

## **A Study of L2 English L1 Chinese Native Speakers' Acquisition of Chinese Topic-comment Constructions**

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### **Abstract:**

The study conducted a research on L1 Chinese and L2 English speakers' acquisition of Chinese topic-comment constructions. Several results were found. First, the type of the topic, the position of the topic, and the English proficiency did exert influence on Chinese native speakers' perception of Chinese topic-comment constructions. To analyze Chinese native speakers' perception of Chinese topic-comment constructions, three aspects need to be considered. Second, backward transfer from English to Chinese seemed to occur in high English proficiency group when they comprehended the Chinese topic-comment constructions. For the high English proficiency group, because of the backward transfer from English to Chinese, they seemed to have got used to subject-prominence feature of English and unlearned the topic-prominence feature of Chinese. Therefore, when they encountered sentence that topic was placed in complement clause, they still felt acceptable. Another explanation is that they appeared to transfer the strategy used in processing English garden path sentences into Chinese, which facilitated their understanding of Chinese garden path sentences (in this study, it is the construction whose topic is in complement clause). Third, when participants dealt with the constructions that moved-topics are in complement clause (Chinese garden path sentences), they tended to adopt the late closure strategy and minimal attachment strategy, which undermined their acceptability of this kind of sentences.

**Key Words:** Chinese topic-comment constructions, Backward language transfer, Garden path sentences, Late closure strategy and minimal attachment strategy

## 1. INTRODUCTION

Chinese is a topic-prominent language while English is a subject-prominent language (Li and Thompson, 1976). Different from English, Chinese is abundant in topic-comment constructions, especially unique in possessing base-generated topic-comment constructions. Based on this, scholars have conducted a number of studies on the acquisition of topic-comment constructions, particularly non-Chinese native speakers' acquisition of Chinese topic-comment constructions. However, there remains some aspects that the existing studies do not concern. First, the existing studies mainly focused on second language acquisition. These studies confirmed the forward language transfer from the learners' native language to Chinese topic-comment constructions, but few of them studied the backward transfer from Chinese native speakers' second language to Chinese. That is to say, few of them studied L1 Chinese L2 English speakers' acquisition of Chinese topic-comment constructions. Second, studies have found that the position of topic could also influence the acquisition of the topic-comment constructions. The saliency is higher when topic is sentence-initial rather than that when topic is placed in complement clause. Besides, the author predicts that according to garden path sentences theory, when topic is placed in the complement clause, it forms into a garden path sentence, which may bring difficulty in comprehending the sentence. Therefore, in order to testify and further explore the existing studies, this research intends to conduct a study on L1 Chinese L2 English speakers to investigate whether the type of the topic, the position of the topic, and the English proficiency will exert influence on Chinese native speakers' perception of Chinese topic-comment constructions.

This paper first introduces the theoretical background about language transfer, topic-comment constructions and garden path sentences as well as the previous studies on these topics. Then, based on the previous studies, it puts forward three study questions. Next, it presents the whole experiment, including the participants, the materials and design, the procedure as well as the data analysis method. Furthermore, the paper elaborates the result and discussion part of experiment. Finally, it comes to the conclusion, including the summary of the study result plus the limitations and suggestions for further study.

## 2. THEORETICAL BACKGROUND

### 2.1 Review of language transfer

#### 2.1.1 Definition and classification of language transfer

In 1953, American linguist Ulrich Weinreich defined interference as "those instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language" in his book *Language in Contact* (1953:1). According to his definition, it can be inferred that interference is a bilateral process, which means L1 can influence the acquisition of L2 while L2 can also lay impact on L1. In 1898, Odlin first put up the concept of language transfer in his book *Language Transfer: Cross-*

*Linguistic Influence in language Learning*. In this book, he stated that “transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired.” And Odlin (1898:12) classified language transfer into two categories: substratum transfer and borrowing transfer. Substratum transfer refers to the effect of L1 on L2 and borrowing transfer means the effect of L2 on L1. Since then, the conception of transfer is widely accepted and cited by other researchers.

According to different criteria, the classification of transfer also varies. First, according to the effects of transfer, transfer can be divided into two categories: positive transfer and negative transfer. Positive transfer occurs when the language one has acquired can facilitate the study of a new language. Negative transfer refers to the impediment that the acquired language has brought on the new language learning. Second, in terms of the different subsystems of language that transfer occurs, language transfer can be classified into the following types: phonetic and phonological transfer, lexical transfer, semantic transfer, syntactic transfer and also discourse transfer. Finally, in accordance with the direction of transfer, language transfer can be divided into forward transfer and backward transfer. Forward transfer refers to the influence of native language or previously acquired language on the acquisition of a target language, a new language. Backward transfer refers to the influence that a newly learned language has on native language or previously acquired language.

### **2.1.2 Previous studies on language backward transfer**

Since Weinreich (1953) put forward that the L1 and L2 could influence each other, quite a number of researchers have devoted to studying the effect of L1 on L2. By contrast, the effect that L2 may lay on L1 has not grasped enough attention. Not until the recent years did an increasing number of scholars begin to study the effect of L2 on L1, which is backward transfer. Although compared with forward transfer, backward transfer is not obvious enough, the existing studies do manifest its existence.

Researchers abroad have proved that L2 does exert influence on L1 from different aspects of language, such as phonology (Flege, 1987), lexicon (Laufer, 2003), morphology (Pavlenko, 2003), semantics (Pavlenko, 2003), morphosyntax (Su, 2001) and pragmatics (Cenoz, 2003).

Flege (1987) conducted a research on the phonological feature of France’ French and English bilinguals. The result showed that affected by L2 (English), the bilinguals tended to pronounce the consonant /t/ longer than the French monolinguals.

For lexicon, Batia Laufer (2003) did a research on Israel’s Russian immigrants. It showed that the longer the Russian immigrants lived in Israel, the less their lexicon diversity was and the more difficulty they would find in judging the match of their native language words.

The backward transfer on morphology manifests as the merge of language code. Pavlenko (2003) conducted a research on Russian and English bilinguals to study their use of verbs. He found that when the participants encountered English and Russian’ perfect aspect and

progressive aspect at the same time, they could not correctly use the unmarked perfect aspect of Russian. In this process, the merge of language code occurred. What's more, Pavlenko also found that Russian's English bilinguals tended to enlarge the semantic meaning of Russian words that corresponds to English words.

