

Representing Topic-Comment Structures in Chinese

Haihua PAN

Dept. of Chinese, Translation & Linguistics
City University of Hong Kong
Kowloon, Hong Kong
cthpan@cityu.edu.hk

Jianhua HU

Dept. of Chinese, Translation & Linguistics
City University of Hong Kong
Kowloon, Hong Kong
ctjhu@cityu.edu.hk

Abstract

Shi (2000) claims that topics must be related to a syntactic position in the comment, thus denying the existence of dangling topics in Chinese. Under Shi's analysis, the dangling topic sentences in Chinese are not topic-comment but subject-predicate sentences. However, Shi's arguments are not without problems. In this paper we argue that topics in Chinese can be licensed not only by a syntactic gap but also by a semantic gap/variable without syntactic realization. Under our analysis, all the dangling topics discussed in Shi (2000) are, in fact, not subjects but topics licensed by a semantic gap/variable that can turn the relevant comment into an open predicate, thus licensing dangling topics and deriving well-formed topic-comment constructions. Our analysis fares better than Shi's in not only unifying the licensing mechanism of a topic to an open predicate without considering how the open predicate is derived, but also unifying the treatment of normal and dangling topics in Chinese.

1 Introduction

Shi (2000) claims that topic-comment constructions are derived from basic sentence structures via syntactic operations, and a topic must be related to a syntactic position inside the comment which can be filled either by an empty category or a resumptive pronoun, thus denying the existence of dangling topics in Chinese. In this paper we will argue that topics in Chinese can be licensed not only by a syntactic gap or resumptive pronoun, but also by a semantic variable which does not have a corresponding syntactic position. We first show that a topic in Chinese need not be related to a syntactic position in the comment, and then show that, besides being syntactically licensed, a topic in Chinese can also be semantically licensed. In this case, it is licensed by a semantic variable which does not have any syntactic realization, and this semantic variable can turn the relevant comment clause into a semantic open predicate, thus deriving a well-formed topic-comment construction. Under our analysis, the dangling topics discussed in Shi (2000) are just topics licensed by a semantic open predicate, though not by a syntactic one.

2 Dangling Topics

In English topics are derived via syntactic operation, and are thus licensed syntactically by a syntactic gap or a resumptive pronoun. Shi argues that the Chinese topics should be derived the same way, thus denying the existence of dangling topics, which are not syntactically related to any syntactic gap inside the comment. Shi discusses six types of dangling topics in Chinese, and he claims that, upon closer investigation, they are not dangling topics but subjects, since a structural relationship does exist between

the so-called dangling topics and their comment. The first type of dangling topics discussed in Shi (2000) is given below:

- (1) a. Tamen, wo kan ni, ni kan wo.
 they I look you you look me
 They look at each other.
 b. Tamen, da-yu chi xiao-yu
 they big-fish eat small-fish
 They act according to the law of the jungle.

In the above sentences, the topics are not related to any syntactic position inside their comment clauses. Shi argues that, in each of the cases, the comment clause does not have the interpretation or functions of a sentence since the pronouns or NPs contained in the comment clause do not refer to any antecedent NP. According to Shi, neither the lexical items used in these comment clauses nor their order can be altered, and hence, they should be treated as idiom chunks that function as predicates, with *tamen* as their subject, since they cannot be further analyzed. Shi uses the adverb *zhuanmen* 'specially' to test whether the preverbal NP is a subject. According to him, the adverb *zhuanmen* can only occur between the subject and the predicate, but not before the subject. Hence, in the following sentence, *da-yu* 'big fish' should not be considered as the subject because it can be preceded by *zhuanmen*.

- (2) Tamen, zhuanmen da-yu chi xiao-yu
 they specially big-fish eat small-fish
 They are doing nothing but acting according to the law of the jungle.

Although Shi's idiom chunk analysis is insightful, there are problems with his account. For instance, it is impossible to treat the comment clauses in (3) as idiom chunks because there are four different clauses with different clausal structures.

- (3) Tamen, ni zhize wo bu dui, wo baoiyuan ni bu hao, ni bu fu wo, wo ye bu fu ni.
 they you blame I not right I complain you not good you not convince I I also not convince you
 They blame each other and make complaints about each other, and none of them would obey the other.

Although the pronouns in the above sentence do not have overt antecedents within the sentence, they do have implicit antecedents which are covered by the referents of *tamen* 'they'. The pronouns contained in the comment clauses are members of the referents delimited by the topic *tamen*. In the following sentence, the topic is also not related to any syntactic position in the comment, and it is impossible to treat the sentence-initial NP *tamen* as the subject of the comment clauses by analyzing the comment clauses as syntactic predicates, because they have their own subjects which are referential NPs.

