home
 ‘Lisi_i, the leader_j has demoted him to his_{*i/j} old hometown.’

This fact indicates that the preverbal patient NP in (5a) is in a grammatical subject position rather than in topic position.

Similar examples with reflexive binding can be used to support this point. Notice that *ziji* may also take a so-called “subcommanding” NP as its antecedent in (6) (Tang 1989).

- (6) Zhangsan_i de jiaobao hai-le ziji_i
 Zhangsan DE arrogance harm-ASP self
 ‘Zhangsan’s arrogance has harmed him. (Zhangsan has harmed himself with his own arrogance.)’

Now consider the acceptable instance where the binder of *ziji* is contained in a

preverbal patient NP as in (7a). If it contains a null subject and *Zhangsan's car* is in a topic position, its acceptability would be mysterious since the containing NP of the subcommander cannot be in a topic position, as shown by (7b). Thus it must be the case that the preverbal patient NP in (7a) sits in a grammatical subject position like the grammatical subject NP in (7b), rather than in a topic position as in (7c).

- (7) a. Zhangsan_i de che zai ziji_i de dian-li mai de hen hao
 Zhangsan DE car at self DE store-inside sell DE very good
 ‘Zhangsan_i’s car sells well at the car dealership that he_i owns.’
- b. Zhangsan_i de che bei Lisi_j zai ziji_{i/j} de dian-li mai de hen hao
 Zhangsan DE car BEI Lisi at self DE store-inside sell DE very good
 ‘Zhangsan_i’s car is sold well by Lisi_j at the car dealership that he_{i/j} owns.’
- c. Zhangsan_i de che, Lisi_j zai ziji_{*i/j} de dian-li mai de hen hao
 Zhangsan DE car Lisi at self DE store-inside sell DE very good
 ‘Zhangsan_i’s car, Lisi_j sold it well at the car dealership that he_{*i/j} owns.’

I thus take reflexive binding as a reliable test for the subjecthood of the preverbal patient NP.

To examine another environment in which the preverbal patient NP must be a grammatical subject rather than topic, we must consider the distribution of indefinite NPs in Chinese. Notice that a topic NP must be definite, as many researchers (e.g. Tsao 1977, Li and Thompson 1981) have noticed as in (8a).

- (8) a. zhe zhong yu wo hen xihuan chi
 this kind fish I very like eat
 ‘This kind of fish, I like to eat very much. (I like to eat this kind of fish very much.)’
- b. *yi zhong yu wo hen xihuan chi
 one kind fish I very like eat
 ‘One kind of fish, I like to eat very much. (There is one kind of fish that I really like to eat.)’

Shyu (1995) (see also Lee 1986 and Tsai 1994) points out that it is not true that a subject NP must be definite. An indefinite NP may occur as a subject in root clauses involving a stage level predicate.

- (9) a. yiwei yisheng xiang wo jieshao tamen de bingren
 one doctor toward I introduce they DE patient
 ‘A doctor introduced their patients to me.’ (Shyu’s 1995:153 example taken from Fan 1985)
- b. *yige ren hen congmin/gao (Shyu 1995:154)
 one person very smart/tall
 ‘Someone is very smart/tall.’

This numeral NP is interpreted as an indefinite referential (or specific) and occurs only with a stage-level predicate.² Making use of the distribution of such numeral NPs in subject but not in topic position, we can see that a numeral NP, interpreted as indefinite referential, may occur in a sentence-initial position in notional passives (10a), just like a subject NP in *bei*-passives (10b) and unlike a topic NP (10c).

- (10) a. yijian beixin zhi de you fei you chang
 one vest weave DE again fat again long
 bu zhidao dasuan gei shei chuan (Mei 1990)
 not know plan give who wear
 ‘One vest was made wide and long.
 I don’t know who is going to wear it.’
- b. yijian beixin bei zhi de you fei you chang
 one vest BEI weave DE again fat again long
 ‘One vest was made wide and long.’
- c. *yijian beixin ta zhi de you fei you chang
 one vest he weave DE again fat again long
 ‘One vest, he wove it both wide and long. (He made the vest wide and long.)’

To summarize, I have argued that the preverbal patient NP in notional passives can, and in certain cases must be, in a grammatical subject position. Once the grammatical subject position of the patient NP has been shown, we may go on to

² Another context in which a numeral NP occurs in a grammatical subject position is in conditional clauses with a stage-level or individual-level predicate. This numeral NP is interpreted nonreferentially.

- (i) a. ruguo yige ren zhong-le caipiao, ta hui biande hen fuyou.
 if one person get-ASP lottery he will become very rich
 ‘If one wins the lottery, he will become very rich.’ (Shyu’s 1995:153 example taken from Lee 1986)
- b. ruguo yige ren hen congming dan bu yonggong, haishi meiyouyong.
 if one person very smart but not diligent still useless
 ‘If one is smart but not diligent, it’s still useless.’ (Shyu’s 1995:155 example)

study such notional passives as a type of middle construction in Chinese.

Before leaving this section, I'd like to indicate topicalization as a possible derivation by which the patient NP will land in its sentence initial position. This explains why the preverbal NP can be the internal argument of an embedded predicate as in (11).