As for morphosyntax, Su (2001) conducted a research on L1 English and L2 Chinese participants of different L2 proficiency level to study their processing of sentence. The result showed that both forward transfer and backward transfer exist in their processing of sentence.

In pragmatics, Cenoz (2003) did a research on Spain's L2 English learners and he discovered English's pragmatic elements in the participants' native language, the Spanish, which justified that backward transfer did exist in pragmatic level.

In 2001, Cook held a seminar about backward transfer from L2 to L1 in Britain's Vevenhoe House hotel. After the seminar, he piled the papers delivered in the seminar into the book *Effects of the Second Language on the First* (2003). This book comprehensively recorded the achievements obtained in the study of backward transfer and was the first one that aimed specifically at backward transfer study. Since then, backward transfer has begun to attract scholars' attention and gradually come to researchers' spotlight.

In this book, Cook also put forward the multi-competence theory based on Chomsky's poverty-of-stimulus argument. He argued that bilingual's language ability was different from monolinguals. It was multi-competence, which meant bilinguals possess the knowledge of two languages. The two language systems were not totally separate or integrated but they were closely related and affected each other. Therefore, the influence of L1 and L2 were bilateral, which also justified the existence of backward transfer.

Although the study on backward transfer has drawn much attention abroad, Chinese studies on backward transfer remain a few. The empirical studies done on backward transfer are mainly as follows. For phonology, Dong and Lu (2010) compared the pronunciation of Chinese produced by Chinese monolinguals and Chinese and English bilinguals, and verified the existence of backward transfer at phonological level. For morphosyntax, Wang (2006) invited English majors to do an acceptability judgement task in order to investigate the influence that English had on Chinese nominal construction beyond IP. The result showed that English majors' knowledge about Chinese sentence construction was affected by their knowledge of English sentence construction. Cai and Dong (2007) also conducted a research on sentence processing strategy. From the study, it concluded that backward transfer also occurred in English and Chinese bilinguals' sentence processing strategy. Apart from these studies, Liu (2010), Fan and Li (2011), and Zhang (2014) all have carried out researches on backward transfer from pragmatic perspective.

## **2.2 Review of topic-comment construction**

### **2.2.1 Definition and classification of topic-comment construction**

Li and Thompson (1976) put forward that according to the parameter [ $\pm$ topic-prominent] and the parameter [ $\pm$ subject-prominent], language can be classified into four types: subject-prominent language, topic-prominent language, language that subject and topic are both prominent, language that subject and topic are neither prominent. He further explained that Chinese was a typical topic-prominent language and English was a typical subject-prominent language. In subject-prominent languages like English, subject-predicate construction is the basic construction while in topic-prominent language like Chinese, topic-comment construction is frequently seen. Consistent with the study of topic-comment construction, Pan and Hu (2008) contended that topic-comment constructions can be divided into two types: moved topic-comment construction and base-generated topic-comment construction. English and Chinese both allow the existence of moved topic-comment construction. However, for base-generated topic-comment construction, it only exists in Chinese.

Moved topic-comment construction is syntactically licensed and mainly covers three types. The first type is formed by the process that the object moves to the topic position of the sentence and leaves a trace, such as sentence (1). The second type is formed by the process that the object moves to the topic position of the sentence and a pronoun fills the trace that the object leaves, such as sentence (2). For the third type, the subject of a sentence moves to the topic position and a pronoun fills the trace, such as sentence (3).

(1) 那个 老师, 大家都 不喜欢。 .

That-CL teacher we all dislike.

'That teacher, we all dislike.'

(2) 那个 演员, 大家都 想 见他。

that-CL actor we all want meet him.

'That actor, we all want to meet him.'

(3) 那本 书, 它是 关于 经济的。

that-CL book it is about economy DE.

'That book, it is about economy.'

Base-generated topic-comment construction is semantically licensed and includes four types. In the first type, the topic is in possession of the subject, such as sentence (4). As sentence (5) illustrates, for the second type of base-generated topic-comment construction, the topic actually semantically includes the subject. Similarly, for the third type, the topic semantically covers the object, such as sentence (6). For the last type, it is called aboutness topic-comment construction, because the topic and the subject is in relation of aboutness, such as sentence (7).

(4) 这只 大象 鼻子 长。

this-CL elephant nose long.

‘This elephant’s nose is long.’

(5) 水果，香蕉最美味。

fruit banana most delicious.

‘As for fruit, banana is the most delicious.’

(6) 水果，我最喜欢苹果。

fruit I most like apple.

‘As for fruit, I like apple the most.’

(7) 那场大火，幸亏消防员来得快。

That-CL fire fortunately fireman come DE fast.

‘As for that fire, fortunately the fireman came fast.’

Therefore it can be noticed that Chinese, as a topic-prominent language, is rich in topic-comment constructions, among which the base-generated topic-comment construction takes up the most proportion. What is noticing is that the base-generated topic-comment construction uniquely exists in Chinese. Thus, base-generated topic-comment construction is also called Chinese-type topic-comment construction. On the contrary, English, as a subject-prominent language, only has moved topic-comment constructions. And it mainly exists in oral English.

### **2.2.2 Previous studies on acquisition of topic-comment construction**

Since Li and Thompson (1976) put forward the concept of topic-prominence language and subject-prominence language, more and more linguists have carried out studies on the acquisition of topic-comment construction. However, the studies mainly focus on second language acquisition of topic-comment construction, and the studies on first language acquisition of topic-comment construction are quite few. As for second language acquisition of topic-comment construction, early studies showed that independent of the learner’s native language, second language acquisition was characterized by an early topic-comment stage (Fuller and Gundel 1987). However, late studies found out that the universal topic-prominence stage did not exist, and it was just language transfer that took effect (Jin 1994, Yuan 1995, Cao 2006, Li and Yang 2014).

Jin (1994) investigated English students’ acquisition of Chinese topic-comment construction. The result showed that in the early stage of Chinese learning, the students did not manifest a topic-prominence stage, but transferred their native language, English’s subject-prominence feature into the study of Chinese. Yuan (1995) conducted a study about acquisition of base-generated topics by English-speaking learners of Chinese. He used acceptability judgement task to assess. Although the assessment measure was different from Jin’s study, it showed the similar result the interlanguage of English native speakers has subject-prominent feature.