- (4) Tamen zuotian xiawu Xiao Zhang mei lai, Xiao Li ye mei lai.
 they yesterday afternoon not come also not come
 Yesterday afternoon, Xiao Zhang did not come, and Xiao Li did not come, either.

Note that the subjecthood of the preverbal NPs in the above comment clauses can be further tested by the adverb *zhuanmen*, as suggested in Shi, which cannot appear before these subjects, as shown in (5).

- (5) *Tamen zuotian xiawu, zhuanmen Xiao Zhang lai le, Xiao Li ye lai le.
 they yesterday afternoon specially come ASP also come ASP
 Yesterday afternoon, they did nothing but coming here, i.e., Xiao Zhang came, and Xiao Li also came..

According to Shi's analysis, the comment clauses discussed above are just normal predicates, though they contain their own subjects, since they are idiom chunks. Shi does not define what an idiom chunk is in his paper, but it seems that the adverb test can function as a criterion. However, if the adverb test is really adopted as a criterion, the comment clauses in (4) will not be regarded as predicates since they cannot be preceded by the adverb *zhuanmen*. Hence, sentences like (4) will present problems for Shi's analysis. In fact, there are problems with the adverb test itself. If any comment clause can pass this test, it will be regarded as an idiom chunk. Under this analysis, the notion of idiom chunks will be undesirably expanded so as to make the concept meaningless. (3) can pass this test. Then the comment clauses in (3) would be regarded as idiom chunks, which is not possible, as pointed earlier. Even if the comment clauses can be analyzed as idiom chunks, the difference between the English-style topics and Chinese-style topics is still left unaccounted for. Why can the comment clauses containing a theta-role-bearing subject be optionally turned into an idiom chunk, and thus, a predicate only in Chinese, but not in English? Shi (2000: 383) argues that the topic has no thematic role but always depends on an element inside the comment for its thematic role. If his argument is true, what thematic role does the topic in (1), (3), and (4) get? Even if the comment clauses discussed above are analyzed as predicates, they are saturated predicates syntactically since they have neither open slot nor extra theta-role to apply to the topic NP. In this case, it is meaningless to say that they are syntactic predicates instead of clauses since they are no longer normal syntactic predicates that can be predicated of their subject with an open slot or undischarged theta-role. Note that the adverb test is also unreliable. In the following sentence, the subjects of the comment clauses are referential NPs, but they may also be preceded by the adverb *zhuanmen*:

- (6) Tamen lia, zhuanmen Xiao Wang lai le, Xiao Li zai lai.
 they two specially come ASP then come
 Xiao Wang will come specially after Xiao Li comes.

The second type of dangling topics discussed in Shi (2000) is given below:

- (7) Tamen, shei dou bu lai.
 they who all not come
 None of them are coming.

Shi argues that the Wh-word in the above sentence does not have the status of subject because they can be preceded by certain modal verbs such as *keyi* 'may', *hui* 'will', and *neng* 'can', as shown below in (8), though normal subjects cannot, as shown in (9). Shi further argues that the Wh-word in (7) can only be interpreted as 'anyone' but not 'which person', and such a Wh-word is optional in the sense that it can be deleted without reducing its acceptability or affecting its basic meaning. Hence, the Wh-word in (7) behaves more like a quantifier than an ordinary NP since it cannot be replaced by an NP. Based upon this observation, Shi goes a step further by arguing that the Wh-word in (7) is a quantificational adverbial. In fact, (7) has the same structure as (1). If the subject in (1) need not be analyzed as an adverbial, the subject in (7) also need not be treated as an adverbial. It seems that Shi is reluctant to treat the comment clause in (7) as an idiom chunk, and that is why he presents an adverbial analysis of the preverbal Wh-word. However, obviously, the adverbial analysis is not without problem since the Wh-word *shei* in (10a) can only be interpreted as 'which person' but not 'anyone' and thus cannot be analyzed as a quantificational adverbial, as suggested in Shi.

- (8) Tamen keyi shei dou bu lai.
 they may who all not come
 None of them may come.
 (9) a. Tamen keyi bu lai.
 they may not come
 They may not come.
 b. *Keyi tamen bu lai.

- may they not come
- (10) a. Tamen, shei hui lai?
 They which person will come
 Who of them will come?
- b. [Tamen, shei lai] dou keyi.
 They who come all may
 Any of them may come.