- (11) naben shu, rang Zhangsan du-guo-le
that book let Zhangsan read-ASP-ASP
'That book, (someone) made Zhangsan read it. (Someone made Zhangsan read that book.)'

The well-formedness of such sentences follows straightforwardly if the preverbal NP is a topic and there is an empty subject in the matrix clause, given that sentences of the same structure but with overt matrix subjects are well-formed as in (12).

- (12) naben shu, wo rang Zhangsan du-guo-le
that book I let Zhangsan read-ASP-ASP
'That book, I made Zhangsan read it. (I made Zhangsan read that book.)'

Such sentences are only possible when the preverbal NP is derived by topicalization, since middle formation cannot be unbounded. This suggestion is supported by the fact that sentences like (11) are more readily acceptable if there is a pause after the sentence initial patient NP.

3. Lexical versus syntactic derivation of middles

If the notional passives are indeed a type of middle construction with the patient NP in the grammatical subject position, the next question to consider concerns their derivations. Researchers like Keyser and Roeper (1984), Roberts (1987), Carrier and Randall (1992), Stroik (1992, 1995, 1999), Hoekstra and Roberts (1993) and Authier and Reed (1996) argue that middle formation requires the suppression or demotion of an external argument and the syntactic promotion of an internal argument. On this approach, analyses of middle constructions are very similar to the more or less standard Government-Binding Theory analysis of passives. On the other hand, researchers such as Fagan (1988, 1992), Zribi-Hertz (1993) and Ackema and Schoorlemmer (1994, 1995) argue that middle formation is strictly a presyntactic operation. The middle verb's grammatical subject (the logical object) is its external argument and is generated in the underlying subject position, which is assumed to be

VP-internal. Moreover, the logical subject's theta-role is not syntactically discharged but lexically saturated.

Concerning the derivation of Chinese middles, Cheng and Huang (1994) (cf. Huang 2005) take the syntactic approach. They propose that the alternation between examples like (13a) and (13b) is "a result of argument-suppression followed by NP-movement" (1994:207).

- (13) a. shoupa ku-shi-le
 handkerchief cry-wet-ASP
 'The handkerchief is soaked with someone's tears.'
- b. ta ku-shi-le shoupa
 She cry-wet-ASP handkerchief
 'She soaked the handkerchief with her tears.'

That is, the intransitive sentence in (13a) has an underlying transitive argument structure. But a rule of de-thematization suppresses the Agent theta-role and as a result the Theme or Patient argument undergoes NP-movement to the grammatical subject position. Following Keyser and Roeper (1984), Cheng and Huang (1994) distinguish between surface and deep ergatives. Middles are surface ergatives resulting from the suppression of their agents, whereas deep ergatives are ergative in both the underlying and the surface structure. Thus the deep ergatives in (14a), but not the surface ergatives in (14b), involve agentivity.

- (14) a. men zidong da-kai-le
 door automatic hit-open-ASP
 'The door opened automatically.'
- b. *men zidong tui-kai-le
 door automatic push-open-ASP
 'Intended: The door opens automatically when you push it.'

In the rest of this section, I present arguments in support of the presyntactic approach to Chinese middles. While agreeing with Cheng and Huang's (1994) insight that we may characterize middles as surface ergatives rather than inchoatives or deep ergatives, I will show that the middle verb's grammatical subject is not derived by NP-movement but rather generated in the external argument position, and that despite the presence of a logical subject in Chinese middles, it is not syntactically active.

3.1 The subject NP as presyntactically derived

The evidence that Chinese middles do not have a derived subject via NP-movement comes from middle formation of the intransitive *V-de* in resultatives. If Move alpha is responsible for the promotion of the logical object in a middle, one might expect complements that are not thematically related to the middle verb to be promoted by middle promotion, in the same way as they can be promoted by NP-movement in other constructions. We may indeed find such an environment for resultatives with an intransitive *V-de* predicate. According to Y. Li (1997), *V-de* resultatives fall into two types depending on the transitivity of their matrix predicate. That is, an intransitive V takes a clausal complement in (15a), whereas a transitive V takes two complements: an NP and a clause as in (15b).

- (15) a. Youyou ku-de [Taotao bu neng gan huo]
 Youyou cry-DE Taotao not can do work
 ‘Youyou cried so much that Taotao couldn’t do any work.’
- b. Youyou kua-de Taotao [pro buhaoyisi-le]
 Youyou praise-DE Taotao embarrassed-ASP
 ‘Youyou praised Taotao so much that Taotao was embarrassed.’

One of the arguments provided by Y. Li for this distinction is based on the distribution of *wh*-word fronting in these two types of *V-de* sentences. Certain question words in Chinese may be fronted to the clause-initial position and interpreted as quantifiers. (A detailed analysis of the quantificational aspect of such words is given in Cheng 1991.)

- (16) sheme shi Taotao dou bu neng zuo
 what thing Taotao all not can do
 ‘Taotao cannot do anything.’