Jin's result also revealed that universal topic-prominence stage did not exist. Based on the former studies, Cao (2006) investigated the acquisition of topic-comment stage of English-speaking learners, Korean-speaking learners and Japanese speaking learners. The result showed that for the English-speaking learners of Chinese, they did not go through a topic-prominence stage while the Korean-speaking learners and Japanese-speaking learners all transferred topic-prominence feature into Chinese study, which was an evidence of native language transfer. Li and Yang (2014) carried out a research on Chinese EFL learners' interlanguage. The study also confirmed that Chinese EFL students reflected a change of the second language acquisition process from topic-prominence to subject-prominence.

Therefore, the consistent studies show that universal stage of topic-prominence does not exist. Instead, learners tend to transfer their native language's features into the acquisition of topic-comment construction.

### 2.3 Review of the garden path sentence

#### 2.3.1 Definition and classification of garden path sentence

In 1970s, the garden path sentences came into researchers' spotlight. Bever (1970) put forward the concept of garden path sentence. He explained that because of the input sequence of language, the grammatical relation among the sentence components is unstable, which leads to misunderstanding of the sentence.

In English, there are three main categories of garden path sentences (Hou, 2014).

Category	Example
MV/RR	The horse raced past the barn fell.
DO/S	While the man hunted the deer ran into the woods.
DO/SC	Jane convinced her parents are interested in her children.

For the MV/RR sentence *The horse raced past the barn fell*, at first, the parser may regard *raced* as the main verb of the sentence. But not until the parser encounters the verb *fell* can he discover that *fell* is actually the true main verb of the sentence. Then he reanalyzes the sentence and comprehends the sentence as *The horse that raced past the barn fell*, in which the *horse* is the subject and *fell* is the main verb. As for the second sentence of DO/S category, *While the man hunted the deer ran into the woods*, at the first time of reading, the parser may easily take *the deer* as the complement of verb *hunted*. However, when he finishes the sentence, he can figure out that *the deer* is actually the subject of the verb *ran*. As for the last category, the DO/SC category, the sentence *Jane convinced her parents are interested in her children* can also lead readers into incorrect parsing. At the first time of reading, the parser may regard *her parents* as the direct object of the verb *convinced*. However, after reading the whole sentence and analyzing, he can find out that it is *her parents are interested in her children* that plays the role of complement of the verb *convinced*. For this kind of garden path sentence, the predicate of the matrix clause is usually two-place argument predicate, which means

This predicate can choose either the DP or the CP after it as its complement. When the parser chooses CP, he can correctly comprehend the sentence whereas when he chooses DP, he will end up in wrong understanding.

### **2.3.2 Previous studies on garden path sentence**

Then Frazier and Fodor (1982) brought forward two strategies when a parser is trying to parse a garden path sentence, which are late closure strategy and minimal attachment strategy. Late closure strategy refers that in order to reduce the burden of working memory, the parser tends to attach the new item that he encounter to the elements currently being processed. Minimal attachment strategy means that when a parser processes a sentence, he prefers attaching new items into the phrase marker being constructed using the fewest syntactic nodes consistent with the rules of language. The two strategies may account for the misunderstanding the parser make when he processes a garden path sentence. The former studies mainly studies garden path sentence from the perspective of psychology. Based on grammatical analysis, Pritchett (1992) put forward  $\theta$ -attachment principle. Frazier and Clifton (1996, 1997) brought forward construal theory. They argued that the primary relation of a sentence is adequate and definite and cannot be analyzed again. On the basis of construal theory, Sturt and Crocker (1996, 1997) came up with thematic monotonic model.

For Chinese studies on garden path sentences, they are still at an early stage. These studies mainly focus on second language acquisition, especially on whether Chinese-speaking learners' L2 English proficiency can influence their acquisition of English garden path sentences. Chen (1998) conducted a study on Chinese-speaking learners of English and concluded that English proficiency can make a difference when learners processing garden path sentences. The higher the learners' English proficiency is, the more accurately they process the garden path sentence. Gu and Cheng (2010) also conducted a study on English major students of a Chinese university. The result showed that L2 English proficiency positively correlated with the accuracy rate of learners' understanding of garden path sentences' matrix clause, but for the complement clause of the garden path sentences, no significant correlation was found between L2 English proficiency and the accuracy rate. Liu (2018) also carried out a study on Chinese-speaking English learners' understanding of DO/SC, this kind of garden path sentences. The learners are classified into two English proficiency level, the high level and the intermediate level. The study result showed that with the increasing of their English proficiency level, their ability to correctly comprehend the DO/SC garden path sentence also increases. Although it is still in controversy among researchers, It is possible that the higher the learners' L2 language proficiency is, the more accurately they can process garden path sentences.

## **3. STUDY QUESTIONS**

From what has been mentioned above, it can be drawn that studies on backward transfer are quite rare. Especially for the backward transfer on morphosyntax level, the existing studies are not thorough enough. For topic-comment construction, researchers have conducted a number of



studies on the acquisition of it. Among them, the studies on English-speaking learners' learning of Chinese topic-comment construction have attracted the most attention. However, few studies have studied Chinese native speakers' use or acceptability of topic-comment construction. Inspired by this phenomenon, this paper tries to figure out whether backward transfer can occur on English learners' acceptability of Chinese topic-comment construction. In other words, whether Chinese native speakers' L2 English proficiency can influence their acceptability of Chinese topic-comment constructions?

Since English differs from Chinese in that English only have moved topic-comment construction while Chinese are abundant in base-generated topic-comment construction, this paper chose Chinese moved topic-comment construction and base-generated topic-comment construction as the two study constructions. The moved topic-comment construction is limited in the most typical one, which is formed by the process that the object moves to the topic position of the sentence and leaves a trace. The base-generated topic-comment construction is also limited in type that the topic is in possession of the subject.

Besides, topic-comment construction can occur in both matrix clause and complement clause. However, when the topic is placed in the complement clause, the whole sentence can be a garden path sentence of DO/SC type. Based on late closure strategy and minimal attachment strategy, the author predicts that when topic-comment construction appears in complement clause rather than in matrix clause, the parser may attach the topic to the matrix sentence elements he reads before rather than leave it to the rest topic-comment construction. This may give rise to problem in processing the sentence correctly. For example, "He talked about the ball in last year, no classmate has shown up. (他谈到, 去年的舞会, 班里没一个人出席。)" "The ball in last year (去年的舞会)" is the topic and it is placed in the complement clause. However, when parser reads the sentence, he is highly likely to treat "the ball in last year (去年的舞会)" as the object of the "talked about (谈到)". When he finishes reading the sentence, he may find that "the ball in last year (去年的舞会)" is actually the object of "shown up (出席)". If he cannot correctly figure out this point, he may encounter difficulty in understanding the sentence. Based on this prediction, this paper intends to find out whether the position of topic-comment construction could also make a difference in Chinese' acceptability of the topic-comment construction. Therefore, this paper chose the two situations, that topic-comment construction as the matrix clause and topic-comment construction as the complement clause, as the study target.