Another problem for Shi is that he seems to suggest that there is a clash of being a quantifier and being a subject, namely that quantifiers cannot function as subject; otherwise, even if the wh-word in (7) is a quantifier, it can still function as a subject, defeating Shi's original claim that the wh-word in question is not a subject but a quantifier adverbial.

It should be noted that the modal verb test may also fail in some cases. In the following sentence, the modal verb *keyi* may occur before the subject:

- (11) Zhe wan mifan, keyi liangge ren chi.
 this bowl rice may two persons eat
 This bowl of rice may serve two persons.

In the above sentence, the modal verb precedes the subject, and the object is preposed before the modal verb.

Below is the third type of dangling topics discussed by Shi.

- (12) Na-chang huo, xinghui xiaofangdui lai de kuai.
 that-CL fire fortunately fire-brigade come DE fast
- i. As for that fire, fortunately the fire brigade came quickly, (otherwise it)...
- ii. At the time of that fire, fortunately the fire brigade came quickly, (otherwise)...

According to Shi, (12) is an incomplete sentence with the main clause omitted, and the clause introduced by *xingkui* is an adverbial clause of cause. Shi claims that (12) has two readings. In the first reading, the sentence-initial NP is related to the subject position of a main clause, which, though not overtly realized, can be recovered. In the second reading, the sentence-initial NP is used as a temporal adverbial of a main clause, which is omitted but can be recovered. This is an interesting account since, under this account, the sentence-initial NP is related to an empty position which is itself located within an empty position, i.e., an empty main clause. If this account is true, then it means that the sentence-initial NP can be licensed by a null element within a null clause. This is an undesirable result since there are other cases in which the sentence-initial NP cannot be licensed this way, as shown by the following sentence:

- (13) *Zhe-jian da shi xingkui wo zhidao Zhang Xiaozhang lai le.
 this-CL big issue fortunately I know Principal come ASP
 As for this big issue, fortunately I know that Principal Zhang has come, otherwise

If we adopt Shi's analysis, the omitted main clause in (13) should be able to license the sentence-initial NP. However, (13) is unacceptable. Note that the omitted part can be recovered, as shown below:

- (14) Zhe-jian da shi xingkui wo zhidao Zhang Xiaozhang lai le,
 this-CL big issue fortunately I know Principal come ASP
 yaoburan wo hai bu zhidao ruhe chuli e.
 Otherwise I still not know how deal-with
 As for this big issue, fortunately I know that Principal Zhang has come, otherwise I do not know how to deal with it.

The above sentence shows that there is a gap within the recovered main clause which is related to the sentence-initial NP. However, this does not guarantee the acceptability of (13).

The following is the fourth type of dangling topics discussed by Shi:

- (15) Zhe-jian shiqing ni bu neng guang mafan yi-ge ren
this-CL matter you not can only bother one-CL person
As for this matter, you cannot just bother one person.

Shi argues that a preposition like *wei* 'for' is dropped in the above sentence since some prepositions can be omitted in Chinese. Hence, the sentence-initial NP in (15) can be treated as a sentential adverbial. Shi further claims that the sentence-initial NP is also related to a position in the comment clause since it can appear after the subject, as shown below:

- (16) Ni zhe-jian shiqing bu neng guang mafan yi-ge ren
you this-CL matter not can only bother one-CL person
For this matter, you cannot just bother one person.

Shi's preposition-dropping assumption is not without problem since it cannot account for the unacceptability of (17) in which a preposition is dropped. If Shi's analysis is right, we would like to ask why the sentence-initial NP in (17) cannot be treated in the same way. Note that (17) will be acceptable if a preposition like *wei* is added before the NP in question.

- (17) Zuotian *(wei) zhe-jian shiqing Zhangsan dajia le.
yesterday (for) this-CL matter fight ASP
Zhangsan fought a fight for this matter yesterday.

The fifth type of dangling topics discussed by Shi is illustrated by (18):

- (18) Na zhong douzi, yi jin sanshi kuai qian.
that CL beans one CL thirty CL money
One catty of that kind of beans is thirty dollars.

According to Shi, the two sentence-initial NPs *Na zhong douzi* and *yi jin* are subjects but not topics. He claims that the sentence-initial NP is subject instead of topic because it does not have to be definite but a topic must be. However, he does not give any example to show under what condition the sentence-initial NP in (18) can be indefinite. According to our intuition, the sentence will be unacceptable if the sentence-initial NP is indefinite, as shown below:

- (19) *Yi zhong douzi, yi jin sanshi kuai qian.
one CL beans one CL thirty CL money
*One catty of a kind of beans is thirty dollars.