But in these two types of resultatives, only those involving an intransitive *V-de* allow such *wh*-words to be fronted before the post-*de* NP.

- (17) a. Youyou ku-de sheme shi Taotao dou bu xiang zuo
 Youyou cry-DE what thing Taotao all not want do
 ‘Youyou cried so much that Taotao didn’t want to do anything.’

- b. *Youyou kua-de sheme shi Taotao dou bu xiang zuo
 Youyou praise-DE what thing Taotao all not want do
 ‘Youyou praised Taotao so much that Taotao didn’t want to do anything.’

This contrast is expected if *Taotao* is the object of the first verb in (15b) but the subject of the second verb in (15a). In brief, when the first verb in a *V-de* sentence is transitive, the NP following it is its object; otherwise the NP is the subject of the second verb. Crucial to our discussion is the latter environment, where there is no lexical selection relation between an intransitive *V-de* and the subject NP of the embedded verb. I will show that although such a subject NP can be introduced by *ba*, a process argued by Goodall (1987, 1989) and by Sybesma (1992) to involve NP movement, it cannot undergo middle formation. One of the arguments in favor of NP-movement in the *ba*-construction given by Goodall (1987) is that for a sentence like (18a) it is only possible to raise the subject out of the embedded clause to become the *ba*-NP as in (18b), and not the object as in (18c), a pattern typical of movement to an A-position.

- (18) a. nage nuhai ku-de Zhangsan nian-bu-xia naben shu
 that girl cry-DE Zhangsan read-not-down that book
 ‘That girl cried so much that Zhangsan couldn’t continue reading that book.’
 b. nage nuhai ba Zhangsan ku-de nian-bu-xia naben shu
 that girl BA Zhangsan cry-DE read-not-down that book
 ‘That girl cried so much that Zhangsan couldn’t continue reading that book.’
 c. * nage nuhai ba naben shu ku-de Zhangsan nian-bu-xia
 that girl BA that book cry-DE Zhangsan read-not-down

Now consider the grammaticality contrast between (19b) with the target NP introduced by *ba* and (19c) with the target NP in the subject position of middles.

- (19) a. Mengjiangnu ku-de [Qing-shi-huang_j de huangguan cong taziji_j de
 Mengjiangnu cry-DE Qing-start-Emperor DE crown from himself DE
 baozuo shang diao-le xialai]
 seat top fall-ASP down
 ‘Mengjiangnu cried so much that the first Emperor of Qing_j’s crown fell down from his_j own seat.’

- b. Mengjiangnu_i ba Qing-shi-huang_j de huangguan ku-de [cong taziji_j de
 Mengjiangnu BA Qing-start-Emperor DE crown cry-DE from himself DE
 baozuo shang diao-le xialai]
 seat top fall-ASP down
 ‘Mengjiangnu_i cried so much that the first Emperor of Qing_j’s crown fell
 down from his_j own seat.’
- c. *Qing-shi-huang_j de huangguan ku-de [cong taziji_j de baozuo shang
 Qing-start-Emperor DE crown cry-DE from himself DE seat top
 diao-le xialai]
 fall-ASP down
 ‘The first Emperor of Qing_j’s crown fell down from his_j own seat as a result
 of someone’s crying.’

If middle formation involves NP-movement just as *ba*-construction does, it is not immediately clear why such movement may take place in the *ba*-construction in (19b) but not in middles (19c).³ Note that an anaphor is crucial in these examples, because we have to be sure that the sentence-initial patient NP is in the subject position and not in a topic construction as in the example (20).

- (20) natiao shoupa pro ku-de shi-tou-le
 that handkerchief cry-DE wet-soak-ASP
 ‘Someone cried so much that the handkerchief was soaked.’

One may wonder whether the well-known affectedness constraint in e.g. Jaeggli (1986) and Roberts (1987) can be invoked to account for the ill-formedness of (19c). This constraint basically states that only predicates with an affected argument, which is generally defined as an argument that undergoes a change of state, may form middles. This constraint has been used in many studies to explain ill-formed middles as in (21), in ECM (22) and idiom chunk contexts (23).

- (21) *a. This poem understands easily.
 *b. The Eiffel Tower sees easily from my window.

- (22) *John believes to be a fool easily.

³ Since the contrast reported in (19) is crucial to support the main claim of this article, I checked with ten native speakers to verify the judgment. Two of them even accepted (19b) more readily than (19a).

(23) *Advantage takes easily of naïve customers.

The notion of an affectedness constraint, however, runs into difficulties. Theoretically, as Ackema and Schoorlemmer (1995) point out, it is not clear why other instances of movement are known not to be sensitive to phenomena like affectedness. Empirically, as Fagan (1992) argues, this constraint does not account for a whole range of phenomena, e.g. the contrast between *buy* and *sell* in (24a) and (24b)⁴ and the well-formedness of (25a/b).

(24) a. *This book buys easily.
b. This book sells easily.

(25) a. This book reads easily.
b. She photographs well.

What is more problematic is that when applied to Chinese it is difficult, if not entirely impossible, to define “affectedness,” since the middle in (26) does not involve an argument whose properties are changed.