More specifically, this paper intends to study whether the type of topic-comment construction, the position of topic-comment construction and L2 English proficiency can influence Chinese native speakers' acceptability of Chinese topic-comment construction.

The study questions are as follows:

- (1) Whether the type of topic-comment construction, the position of topic-comment construction and L2 English proficiency can influence Chinese native speakers' acceptability of Chinese topic-comment construction?
- (2) When Chinese native speakers process the Chinese topic sentences, does their processing conform to the late closure strategy and minimal attachment strategy?
- (3) During the process when Chinese native speakers process the Chinese topic sentences, does the backward transfer from English to Chinese take effect?

## 4. METHODOLOGY

### 4.1 Participants

Sixty-two native Chinese speakers volunteered to participate in the questionnaire, with their average age ranging from 18 to 24 years old and their education ranging from undergraduate to doctoral degree (35 postgraduates, three doctoral students and 24 undergraduates). In addition, the serial numbers (from number one to number sixty-two) were generated automatically based on the order in which participants fill out the questionnaire. All participants were divided into two groups according to the level of English based on the highest level of English proficiency certificates they currently receive. Twenty-seven participants were classified as the high-level group for that they have obtained a TEM 4 or TEM 8 certificate, while 35 participants were classified as the low-level group. Ten participants as they have obtained a CET 4 or CET 6 certificate. Ten participants were excluded because of a high number of time-out responses in their data and their numbers are 2, 13, 35, 37, 39, 42, 43, 44, 45, 52. Hence, the ultimate number of low-level group participants and high-level group participants is 28 and 24, respectively.

### 4.2 Materials and design

Fifteen Type I sentences (base-generated topic plus matrix clause), fifteen Type II sentences (base-generated topic plus complement clause), fifteen Type III sentences (moved topic plus matrix clause) and fifteen Type IV sentences (moved topic plus complement clause) were selected (the full sentences list appears in Appendix A). The sentences differed on the type of topic (base-generated/ moved) and the position of topic (matrix clause/ complement clause) but were matched pairwise on three kinds of lexical variables, including the length of sentence, specifically, the number of characters constituting the simple sentence ranged from 9 to 17 and the number of characters constituting the complex sentence ranged from 14 to 21. What's more, the sentences were also matched in familiarity, which were obtained from MRC Psycholinguistic Database (Coltheart, 1981). In addition to above two variables, there are also considerations in terms of the vocabulary constituting the sentence. That means the semantics

of the selected vocabulary composing all of the sentences are as simple as possible in order to minimize the interference of the semantics of the words on the judgment of participants.

We also selected another sixty sentences matched with the four types experimental sentences in terms of the type of topic and the position of topic to serve as the basis for creating fillers for the experiment. We made an effort to select filler with controlling their sentence type, namely, thirty of them are simple sentences, and the rest are compound sentences containing object clauses, corresponding to the sixty experimental sentences. The resulting fillers were also matched pairwise with the experimental sentences in terms of length, familiarity and semantics. For instance,

(1) a. 这则报道, 民众反应很强烈。(Type I sentence)

This news, people react strongly.

People react strongly to this news.

b. 小明最擅长的运动是篮球。(Simple sentence filler)

Xiaoming best at 's sport is basketball.

The sport that Xiaoming is best at is basketball.

c. 数据显示, 这则报道, 民众反应很强烈。(Type II sentence)

Statistic show that this news people react to very strongly.

Statistic show that people react very strongly to this news.

d. 小明介绍说, 他最擅长的运动是篮球。(Complex sentence filler)

Xiaoming introduces that he best at 's sport is basketball.

Xiaoming introduces that The sport that he is best at is basketball.

In (1a), which belongs to Type I sentence (base-generated topic plus matrix clause), the length of character is 11 which is same as (1b), an example of simple sentence filler. In other words, this simple sentence filler matched with the former experimental sentence in length, which is also reflected in the length of (1c) and (1d), the former is

a Type II sentence (base-generated topic plus complement clause) whose number of character is 15, also in close to the length of the latter, an example of complex sentence filler whose number of character is 15, too. In terms of familiarity, these above four examples all share high familiarity in almost uniform scope that participants will not have cognitive differences when coming across them. In other words, the familiarity of the experimental sentence and the interference term are very close to each other. Furthermore, the semantics is another controlled variable when matched the experimental term and fillers. Specifically, the semantics of each sentence is easy to understand in order to reduce its interference to participants. Most

vocabulary which constitute each sentence all belong to simple bigrams, no idioms and no uncommon words. Hence, participants do not need to pay much attention to the understanding of the semantics of sentences, which also can be reflected in the easy-to-understand characteristics of (1a), (1b), (1c) and (1d).

### **4.3 Procedure**

The experimental process is roughly divided into three stages: Questionnaire Making, Questionnaire Releasing and Data Collection. The entire questionnaire is divided into three parts: the first part was set to classified all the participants into low-level group and high-level group according to their highest level of English proficiency certificates; the second part was comprised of the choosing of the degree of acceptability of one hundred and twenty sentences; the last part was about more specific individual information of participants such as their gender and educational level. In the process of questionnaire making, some crucial individual variables such as the gender, the average age, the highest education, the major, the starting age of English learning, the total time of English learning, the highest level of English proficiency certificate of the participant group, the self-reported English and Chinese proficiency level in terms of listening, speaking, reading and writing , as well as the time allocation ratio of using Chinese and English in daily life were taken into consideration. Hence, the first several questions of the questionnaire were set based on the consideration of these above relevant factors. For example, how about the situation of the daily usage of English in their life and have the participant ever had an experience abroad? What is the approximate ratio of their time spent in Chinese and English learning respectively in their normal life? Whether the participant is an English major student or not? How old are they when they started to learn English and how long have they been learning English? Besides, all sentences including sixty experiential sentences and sixty fillers were ordered according to the order of the first letter of first character in each sentence in Latin alphabet. Based on that, researchers further disrupted the order of these one hundred and twenty sentences randomly. The questionnaire applied the most-commonly used Likert scale and the number of scale points is five (from -2 to 2). The five numbers represented participants' different degree of acceptability to the experimental sentence, namely, -2 (completely unacceptable), -1 (generally unacceptable), 0 (uncertain), 1 (generally acceptable), 2 (completely acceptable). The survey research was released through the Questionnaire Star Platform and participants were asked to choose one among the above five numbers according to their degree of acceptability of experimental sentences as quickly as possible to judge whether the sentence conforms to the Chinese language daily usage habit. For instance, if he thinks that the sentence is uncertain, he should choose 0 and if he is completely sure about the sentence, he should choose 2, while he should choose -1 if he thinks that the sentence is generally unacceptable. Besides, the specific words that need to be paid more attention to in the instruction are boldly displayed in order to remind the participant in the process of filling in the questionnaire. And the complete instruction words of this survey research are listed as follows:

“作为中文母语者，请根据下列句子是否符合中文习惯，来选择您的接受度。请不要反复思考，按照第一印象选择接受度即可，谢谢！”

The corresponding English instruction is translated as follows:

As a Chinese native speaker, please choose your degree of acceptability of the sentence based on whether the following sentences are in line with Chinese language usage habits. Please choose the degree of acceptability according to your first impression. Thank you!

After questionnaire releasing stage, researchers collected data with the help of the build-in function of Questionnaire Star Software. After collecting the data, researchers reviewed the data comprehensively. As a consequence, they removed the data of ten participants whose number are in order of 2, 13, 35, 37, 39, 42, 43, 44, 45, 52 because their response time is far longer than other participants', and then researchers further analyzed the data of the rest fifty-two participants specifically in a systematical manner.

#### **4.4 Data analysis**

Statistical analyses were carried out through SPSS 22.0 by using the repeated measures ANOVA. The mean score of each sentence type of each participants was calculated. With POSITION (matrix, complement) and TYPE (base-generated, moved) as the within-subjects variables, and second language (English) PROFICIENCY (high, low) as the between-subjects variable, the ANOVA intended to figure out if the three variables significantly influenced the perception of Chinese topic construction among native speakers.

### **5. RESULT**

#### **5.1 Overall results**

Descriptive data is presented in table 1. The analysis indicated that POSITION of the topic had a significantly main effect on the scoring of the Chinese topic construction ( $p < .001$ ,  $F(1, 50) = 25.924$ ,  $\eta^2 = .341$ ). The TYPE of topic also stood as an influential factor to significantly affect the perception of Chinese topic construction ( $p = .025$ ,  $F(1, 50) = 5.333$ ,  $\eta^2 = .096$ ). As for the between-subjects variable PROFICIENCY, the results showed that the difference of English proficiency failed to indicate the difference of the perception of Chinese topic sentence among Chinese native speakers ( $p = .335$ ,  $F(1, 50) = .948$ ,  $\eta^2 = .019$ ), thus zero main effect of PROFICIENCY.

Table 1. Mean and standard deviation (SD) of the acceptability score

<b>Position</b>	<b>Type</b>	<b>Proficiency</b>	<b>Mean</b>	<b>SD</b>	<b>N</b>
Matrix	Base-generated	Low	1.06	0.54	28
		High	1.07	0.59	24
	Moved	Low	1.01	0.63	28
		High	1.05	0.66	24
Complement	Base-generated	Low	0.68	0.72	28
		High	1.03	0.57	24
	Moved	Low	0.55	0.80	28
		High	0.81	0.70	24

## 5.2 Interaction effects

Notably, the results also indicated two interactions between different variables. Although there was no significant difference of the scoring between the low- and high-proficient participants, there existed an interaction between POSITION and PROFICIENCY ( $p = .015$ ,  $F(1, 50) = 6.399$ ,  $\eta^2 = .113$ ). Figure 1 below illustrate the relation. Further pairwise comparison (Bonferroni) indicated that when topics appeared in the matrix clause, there was no significant difference between low- and high-proficient participants ( $p = .890$ ). When topics were placed in the complement clause, though the difference across the two groups remained insignificant ( $p = .121$ ), the difference had a tendency to be enlarged. Within the low-proficient group, the scoring of Chinese topic construction when topics were placed in the matrix clause was significantly higher than when topics were put in the complement clause. However, the participants with high English proficiency exhibited no significant difference between different topic positions among Chinese topic construction.

Table 2. Pairwise comparison of PROFICIENCY (\*POSITION)

Position	Proficiency		Difference (I-J)	Sig
	I	J		
Matrix	Low	High	-.022	.890
	High	Low	.022	.890
Complement	Low	High	-.302	.121
	High	Low	.302	.121

Table 3. Pairwise comparison of POSITION (\*PROFICIENCY)

Proficiency	Position		Difference (I-J)	Sig
	I	J		
Low	Matrix	Complement	.421	.000*
	Complement	Matrix	-.421	.000*
High	Matrix	Complement	.142	.087
	Complement	Matrix	-.142	.087

\* Significant at the .05 level

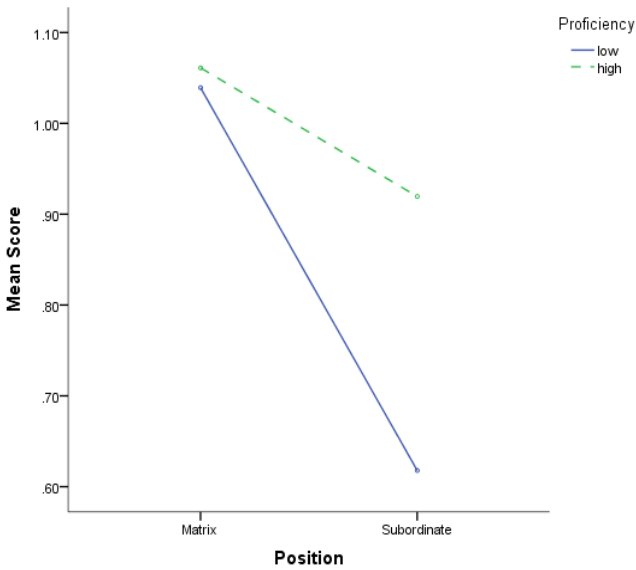


Figure 1. Mean score of Chinese topic construction regardless of the topic type

Interaction was also found between POSITION and TYPE ( $p = .010$ ,  $F(1, 50) = 7.209$ ,  $\eta^2 = .126$ ), as is shown in Figure 2. Further pairwise comparison (Bonferroni) implied that for base-generated topics, whether they appeared in matrix or complement clause significantly influenced the perception of Chinese topic construction ( $p = .002$ ). The former was more acceptable than the latter. Similar result was discovered among moved topics, however with larger difference ( $p < .001$ ). When topics were placed in the matrix clause, the perception of base-generated topics and moved topics had no significant difference ( $p = .601$ ), whereas in the complement clause, the scoring of base-generated topics and moved topics were significantly different regardless of the proficiency level of the participants.