The unacceptability of the above sentence just supports the view that the sentence-initial NP is topic instead of subject. Shi argues that the emphatic marker *shi* cannot occur before the topic though it can precede the subject, as shown in (20):

- (20) a. Shi na zhong douzi yi jin sanshi kuai qian.
be that CL beans one CL thirty CL money
It is that kind of beans that is worth thirty dollars a catty.
b. *Shi zhe zhong douzi wo mai le.
be this CL beans I buy ASP

In fact, this emphatic marker test is not reliable, either. In the following sentence, *shi* can occur before the topic:

- (21) Shi zhe zhong douzi wo mei mai.
be this CL beans I not buy
It is that kind of beans that I did not buy.

Below is the sixth and also the last type of dangling topics discussed by Shi.

- (22) Wu-jia Niuyue zui gui.
thing-price New York most expensive
The price of things is the highest in New York.

Shi argues against the analysis which treats *Niuyue* as the subject. Under his analysis, *wujia* is the subject and *Niuyue* is a locative adverbial. He claims that adverbs like *yiding* 'certainly' can occur only between the subject and the predicate but not before the subject, as shown below:

- (23) Wu-jia yiding Niuyue zui gui.
thing-price certainly New York most expensive
The price of things is certainly the highest in New York.

However, we find that his adverb test also fails in this case, as shown below:

- (24) Niuyue yiding wu-jia zui gui.
New York certainly thing-price most expensive
The price of things is certainly the highest in New York.

In the above sentence, *yiding* occurs before *wujia*. If we adopt Shi's analysis, it will be analyzed as something other than the subject, a result unexpected by Shi.

3 A semantic Account

According to Shi (2000), a topic in Chinese is always related to a syntactic position. This claim forces him to view syntactic predicates as a heterogeneous class, which includes fully syntactically saturated predicates or clause with different structures. In fact, this claim already implicitly admits the existence of topics that need not be licensed by a syntactic gap. The picture is mixed in Shi's analysis. He seems to suggest that a syntactically saturated predicate can still function as a predicate. This is unproblematic. It should be made clear that a syntactically saturated predicate like the idiom chunks discussed by Shi is no longer a syntactically open predicate and thus has no open slot for the sentence-initial NP to fill in. Hence, this analysis of predicates undermines, rather than strengthens, Shi's argument that a topic is always related to a syntactic position in the comment. Shi might think that if the syntactically saturated predicate can still function as a predicate, it will generate an extra open syntactic position. But this option is not available. If it really can, what position is it and what theta-role does it bear? If he simply says that this syntactically saturated predicate can still apply to the topic in predication, what is the difference between his account and the traditional one which claims that topic and comment is in a predication relation? What is more, it undermines his claim that a topic must be related to a structural position inside the comment. If Shi admits that the topic-comment construction can be formed in predication the way we just mentioned, then it just boils down to the question whether the sentence-initial NP is termed as a topic or a subject. We can either choose to say that a topic is followed by a comment and there is a subject which is followed by a predicate in the comment, or choose to say that a subject is followed by a predicate and there is a big subject which is followed by a small subject in

the predicate. Either way we say it, we have to acknowledge the difference between English and Chinese in forming topic-comment constructions.

We think that topics in Chinese can be either syntactically licensed or semantically licensed. When it is syntactically licensed, there is a syntactic position (which can either be a gap or a resumptive pronoun) in the comment clause that is related to it. When it is semantically licensed, there is a semantic variable (which does not have syntactic realization) in the comment clause that is related to it. Under our analysis, (1) is well-formed because the topic is semantically licensed. In this case, the topic provides a set that is induced by a semantic variable, and subject pronouns contained in the comment clauses are members of this set. It is the set-member relation that ties the topic and comment together, and thus licenses the topic. Note that (1) is acceptable only under the condition that *wo* and *ni* do not refer to the speaker and hearer. That is, they must refer to the members of the set of persons that can be replaced by the topic. In a way, they can be treated as variables, with their values constrained by the set. Here, we must point out that it is absolutely necessary to posit an abstract set for the topic, and it is not the case that the variables contained in the comment clauses directly apply to the topic. This can be illustrated by (7), in which *shei* can be replaced by a singular NP *na yige ren* 'which person', and if we apply this NP directly to the topic, wrong results will be produced since the topic NP and the subject of the comment clause do not match in number features. Semantically, we can represent (7) correctly as follows:

(25) $\lambda Z \forall x [x \in Z \rightarrow \neg \text{lai}'(x)]$ (tamen')

Notice that the variable corresponding to *shei* is *x* and the variable applying to the topic is *Z*.; they are different from each other.