(26) Zhangsan_i de che zhengzai ziji_i de dian li xiuli-zhe
Zhangsan DE car presently self DE store inside fix-ASP
‘Zhangsan’s car is being fixed in his own garage.’

The notion of an affectedness constraint is thus not adequate to explain ill-formed middles in Chinese. Such sensitivity to the argumenthood of middle verbs in fact supports a presyntactic approach to middle formation since the process may arguably apply at some presyntactic level, e.g. at the level of the lexicon in Fagan (1992) or of the lexical conceptual structure in Ackema and Schoorlemmer (1994, 1995), where arguments are projected to feed syntactic levels. Given that NP-movement fails to promote the embedded subject in intransitive *V-de* clauses, contrary to expectations for the syntactic approach to middle formation, I conclude that the surface subject of middles in Chinese is not derived by NP-movement but by base-generation.

⁴ The original pair provided by Fagan (1992:65) uses the adverb *well* as in (i). As pointed out by one of the reviewers, the unacceptability of (ia) may be due to pragmatic rather than grammatical/semantic reasons. The adverb has thus been changed to *easily* to show that Fagan’s point still holds.

(i) a. *This book buys well.
b. This book sells well.

3.2 The logical subject theta-role not syntactically realized

Another difference between the syntactic and presyntactic approaches to middle formation concerns whether the understood subject is syntactically present. I will argue that the logical subject theta-role of the middle verb in Chinese is not realized syntactically but at some presyntactic level. The existence of an implicit subject in Chinese middles can be seen from their contrast with ergatives. Following Burzio (1981) and Keyser and Roeper (1984), I assume that ergatives refer to intransitive alternants like (27b), which has a causative counterpart as in (27a). Verbs showing such alternation include *kai* ‘open,’ *ronghua* ‘melt’ and *baozha* ‘explode’⁵ (cf. Cheng 1989, Levin and Rappaport Horvav 1995).

- (27) a. wo ronghua-le naiyou
 I melt-ASP butter
 ‘I melted the butter.’
 b. naiyou ronghua-le
 butter melt-ASP
 ‘The butter melted.’

As argued by Keyser and Roeper (1984), the fact that ergatives can appear with the phrase *all by itself* in (28a) while middles cannot in (28b) suggests that middles have an implicit subject but ergatives do not.

- (28) a. The boat sank all by itself.
 b. *The books sell easily all by themselves.

The same contrast between middles and ergatives also holds in Chinese.

⁵ Some verbs only have the inchoative form but lack transitive alternants, e.g. *gun* ‘roll’ and *po* ‘break’.

- (i) a. *tamen gun-le shitou xialai
 they roll-ASP stone down
 ‘They rolled down the stone.’
 b. shitou gun-le xialai.
 stone roll-ASP down
 ‘The stone rolled down.’
 (ii) a. *tamen po-le beizi
 they break-ASP cup
 ‘They broke the cup.’
 b. beizi po-le
 cup break-ASP
 ‘The cup broke.’

- (29) a. naiyou ziji ronghua-le
 butter self melt-ASP
 ‘The butter melted by itself.’
 b. *shu ziji mai-diao-le
 book self sell-fall-ASP
 ‘The book was sold by itself.’

This suggests that as in English, middles in Chinese also have an implicit subject but ergatives do not. If this is true, then Cheng’s (1989) analysis that we may treat the two constructions on a par cannot be right since different derivations must be involved.⁶

Now the question is, where is the implicit subject in middles located, in the presyntactic structure or in the syntax? I will argue for the former based on evidence from the (non)-licensing of agent-oriented adverbs.⁷ One of the arguments for the syntactically active logical subject in English passives comes from the licensing of agent-oriented adverbs in (30) (e.g. in Baker, Johnson and Roberts 1989).

- (30) The wall was painted on purpose.

When we apply this test to middles and short *bei* passives in Chinese, a contrast obtains as in (31) and (32).

- (31) a. guanjiande zhengju bei guyi hushi⁸
 crucial evidence BEI deliberately ignore
 ‘Crucial evidence was deliberately ignored.’
 b. *guanjiande zhengju guyi hushi
 crucial evidence deliberately ignore
 ‘Crucial evidence was deliberately ignored.’

⁶ More specifically, Cheng proposes that in these intransitive sentences that show transitivity alternation, the logical subject of the verb is deleted/eliminated and as a result NP-movement takes place to raise the patient/theme argument to the grammatical subject position.

⁷ Argumentation along the same line is provided by Cheng and Huang (1994).

⁸ This example is adapted from data obtained from the Internet with the help of the search engine Google.

- (32) a. Zhangsan_i de che zai ziji_i de cheku li bei guyi ti-le
 Zhangsan DE car at self DE garage inside BEI deliberately kick-ASP
 yige dong
 one hole
 ‘Zhangsan’s car was deliberately kicked in his own garage and got a hole in it. (A hole was deliberately kicked in Zhangsan’s car in his own garage.)’
- b. *Zhangsan_i de che zai ziji_i de cheku li bei guyi ti-le
 Zhangsan DE car at self DE garage inside BEI deliberately kick-ASP
 yige dong
 one hole
 ‘Zhangsan’s car was deliberately kicked in his own garage and got one hole in it. (A hole was deliberately kicked in Zhangsan’s car in his own garage.)’