Table 4. Pairwise comparison of POSITION (\*TYPE)

Type	Position		Difference (I-J)	Sig
	I	J		
Base-generated	Matrix	Complement	.207	.002*
	Complement	Matrix	-.207	.002*
Moved	Matrix	Complement	.357	.000*
	Complement	Matrix	-.357	.000*

\* Significant at the .05 level

Table 5. Pairwise comparison of TYPE (\*POSITION)

Position	Type		Difference (I-J)	Sig
	I	J		
Matrix	Base-generated	Moved	.031	.601
	Moved	Base-generated	-.031	.601
Complement	Base-generated	Moved	.181	.000*
	Moved	Base-generated	-.181	.000*

\* Significant at the .05 level

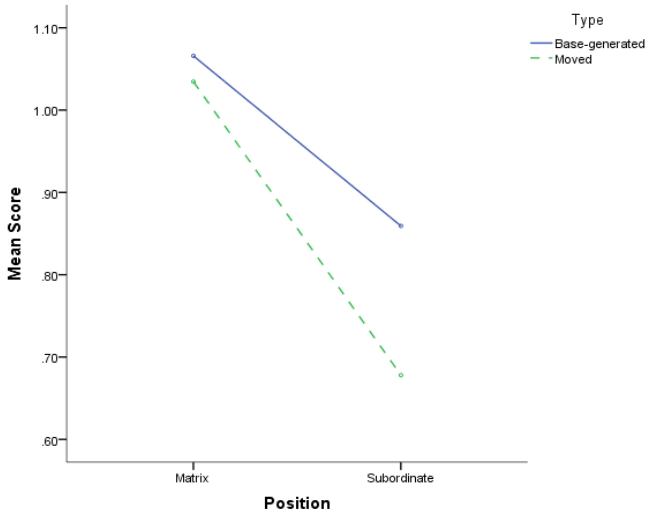


Figure 2. Mean score of Chinese topic construction regardless of the second language proficiency level

## 6. DISCUSSION

According to the above results, the acceptability of Chinese topic-comment construction among Chinese native speakers is likely to be influenced by the position of topic, the topic type and the second language proficiency level of native speaker.

### 6.1 Interaction effect of English proficiency and position of topic

Regardless of the topic type, the position of topic seems to have no effect on the acceptability across the two groups. Specifically, when topics either appear in the matrix clause or the complement clause, the low-proficient and high-proficient English-speaking Chinese had no significant difference in the scoring of Chinese topic-comment construction. For the natives with low English proficiency, the construction in which topics are put in the matrix clause are more acceptable than that where topics are in the complement clause. For Chinese speakers with higher English proficiency, topics in the matrix clause and topics in the complement clause had a similar acceptability, since no significant difference was observed based on the results.

This phenomenon can be possibly referred to the backward transfer from English to Chinese and the late closure strategy and minimal attachment strategy when participants parse these sentences. First, in English exit quite a large number of garden path sentences. According to previous studies (Chen, 1998; Guo and Cheng, 2010, Liu, 2018), it is highly possible that the

higher the learners' L2 language proficiency is, the more accurately they can process garden path sentences. Second, according to backward transfer theory, when L2 proficiency is high enough, learners of high English proficiency may transfer the feature of their L2 English to their native language when they process their native language. Thus, when Chinese-speaking learners of high English proficiency process Chinese garden path sentences, they are able to transfer their processing strategy used in English garden path sentence into processing Chinese garden path sentences. On the contrary, for Chinese-speaking learners of low English proficiency, because their L2 English proficiency is relatively low that backward transfer is unlikely to happen. Thirdly, when topic is placed in matrix sentence, such as the experiment sentence “那个老师, 大家都不喜欢 (That teacher, we all dislike.)”, the processing seems easy. This sentence's topic is “那个老师 (that teacher)”. Although it is placed in the right beginning, after finish reading the sentence, participants can still figure out “那个老师 (that teacher)” is actually the object of “不喜欢 (dislike)”. Then they would move “那个老师 (that teacher)” to the object position of “不喜欢 (dislike)” and comprehend the whole topic-comment construction as “大家都不喜欢那个老师 (We all dislike that teacher)”. However, when topic is placed in complement clause, such as sentence “校长知道, 那个老师, 大家都不喜欢 (The headmaster knows that teacher, we all dislike.)”, the sentence turns into a Chinese garden path sentence and processing gets more complicated. When first reading the sentence, according to late closure strategy and minimal attachment strategy, readers may attach “那个老师 (that teacher)” to “知道(knows)” rather than attach it to the following part. Thus, they may regard “那个老师 (that teacher)” as the object of “知道(knows)”. However, when they finish the whole sentence, they can discover that “那个老师 (that teacher)” actually belongs to the following part. It is the object of “不喜欢 (dislike)”.

For the Chinese native speakers of high L2 English proficiency, since they are able to transfer the strategy used in processing English garden path sentence into processing Chinese garden path sentence, even when they parse topic-comment construction in complement clause (a kind of Chinese garden path sentence), they can successfully make the right parsing. As a result, their accuracy rate is as high as when they parse the relatively easy one, topic-in-matrix clause construction. Therefore, for Chinese speakers with higher English proficiency, either topics in the matrix clause or topics in the complement clause, no significant difference was observed. However, for the Chinese native speakers of high L2 English proficiency, they are not as familiar as the high proficiency group in dealing with garden path sentences. When they encounter topic in complement clause, they would adopt late closure strategy and minimal attachment strategy, which misleads them to the wrong understanding of the sentence. Therefore, for the natives with low English proficiency, it is more acceptable when topics are put in the matrix clause than that when topics are in the complement clause.