Now, we can formally represent our semantic licensing condition for topic-comment structures as follows:

(26) a. $\lambda P \lambda Z \subseteq \text{things } \lambda x \lambda y [x \in Z \ \& \ y \in Z \ \& \ P(x, y)]$ (for a two-place predicate)

b. $\lambda P \lambda Z \subseteq \text{things } \lambda x [x \in Z \ \& \ P(x)]$ (for a one-place predicate)

c. $\lambda P \lambda Z \subseteq \text{things } \lambda x_1 \dots \lambda x_n [x_1 \in Z \dots \ \& \ x_n \in Z \ \& \ P(x_1, \dots x_n)]$ (for a n-place predicate)

(26a) captures the situation found in (1-3), and (25b) accounts for (4), (6) and (18). After applying (26a) to the first clause in (1a), we have $C = \lambda Z [\text{ni}' \in Z \ \& \ \text{wo}' \in Z \ \& \ \text{kan}'(\text{ni}', \text{wo}')]$. Since *C* is an open predicate, it can take the topic *tamen* as its argument, and thus the topic in question is licensed by the open semantic predicate *C*. Notice that there is a process of conjunction between the two clauses in (1). Actually, the topic is combined with the conjoined clauses which have the semantic representation $\lambda Z [\text{ni}' \in Z \ \& \ \text{wo}' \in Z \ \& \ \text{kan}'(\text{ni}', \text{wo}') \ \& \ \text{kan}'(\text{wo}', \text{ni}')]$.

Although the above semantic representation can account for the first, second, and fifth types of dangling topics, it seems that it cannot provide an explanation for the third, fourth, or sixth types of dangling topics. Let us turn to the sixth type first. As for this type, we think that it is not *Niuyue* 'New York', but *Niuyue de wujia* 'the price of things in New York', that functions as the subject of the comment clause, since the former does not match the semantic requirement of the predicate. Under our analysis, the subject contains an empty head noun *wujia* 'the price of things'. Note that there is a set-member relation between the topic *wujia* 'the price of things' and the subject *Niuyue (de wujia)*. The topic-comment structure of this type of dangling topics can be derived from the following formula:

(27) $\lambda P \lambda Q \lambda Z \subseteq \text{things } \lambda x [x \in Z \ \& \ P(x) \ \& \ Q(x)]$, where $P(x) = x$ is *Niuyue de Wujia*, $Q(x) = x$ is *zuigui*, $Z = wujia$.

After applying (27) to the comment clause *Niuyue de wujia zuigui*, we have the following semantic open predicate $C = \lambda Z \subseteq \text{things } [x \text{ is } \textit{Niuyue de } Z \ \& \ x \in Z \ \& \ \textit{zuigui}'(x)]$ which can be applied to the topic *wujia* to give us the semantic representation for (22): $\lambda Z \subseteq \text{things } [x \text{ is } \textit{Niuyue de } Z \ \& \ x \in Z \ \& \ \textit{zuigui}'(x)]$ (*wujia*') = $x \text{ is } \textit{Niuyue de } wujia' \ \& \ x \in wujia' \ \& \ \textit{zuigui}'(x)$.

As for the fourth type of dangling topics, we argue that they are subcategorized for by the verb *mafang* 'bother' in the thematic structure in the lexicon, though they are not mapped to argument positions in syntax. In this case, it is also semantically licensed, i.e., licensed by an unrealized theta-role. We think that the theta-role of the topic NP in (16) may be Instrument. It is generally assumed that an NP bearing the Instrument theta-role can appear either before or after the subject, as shown below:

- (28) a. Xihongshi wo chao le jidan.
 tomato I fry ASP egg
 I fried eggs with tomatoes.
 b. Wo xihongshi chao le jidan.
 I tomato fry ASP egg

The third type, i.e., the *xingkui* type of dangling topics are also semantically licensed. We agree with Shi that the sentence introduced by *xingkui* is an incomplete sentence, but we do not think that there is a syntactic gap within the omitted part of the sentence. We think that the omitted part of the sentence contains a semantic variable instead of a syntactic gap that is related to the topic, which can license the topic semantically instead of syntactically. It should be noted that neither syntactic licensing nor semantic licensing can guarantee that the relevant sentence can be successfully interpreted. (13) is unacceptable because the sentence does not provide enough information for the hearer or reader to comprehend it, thus violating Grice's Maxim of Quantity. (12) can be successfully interpreted because there is a stereotypical relation between the topic and the omitted part of the sentence, thus making the latter informationally redundant. In (13) this relation or cognitive frame does not exist, and it is thus necessary to spell out the omitted part so as to provide enough clues for the hearer to understand what information is being conveyed.