This shows that short *bei* passives (cf. Ting 1995b, 1998, Huang 1999) have a syntactically active logical subject but middles do not. We may follow the proposal made for the presyntactic approach and take the understood subject to be present at some presyntactic level (e.g. the lexicon in Fagan 1992, or the Lexical Conceptual Structure in Ackema and Schoorlemmer 1994, 1995). As for the passive verb’s subject theta-role in short *bei* passives, one possible analysis is to assign it to a null equivalent of the passive morpheme *-en* in English if we treat short *bei* passives on a par with *get*-passives in English, following an approach originally put forth by Cheng, Huang, Li and Tang (henceforth CHLT) (1993), followed by Ting (1998) and Huang (1999).⁹

Before leaving this section, let us consider some apparent counterexamples observed by Tan (1991).

- (33) a. fan guyi shao-hu-le
 rice deliberately cook-burned-ASP
 ‘The meal was burned on purpose.’
- b. xie cunxin chuan-fan-le.
 shoe intentionally wear-opposite-ASP
 ‘The shoes were intentionally worn on the wrong feet.’

⁹ This view of the implicit subject in short *bei* passives is, to my knowledge, different from all previous analyses that pursue a *get*-passive-like analysis of short *bei* passives. For example, CHLT (1993), followed by Ting (1998), claim that “...the head of VP, [selected by *bei*], in virtue of the [passive] feature, does not have an external argument and cannot assign Case to its object.” The exact nature of such a passive feature, however, remains mysterious in this approach. If we take the analysis of null passive affixes suggested in the text, then we get a more complete parallelism between short *bei* passives and English *get* passives.

Based on the acceptability of such examples, Tan argues that such sentences contain an implicit logical subject. But there is good reason to think that these sentences with an agent-oriented adverb involve a topic construction but not a true middle construction. First, there is the interpretation of the understood subject. According to Fagan (1992:208), although the understood subject of a middle does not receive a definite interpretation, it can be given a generic or existential interpretation, like the understood subjects of passive clauses. If Fagan is correct, then middles cannot have a definite understood subject. Examples in (33), however, obviously involve a definite understood subject, referring to an entity in the surrounding discourse. This makes us suspect that examples in (33) are not true middle constructions but topic constructions with a null subject. Their short *bei* passive counterparts as in (34), in contrast, involve an existential understood subject, as Fagan's theory may predict.

- (34) a. fan bei guyi shao-hu-le
 rice BEI deliberately cook-burned-ASP
 'The meal was burned on purpose.'
- b. xie bei cunxin chuan-fan-le.
 shoe BEI intentionally wear-opposite-ASP
 'The shoes were intentionally worn on the wrong feet.'

Further support for a topic construction for the examples in (33) comes from the fact that these examples are most acceptable with an intonation pause between the sentence-initial NP and the adverb, suggesting that the NP is in topic rather than subject position. I thus dismiss the apparent counterexamples in (33).

Summarizing this section, I conclude that the middles have an implicit logical subject only at some presyntactic level while short *bei* passives have a syntactically active logical subject and ergatives do not have an understood subject at any level.

4. Semantic properties of Chinese middles

I will now discuss the meaning of Chinese middles (in 4.1) as well as the predicates eligible for middle formation (in 4.2).

4.1 The semantics of Chinese middles

I will argue that just as one type of French middles are very close to passives, so are Chinese middles close to passives, more specifically short *bei* passives, in the

sense that both constructions can be interpreted as being either stative or eventive. Such closeness in meaning to passives explains why Chinese middles lack some of the properties characteristic of middles in languages like English. Some differences between these two constructions will also be discussed in this subsection.

Middle constructions cross-linguistically display special semantic properties. A useful discussion of English, German and French middles is provided by Fagan (1992). Except for the fact that German but not English middles require a reflexive form and allow impersonal passives, German and English middle constructions share many semantic properties. For example, both English and German only allow non-eventive middles, which can be characterized by the notion of genericity. In the core cases, middles are used to express the modal meaning of ability or possibility and describe the properties of the surface subject. In the non-core cases, they are used to generalize from events. Although French also has such non-eventive middles, it crucially allows eventive middles which describe actual events taking place in the past as in (35a), either at the moment of speaking (35b) or in the future (35c).

- (35) a. La question s'est discutée hier dans la salle du conseil.
'The issue was discussed yesterday at the council hall.'
- b. La question se traite actuellement à l'Assemblée.
'The issue is being discussed now in the Assembly.'
- c. Les vivres se distribueront tout à l'heure au premier étage.
'The food will be distributed in a while on the first floor.'

Eventive middles are in fact very close to passives in meaning. According to Fagan, citing Stéfani (1962), this closeness may arise for historical reasons. In brief, the above discussion of French middles is relevant to our study of Chinese middles in two respects: first, eventive middles should not be surprising; second, middles can be interpreted as being very close to passives. I will argue that Chinese middles can be interpreted as verbal passives or stative/adjectival passives in Chinese.