Apart from this analysis, there seems to be another plausible explanation about the result. First, Chinese is featured as a topic-prominent language while English is characterized as a subject-prominent language. (Li) For Chinese topic-comment construction, the most typical feature is

that topic is always sentence-initially placed. The saliency is higher when topic is sentence-initial than that when topic placed in complement clause. Second, according to backward transfer theory, the higher the L2 proficiency is, the more influence that L2 will exert on L1. For the high English proficiency group, their English proficiency is high enough that they have been accustomed with the subject-prominence of English. Because of it, they probably have unlearned some traits about Chinese topic-comment construction, such as the trait that most topics are sentence-initial. Therefore, when topic is placed in complement clause, the high proficiency group regards that sentence as acceptable as that when topic is sentence-initial. The acceptability does not hold significant difference. Whereas since the low proficiency group still maintains the acquisition of topic-prominence feature, they still think that when topic is sentence-initially placed, the acceptability is higher than that when topic appears in complement clause. Therefore, their acceptability of the sentence that topic is in matrix clause is significantly higher than that when topic is placed in complement clause.

## 6.2 Interaction effect of type of topic and position of topic

The acceptability of Chinese topic-comment construction among all native speakers, regardless of their second language (English) proficiency, also varies with the topic type combining the position of topic. When topics are treated as matrix clauses, native speakers may sense that base-generated topics and moved topics do not differ in constructing the acceptability of sentences. They are all acceptable for Chinese-English speakers. This phenomenon may be explained by two reasons. First, Chinese allows both base-generated and moved topics (Pan & Hu, 2008). Therefore, either the base-generated topics or the moved topics are acceptable for Chinese native speakers. Second, when topic is placed in the matrix clause, the sentence is syntactically simple that the readers can easily grasp the right meaning. Therefore, when in matrix clause, either the base-generated or the moved topics do not have significant difference in acceptability.

Nevertheless, when topics are placed in complement clauses, sentences with base-generated topic are more acceptable for native speakers. The complexity of processing that the native speakers encounter may account for this result. First of all, when topic is in the complement clause, the whole sentence turns into a garden path sentence, whose complexity will impose difficulty in readers' processing. Second, specifically, when base-generated topics are used, the reader may firstly attach the topic to the verb of the matrix clause. After he finish reading the whole sentence, he can figure out the topic actually semantically belongs to the following complement clause. Then he will detach the topic form the matrix clause and finally come to the correct understanding. For example, “数据显示, 这则报道, 民众反应很强烈。(Statistic show this news, people react very strongly to.)” is a topic-comment construction whose topic is base-generated. When native speaker first reads the sentence, he is highly likely to attach “这则报道 (this news)” to the verb “显示 (show)”. However, after he reads the complement clause “民众反应很强烈 (people react very strongly to)”. He may figure out that “这则报道 (this news)” is actually semantically attached to the complement clause, which means “民众反应很

强烈 (people react very strongly to)” is the detailed introduction about “这则报道 (this news)”. After figuring out this point, he will detach “这则报道 (this news)” from the verb “显示 (show)” and come to the correct comprehension.

In contrast, when moved topic is used, readers have the tendency to look at the topic as the object of the matrix clause. After he reads through the whole sentence, he can find that the topic should be syntactically attached to the following complement clause. Thus, he will detach the moved topic from the verb in the matrix, which is same as that when he processing base-generated topics. However, after detaching the moved topic, he will go on to move the topic into the position of the object position of the verb in the complement clause. If he fails to process it in this way, he may end up in wrong understanding. For example, “校长知道, 那个老师, 大家都不喜欢 (The headmaster knows that teacher, we all dislike.)” is a typical topic-comment construction with moved topics. The processing process is as follows. First, according to the late closure strategy and minimal attachment strategy, the native speaker may attach “那个老师 (that teacher)” to the verb “知道(knows)”. If after finishing the whole sentence, he finds out that “那个老师 (that teacher)” is actually the object of “不喜欢 (dislike)”, then he may detach “那个老师 (that teacher)” from “知道(knows)”, and move “那个老师 (that teacher)” to the object position of “不喜欢 (dislike)”. Finally he can comprehend the sentence as “校长知道, 大家都不喜欢那个老师 (The headmaster knows that we all dislike that teacher.)”. If he fails to detach “那个老师 (that teacher)” from “知道(knows)”, he will probably define the sentence as unacceptable one. Therefore, since the processing of moved topics is more complicated than base-generate topics in complement clause, native speakers may more easily accept base-generated topics rather than moved topics.

## 7. CONCLUSION

### 7.1 Summary of the study results

This study investigated L1 Chinese and L2 English speakers’ acceptability of Chinese topic-comment constructions and came to the following conclusions. First, the type of topic, the position of topic and L2 English proficiency all can exert influence Chinese native speakers’ acceptability of Chinese topic-comment construction. The type of the topic as well as the position of the topic both have main effect on Chinese native speakers’ acceptability of topic-comment construction. Proficiency has no main effect on Chinese native speakers’ perception of topic-comment construction. Second, interaction effect of proficiency and position and interaction effect of type and position were found. Third, during Chinese native speakers’ processing of the topic-comment sentences, especially when they process sentences in which topic is in complement clause, it seems that they would like to adopt late closure strategy and minimal attachment strategy, which leads to misunderstanding about these sentences. Because of it, compared to topics in matrix clause, topics in complement clause are more unacceptable for them. Forth, backward transfer from English to Chinese also seems to take effect. For the Chinese native speakers with high English proficiency, they are familiar with English garden

path sentences. When they deal with Chinese garden path sentences, they appear to transfer the strategy used in English to Chinese, which contributes to their correct comprehension of these sentences. Besides, because of the backward transfer From English to Chinese, the high English proficiency group seems to have unlearned the topic-initially-placed feature of Chinese topic-comment construction, which contributes to their understanding of the sentence that topic is placed in complement clause. For the Chinese native speakers with low English proficiency, the transfer seems not to have happened. Thus, when dealing with sentences in which topic is in complement clause, the acceptability is lower than that when they deal with the sentence that topic is in matrix clause.