4 Conclusion

In this paper, we have shown that topics in Chinese can be either syntactically licensed or semantically licensed. We think that there is a distinction between syntactic open predicates and semantic open predicates. A syntactic open predicate contains a syntactically identifiable empty slot or resumptive pronoun, but a semantic open predicate does not. Although semantic variables do not have any syntactic realization, they can turn the relevant predicates into semantic open predicates, thus being able to license a topic and deriving a well-formed topic-comment structure. An anonymous reviewer asks if the examples discussed in this paper can be viewed as another type of construction if they cannot be analyzed as topic-comment by syntactic means. It seems that they cannot. Since the topic cannot occur independently if not supported by the comment, it is not possible to treat the topic as an independent sentence. If one does treat it as an independent sentence, one still faces the problem of explaining why such kind of construction is not allowed in English. The same reviewer also asks if the semantic account contradicts the conventional syntactic account, and if they can co-exist. We think that the semantic account does not contradict the syntactic account if we regard the semantic licensing condition as a more general condition which subsumes the syntactic licensing condition. That is, if a language allows semantic licensing, it always allows syntactic licensing, but not vice versa. Hence, there is no contradiction between the semantic licensing condition and the syntactic licensing condition. Languages may choose different ways to license a topic. In English, only syntactic open predicates can license a topic, but in Chinese, both semantic and syntactic predicates can license a topic (cf. Xu & Liu (1998), and Xu (2001) for a similar view).

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References

- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- Huang, C. -T. James. 1982. *Logical relations in Chinese and the theory of grammar*. Doctoral Dissertation, MIT, Cambridge, Massachusetts.
- Huang, C. -T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531 - 574.
- Huang, C. -T. James. 1987. Remarks on empty categories. *Linguistic Inquiry* 18: 321 – 337.
- Huang, C. -T. James. 1989. Pro-drop in Chinese: A generalized control theory. In Osvaldo Jaeggli and Kenneth Safir (eds.), *The Null Subject Parameter*, pp. 185-214. Dordrecht: Kluwer.
- Huang, C. -T. James. 1991. Remarks on the status of the null object. In Robert Freidin (ed.), *Principles and Parameters in Comparative Grammar*, pp. 56-76. Cambridge: MIT Press.
- Huang, C. -T. James and Y.-H. Audrey Li. 1996. Recent generative studies in Chinese syntax. In C.-T. James Huang and Y.-H. Audrey Li (eds), *New Horizons in Chinese Linguistics*, pp. 49 – 95. Dordrecht: Kluwer.
- Huang, Yan. 1994. *The syntax and pragmatics of anaphora: A study with special reference to Chinese*. Cambridge: Cambridge University Press.
- Huang, Yan. 1995. On null subjects and null objects in generative grammar. *Linguistics* 33: 1081-1123.
- Lee, Thomas. 1986. *Studies on quantification in Chinese*. PhD Dissertation, UCLA.
- Ning, Chunyan. 1993. *The Overt Syntax of Relativization and Topicalization in Chinese*. Doctoral Dissertation, University of California (Irvine).
- Shi, Dingxu. 2000. Topic and topic-comment constructions in Mandarin Chinese. *Language* 76, 2: 383 – 408.
- Tsao, Feng-fu. 1977. *A functional study of topic in Chinese: the first step toward discourse analysis*. Doctoral Dissertation, USC, Los Angeles, California.
- Xu, Liejiong. and D. T. Langendoen. 1985. Topic structures in Chinese. *Language* 61. 1: 1-27.
- Xu, Liejiong. 1986. Free empty categories. *Linguistic Inquiry* 17: 75-93.
- Xu, Liejiong and Liu Danqing. 1998. *Topic: structural and functional analyses*. Shanghai: Shanghai Education Press.
- Xu, Liejiong. 2001. The topic-prominence parameter. In Haihua Pan (ed.), *Studies in Chinese Linguistics II*, pp. 209-234. Hong Kong: The Linguistic Society of Hong Kong.