Levin and Rappaport (1986) note that verbal passives are associated with an eventive reading, while adjectival passives are associated with a stative reading.

- (36) a. The girl mended the teddy.
b. The teddy was mended by the girl. (verbal)
c. The teddy is being mended. (verbal)
d. The teddy was mended. (adjectival, stative)

Verbal passives in (36b, c) describe a teddy-mending event. The adjectival

interpretation in (36d), on the other hand, would be that the teddy was in a state of having been mended, i.e. an already mended teddy.

Like *bei*-passives which may be either eventive as in (37) or stative as in (38), Chinese middles may also denote either an event in time as in (39) or a state as in (40).

- (37) a. xiawu sandianzhong zheng shu zhongyu bei mai-diao-le
 afternoon three:o'clock sharp book finally BEI sell-fall-ASP
 'All the books were sold out by three in the afternoon.'
- b. shu jiang zai mingtian xiawu sandianzhong zheng bei mai-diao
 book will at tomorrow afternoon three:o'clock sharp BEI sell-fall
 'The books will be sold out by three p.m. tomorrow.'
- c. Zhangsan_i de che zhengzai ziji_i de dian li bei xiuli
 Zhangsan DE car presently self DE store inside BEI fix
 'Zhangsan's car is being fixed in his own garage.'
- (38) a. chengshi yijing bei zha-hui-le
 city already BEI explode-destroy-ASP
 'The city was destroyed by bombs.'
- b. chezi yijing bei xiu-hao-le
 car already BEI fix-good-ASP
 'The car is (was) already fixed.'
- (39) a. xiawu sandianzhong zheng shu zhongyu mai-diao-le
 afternoon three:o'clock sharp book finally sell-fall-ASP
 'The books were all sold out by three o'clock in the afternoon.'
- b. shu jiang zai mingtian xiawu sandianzhong zheng mai-diao
 book will at tomorrow afternoon three:o'clock sharp sell-fall
 'By three o'clock in the afternoon tomorrow, the books will be sold out.'
- c. Zhangsan_i de che zhengzai ziji_i de dian li xiuli
 Zhangsan DE car presently self DE store inside fix
 'Zhangsan's car is being fixed in his own garage.'
- (40) a. chengshi yijing zha-hui-le
 city already explode-destroy-ASP
 'The city was destroyed by bombs.'

- b. chezi yijing xiu-hao-le
 car already fix-good-ASP
 ‘The car is (was) already fixed.’

It is now clear that the stative reading of Chinese middles is not the same as the typical stative reading of English and German middles, which is associated with modality. It has been claimed by Gong (1980, cf. Wang 1982) that sentences like (2) only describe a state resulting from an action. I think that this reading arises because Chinese middles can have a stative-passive reading. But the eventive reading of Chinese middles should not be excluded, as shown by the examples in (39) above.

It needs to be pointed out, however, that middles and short *bei* passives cannot be interpreted in exactly the same way. S. Li (1994) points out that middles are more often used than *bei* passives to express general truths (41a) or the “state” of the subject NP (41b).

- (41) a. fan chi-duo-le duzi hui zhang fan chi-shao-le duzi you hui e
 rice eat-many-ASP belly will swell rice eat-little-ASP belly again will hungry
 ‘When one eats too much, his belly becomes swollen; when one eats too little,
 his belly starves.’
- b. zhe nianqing-ren buguo ershi sui hei-dan-ku juan-guo-le
 this young-person only twenty year black-single-pants roll-over-ASP
 xigai guang-zhe jiao
 knees bare-ASP foot
 ‘This young man, just twenty years old, wore black pants rolled up over the
 knees and was barefoot.’

The *bei* passives, on the other hand, tend to carry a strong sense of adversity and disposal, as many studies have observed (e.g. Li and Thompson 1981).

4.2 Constraints on middle formation in Chinese

In this section, I briefly discuss the types of predicate eligible for middle formation in Mandarin Chinese. I will argue that given Vendler’s (1967) verb typologies based on the aspectual properties of verbs, stative verbs in general do not undergo middle formation in Mandarin.

In discussing the same construction that we have been looking at, Cheng (1989) (also see Cheng and Huang 1994) argues that it is licensed by accomplishment (42a) and achievement verbs (42b), which have “affected” objects, but not activity (42c)

and also stative verbs (42d).

- (42) a. natiao mianbao ya-bian-le
 that bread press-flat-ASP
 ‘That loaf of bread was pressed flat.’
 b. najian shi jiejie-le
 that thing solve-ASP
 ‘That matter (problem) was solved.’
 c. *natiao mianbao zai ya
 that bread at press
 ‘That loaf of bread was being pressed.’
 d. *naben shu hen xihuan
 that book very like
 ‘That book is liked.’

The fact that stative verbs do not undergo middle formation is supported by the ill-formed examples in (43c) and (44b).