## 7.2 Limitations and suggestions

During the study, certain limitations need to be recognized. First, this study only includes 52 participants, who are 28 Chinese native speakers of high English proficiency and 24 Chinese native speakers of low English proficiency. The number of participants seems not big enough. To make the result more representative and persuasive, more participants need to be included. Second, this study classifies the high proficiency group and low proficiency group according to their scores in TEM 4, TME 8, CET4 and CET 6. Although the scores can roughly represent their English proficiency, yet to be more accurate and scientific, a pretest is required to test their English proficiency. Third, concerning the domestic situation in China, nearly all the English majors have to learn a third language. The third language may also influence their use of native language. Therefore, when investigating the backward transfer from English to Chinese, the participants' third language also needs to be considered.

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## APPENDIX A

### EXPERIMENT SENTENCES

#### **Type I: base-generated topic plus matrix clause**

那场大火，幸亏消防员来得及时。

这则报道，民众反应很强烈。

你闯的祸，你应该承担责任。

智能手机的研发，华为正在追赶苹果公司。

这次运动会，小明赢得了三枚金牌。

《流浪地球》，电影版比小说更精彩。

公司的发展，每个人都应付出努力。

她的陈述，谎言远多于真相。

这条龙，眼睛雕刻得很传神。

外语学习，勤奋比天分更重要。

乒乓球比赛，中国强于美国。

这次事故，官方拒绝承认错误。

这个议题，参会议员们意见不一。

这次交易，甲乙双方都违背了约定。

这个项目，每个成员都应有所贡献。

#### **Type II: base-generated topic plus complement clause**

数据显示，这则报道，民众反应很强烈。

班长觉得，你闯的祸，你应该承担责任。

目击者感叹，那场大火，幸亏消防员来得及时。

业界认为，智能手机的研发，华为正在追赶苹果公司。

校长宣布，这次运动会，小明赢得了三枚金牌。

影迷们评论，《流浪地球》，电影版比小说更精彩。

老板认为，公司的发展，每个人都应付出努力。

法官认为，她的陈述，谎言远多于真相。

观赏者们赞叹，这条龙，眼睛雕刻得很传神。

事实表明，外语学习，勤奋比天分更重要。

体育迷都知道，乒乓球比赛，中国强于美国。

媒体报道，这次事故，官方拒绝承认错误。

发言人宣称，这个议题，参会议员们意见不一。

法院判定，这次交易，甲乙双方都违背了约定。

老师强调，这个项目，每个成员都应有所贡献。

### **Type III: moved topic plus matrix clause**

那个老师，大家都不喜欢。

很多选择，孩子无法自己决定。

超级大国，一些小国家都想巴结。

此次联谊，所有同学都必须参与。

去年的舞会，班里没一个人出席。

他的为人，老板很讨厌。

这款电脑，没人愿意买。

那个提议，会长不再考虑。

那场车祸，大家都不愿提起。

此次作业，大家要认真对待。

村庄的秘密，村民们都闭口不谈。

麦当劳的蛋挞，小胖很喜欢吃。

那道奥数题，博士都解不出来。

他的血型，他自己都不清楚。

高考结果，考生们都很在意。

#### **Type IV: moved topic plus complement clause**

校长知道，那个老师，大家都不喜欢。

我们知道，很多选择，孩子无法自己决定。

政治家评论，超级大国，一些小国家都想巴结。

班长通知，此次联谊，所有同学都必须参与。

他谈到，去年的舞会，班里没一个人出席。

同事们看出，他的为人，老板很讨厌。

销售员担忧，这款电脑，没人愿意买。

秘书宣布，那个提议，会长不再考虑。

他表示，那场车祸，大家都不愿提起。

老师说，此次作业，大家要认真对待。

记者发现，村庄的秘密，村民们都闭口不谈。

奶奶知道，麦当劳的蛋挞，小胖很喜欢吃。

专家宣称，那道奥数题，博士都解不出来。

小明说，他的血型，他自己都不清楚。

我们知道，高考结果，考生们都很在意。

## APPENDIX B

### FILLERS

#### Simple sentence

小明最擅长的运动是篮球。

苹果电脑的质量比较好。

新疆的水果含糖量比较高。

爸爸平时喜欢哼唱民歌。

食堂的韩国料理不太正宗。

中国自古以来崇尚和平。

海南岛是拍照旅游的圣地。

早睡早起有助于身体健康。

科学技术是第一生产力。

中国科幻电影正在崛起。

成都美食遍布大街小巷。

善良的孩子很讨人喜欢。

新闻报道应该实事求是。

海底捞的服务十分周到。

练习书法有助于缓解压力。

广场舞在中国很受欢迎。

他的眼神透露出丝丝忧伤。

喜欢摄影的年轻人越来越多。

投资总是利益与风险并存。

养宠物就要对宠物负责。

《西游记》是部经典的著作。

保护环境应从小事做起。

班主任应严查迟到早退。

春季是流感的高发季节。

大家都对高考信心十足。

小红从小就对爵士舞很着迷。

珠海是个环境优美的城市。

上海是个国际化的大都市。

当代年轻人越来越注重养生。

中国的经济正在蓬勃发展。

### Complex sentence

小明介绍说，他最擅长的运动是篮球。

小张认为，苹果电脑的质量比较好。

大家公认，新疆的水果含糖量比较高。

我记得，爸爸平时喜欢哼唱民歌。

韩国留学生说，食堂的韩国料理不太正宗。

历史表明，中国自古以来崇尚和平。

旅游社介绍，海南岛是拍照旅游的圣地。

医生建议，早睡早起有助于身体健康。

领导人说，科学技术是第一生产力。

影迷们认为，中国科幻电影正在崛起。

外来游客感叹，成都美食遍布大街小巷。

大人们都觉得，善良的孩子很讨人喜欢。

民众认为，新闻报道应该实事求是。

顾客们都赞叹，海底捞的服务十分周到。

爷爷说，练习书法有助于缓解压力。

外媒报道，广场舞在中国很受欢迎。

我看出来，他的眼神透露着丝丝忧伤。

他介绍说，喜欢摄影的年轻人越来越多。

专家提醒，投资总是利益与风险并存。

妈妈提醒，养宠物就要对宠物负责。

大家都公认，《西游记》是部经典的著作。

环保主义者称，保护环境应从小事做起。

校长命令，班主任应严查迟到早退。

医生提醒，春季是流感的高发季节。

老师感觉，大家都对高考信心十足。

他相信，小红从小就对爵士舞很着迷。

珠海人认为，珠海是个环境优美的城市。

外国人感觉，上海是个国际化的大都市。

老一辈人感觉，当代年轻人越来越注重养生。

事实表明，中国的经济正在蓬勃发展。