- (43) a. Zhangsan_i zai ziji_i de jiali yongyou henduo fangjian
 Zhangsan at self DE home own many room
 ‘Zhangsan owns many rooms in his home.’
 b. nayang de fangjian Zhangsan_i zai ziji_i de jiali yongyou henduo
 that:sort DE room Zhangsan at self DE home own many
 ‘That sort of room, Zhangsan owns many of them in his own home.
 (Zhangsan has many rooms like that in his own home.)’
 c. *Zhangsan_i de fangjian zai ziji_i de jiali yongyou henduo
 Zhangsan DE room at self DE home own many
 ‘Many of Zhangsan’s rooms were owned in his home.’
- (44) a. Zhangsan xiangxin yige zhongyaode lilun
 Zhangsan believe one important theory
 ‘Zhangsan believes (in) one important theory.’
 b. *nage zhongyaode lilun xiangxin
 that important theory believe
 ‘That important theory was believed (in).’

On the other hand, there is empirical evidence that activity verbs undergo middle formation, as illustrated in (39c). We seem to have conflicting evidence here. To

solve this problem, I would like to call attention to the fact that as has long been noticed (see Ackema and Schoorlemmer 1994 and references cited there), middle constructions cross-linguistically need some form of modification (manner adverbs, for example). If we add some modification, then the result will be much improved as in (45).

- (45) yitiao changchangde mianbao zhengzai taizi-shang ya-zhe
 one long bread presently counter-top press-ASP
 ‘One long loaf of bread was being pressed on the counter.’

I will thus take the position that among the four aspectual classes of verbs, stative verbs in general are not eligible for middle formation.¹⁰

5. Middle formation in Chinese

In the presyntactic approach to middle formation, there have been many attempts to map arguments relating a direct theta role to the underlying grammatical subject position, e.g. Fagan (1992) and Ackema and Schoorlemmer (1994, 1995). Their analyses differ with regard to the presyntactic level where middle formation takes place and the specific rules that are at work.

Let us now briefly consider their mechanisms. Fagan makes use of lexical rules operative in the lexicon and proposes the following. First, a lexical process assigns a generic interpretation to a theta-role that is subsequently left unrealized (cf. Rizzi 1986). To explain why the implicit arguments in French middles may be existential and not limited to being generic, she allows for the assignment of indefinite features to the external theta-role of a lexical item. Furthermore, a lexical process externalizes the direct theta-role of the middle verb when certain conditions are met.

¹⁰ This restriction may be due to the close meaning of Chinese middles to *bei* passives as discussed in 4.1. Stative verbs also do not undergo passivization in the *bei* construction as shown in (i). We are grateful to one of the referees for bringing up this issue.

- (i) a. *nayang de fangjian bei yongyou-le
 that: sort DE room BEI own-ASP
 ‘That sort of room were owned.’
 b. *nage lilun bei xiangxin-le
 that theory BEI believe-ASP
 ‘That theory was believed.’

Note that this view is different from Huang (2005), where middles are subject to lexical constraint whereas the *bei*-construction is not. Thus in contrast to the ill-formed middles, statives in the *bei*-construction as in (i) are fairly acceptable.

- (i) ? bei xihuan
 BEI like

Another point to note is that perfectivity of the clause may help a stative predicate eligible for middle formation in Chinese. See note 12 for a brief discussion.

The rule of middle formation, in addition to bringing about changes in the argument structure and subcategorization requirements of a verb, also brings about a change in the semantics of the verb. This is also why English and German middles and many French middles exhibit modality. Ackema and Schoorlemmer (1994, 1995), based on a model of grammar coming mainly from Jackendoff (1990), derive middles not from the lexicon but at a presyntactic level of representation called Lexical Conceptual Structure (LCS), from which the semantic arguments of a predicate are projected to syntax. Crucially, such projection is optional in principle. Following Fagan, they argue that the logical subject argument of a middle is semantically present (at LCS) but is not syntactically projected; this is allowed because it is a semantically arbitrary argument. Making use of the two distinct tiers at LCS, they show that the logical subject must be an Actor in Jackendoff's (1990) sense in order for this to be possible. Their rules mean that when a verb's usual subject argument is not projected to syntax, as in the middle, the hierarchically next highest argument in its LCS will be projected as an external argument.¹¹ They claim that their proposal can explain impersonal and adjunct middles in Dutch in addition to personal middles. I believe that either of the two frameworks can be easily applied to account for Chinese middle formation.

For a simple middle in Chinese (46), either of the above mechanisms may work equally well. If we follow Fagan's framework, simple middles in Chinese can be derived by the following lexical rules.

(46) Middle Formation in Chinese:

Assign arb or indef to the external theta-role

Externalize (direct theta-role)

Semantics: passives

Condition: the predicate is high enough on the transitivity scale¹².

¹¹ The partial hierarchy adopted by Ackema and Schoorlemmer (1994:67), based on Jackendoff (1990: 258) is given in (i).

(i) Actor-Patient-Agent-Theme-Goal

¹² As argued by Fagan (1992), middle formation in French is subject to factors involving the notion of transitivity as in Hopper and Thompson (1980) more than factors such as aspectual properties of the verb. According to Fagan (1992:95), the relevant components for middle formation in French include participants, agency, punctuality and volitionality. Although verbs like *détester* 'detest' and *mépriser* 'despise' are stative and thus non-agentive, being volitional makes them high enough in transitivity to be eligible for middle formation. I would like to suggest that middle formation in Chinese involves the notion of transitivity as well, though possibly not the same components as in French. To illustrate, consider the well-formedness contrast between (42d), repeated here as (ia), and (ib). This is because the resultative part *de yaoming* of (ib) adds to the perfectivity component of transitivity (see Thompson 1973 and Hopper and Thompson 1980 for how perfectivity contributes to transitivity in the *ba* construction in Chinese), thus making the predicate eligible for middle formation. Needless to say, more research is needed to define the components of transitivity that play a role in middle formation in Chinese.

Turning to more complex cases like (47), the two frameworks need to make different assumptions.

- (47) a. *juzi (yijing) bo-le pi*
orange already peel-ASP skin
'The oranges have already been peeled.'
- b. *zhimen (yijing) po-le yige da dong*
paper:door already break-ASP one big hole
'A big hole has already been broken in the paper door.'
- c. *bilu (yijing) sheng-le huo*
fire:place already produce-ASP fire
'Fire has already been made in the fire place.'

As for the retained object construction in (47), under either approach it must be argued that the verb and its object form one complex predicate lexical unit (see e.g. Thompson 1973 and Huang 1992), with one argument structure at the level at which MF applies. For Fagan, this level is lexicon and, for Ackema and Schoorlemmer (1994, 1995), the LCS.¹³

6. Conclusion

In this paper, I have argued that the so-called notional passives in Mandarin Chinese can be treated on a par with middle constructions in many other languages. Their generation in the underlying grammatical subject position and lack of a syntactically active logical subject are best explained by a presyntactic approach to middle formation. Semantically, Chinese middles may be interpreted like stative or verbal passives. The predicates that undergo middle formation are constrained by

-
- (i) a. **naben shu hen xihuan*
that book very like
'That book is liked.'
- b. *naben shu xihuan-de yaoming*
that book like-DE dying
'That book is liked to such an extreme extent.'

¹³ One of the referees wonders why we need middles if they are largely indistinguishable from ergatives in Chinese and how native speakers could master middles without any grammatical/semantic cues. First of all, it is incorrect to consider middles largely indistinguishable from ergatives. As discussed in 3.2, middles have a logical subject theta-role realized though not syntactically, but ergatives do not have such a theta-role to begin with. Regarding why we need middles, the answer hinges on their function of defocusing an agent subject (cf. Fagan 1992: 78, 207). Although passives making use of *bei* may achieve the same purpose, the strong sense of adversity associated with the *bei* construction may be inappropriate in many contexts, thus the use of the middle construction is favored instead. Lastly, Fagan shows that in many languages, including English, middle formation does not require adverbial modification. In the presyntactic approach pursued here, this fact can be achieved through the linking rules, e.g. in (46).

aspectual factors, though other stricter constraints may also be involved: I speculate that these have to do with the complex interplay between syntax, semantics, and the lexicon in middle constructions. (See e.g. Fagan 1992 and references cited there for some discussion).

If the proposed analysis of notional passives in Mandarin Chinese is indeed on the right track, then these notional passives are, as compared with English or French middles, more properly called “middles” insofar as the middle construction is intermediate between active and passive constructions. As Authier and Reed (1996) point out, the primary factor that distinguishes middles from passives is the absence of passive morphology in the former. English middles are known to exhibit quite different syntactic and semantic properties from those of passives. On the other hand, although middles in French may, like passives, be eventive, they require the presence of a reflexive form which is lacking in passives. Thus, Chinese middles indeed manifest more of the intermediate properties “located” between active and passive constructions.

The findings of this paper also support the view of Ackema and Schoorlemmer (1995) and Authier and Reed (1996) that middle formation is not necessarily homogeneous across languages. Some languages like Dutch (See Ackema and Schoorlemmer’s works) may involve presyntactic derivation while others like English (Stroik’s works), Italian (Cinque 1988) or Canadian French (Authier and Reed 1996) may involve NP-movement. Chinese has been shown in this paper to be another language that derives middles at the presyntactic level. We have seen that while in many languages, including English, middles are generic and describe properties of the grammatical subject, Chinese middles, like French middles, can be eventive. Therefore, we agree with Authier and Reed’s (1996) conclusion that there is no uniform theoretical notion of “middle” beyond conventional terminology. That is, what matters is “. . . the specific syntactic mechanisms at work . . . and not so much . . . [that] all constructions thus designated must in some way be related (e.g. via some parameter[s])” (Authier and Reed 1996:520).

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現代漢語中動句與前句法分析

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本文主張現代漢語中動句於前句法部門形成。我們首先論證此句式之句首名詞的確為句法上的主語，其次論證此主語非由 NP 移動所衍生，而為基底結構生成，且語意上的主語僅存在於前句法結構。本研究結果支持 Authier 跟 Reed (1996) 的結論：中動句在不同語言可能有不同的衍生機制。

關鍵詞：中動句、前句法部門、論元結構、受事主語句