

## The Meaning of S-topics in Mandarin: a Crosslinguistic Comparison

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Rooth (1985, 1992) proposes the question/answer congruence condition based on alternative semantics: the ordinary semantic value of a question must be the subset of the focus semantic value of its corresponding answer. However, Bürning (1997, 1999) argues that some question/answer constructions in English and German, including partial topics and contrastive topics with the topic accent, which are called S-internal topics (S-topics), do not respect this condition. He proposes that an S-topic induces a topic semantic value, i.e., a set of questions, which includes the original question as one of its members. In addition, he further points out that an S-topic implies an implicit disputable question, which is still under discussion. It should be noted, however, that Chinese is not a stress language, so an S-topic with the topic accent cannot make an infelicitous dialogue felicitous. An S-topic in Chinese needs to be triggered by another contrastive topic or licensed by an adverb like *zhi* 'only'. I will suggest that such a difference is due to the fact that stress in tone languages plays no role in meaning. Moreover, the remaining question implied by a contrastive topic triggered by another contrastive topic should be overtly realized, or further being answered in Chinese.

### 1. Introduction

According to Rooth (1985, 1992), in addition to the ordinary semantic value, a sentence with a focused phrase induces a secondary semantic value, i.e., the focus semantic value, which is represented as  $[[S]]^f$ . A congruent question and answer pair must satisfy the following condition:  $[[Q]]^o \subseteq [[S]]^f$ .<sup>1</sup> However, Bürning (1997, 1999) argues that some question/answer constructions in English and German, including partial topics and contrastive topics, as in (1-4), do not respect this condition.

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<sup>1</sup> Since the focus semantic value of an answer is contextually determined (Rooth 1992, Bürning 1997, 1999), Krifka (2001) points out that the ordinary semantic value of a question is the subset, superset, or equivalent to the focus semantic value of the focus semantic value of the answer. No matter which option is chosen, it does not solve the problem raised by S-topics. I leave it for further research.

- (1) A: What did the pop star wear?  
 B1:# The female pop stars wore [caftans\]<sub>F</sub>.<sup>2</sup>  
 B2: The [/female]<sub>T</sub> pop stars wore [caftans\]<sub>F</sub>.
- (2) A: Was hatten die Popstars an?  
 B1:# Die weiblichen Popstars trugen [Kaftane\]<sub>F</sub>.  
 B2: Die [/weiblichen]<sub>T</sub> Popstars trugen [Kaftane\]<sub>F</sub>.
- (3) A: Which book would Fritz buy?  
 B1:# Well, I would buy [The Hotel New HAMPshire\]<sub>F</sub>.  
 B2: Well, [/I]<sub>T</sub> would buy [The Hotel New HAMPshire\]<sub>F</sub>.
- (4) A: Welches Buch würde Fritz kaufen?  
 B1:# Ich würde [Das Hotel New HAMPshire\]<sub>F</sub> kaufen.  
 B2: [/Ich]<sub>T</sub> würde [Das Hotel New HAMPshire\]<sub>F</sub> kaufen.

(1B1) and (1B2) express the same proposition: *the female pop stars wore caftans*. Their focus semantic values are the same as well:  $\lambda x$  [the female pop stars wore x], which is not the superset of the ordinary semantic value of the question, i.e.,  $\lambda x$  [the pop stars wore x]. The condition on the question/answer congruence proposed by Rooth rules out both (1B1) and (1B2) as felicitous answers for (1A). According to Bürning, (1B2) is a felicitous answer for (1A). (1B2) differs from (1B1) in that the subject NP bears a rising pitch contour (henceforth the topic accent). The contrast between (B1) and (B2) in (2-4) shows the same pattern. He terms this kind of constituents as S-topics.

In Bürning (1997, 1999), two types of topics and focus are distinguished. At any stage of discourse, there is not only a common ground shared by the participants, but also a certain restricted range of possibilities for the conversation to continue. These possibilities are called discourse topics (hereafter D-topics). The most common way to establish a D-topic is to ask a question. Generally speaking, the answer corresponding to the question phrase in a question/answer pair is the focused part while the other part is taken to be background. He further points out that S-topics have some semantic or pragmatic functions. The first one is to be understood "what the rest of the sentence is about or the entity anchoring the sentence to the previous discourse" (Bürning 1999:145), as in (5).<sup>3</sup>

- (5) A: What did you buy on 59th Street?  
 B: On 59th Street, I bought the shoes.

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<sup>2</sup> "/" stands for the rising pitch contour while "\", the falling one.

<sup>3</sup> The topic in (5) is a phrase taken from the previous sentence. Somehow, it is not a contrastive topic. I will not explore its semantic/pragmatic function. For more details, see Bürning (1997, 1999).

The second one is to "narrow down" a given D-topic. This is called the partial topic, as in (1B2) and (2B2). The third one is to "move the conversation away from an entity given in the previous discourse" (Bürning 1999:145). This is called the contrastive topic, as in (3B2) and (4B2). The fourth one discussed by him is the so-called purely implicational topic, as in (6B2).

- (6) A: Did your wife kiss other men?  
 B1: My wife [didn't]<sub>F</sub> kiss other men.  
 B2: [/My]<sub>T</sub> wife [didn't]<sub>F</sub> kiss other men.

Both (6B1) and (6B2) are felicitous answers for (6A). (6B2) differs from (6B1) in that the additional accent on *my* implies that other wives will be considered.

In contrast, no matter what pitch accent (or stress) is put on the S-topics, the felicity of the whole dialogue in Chinese is not improved, as in (7B2). In Chinese, a partial topic must be rescued by an unanswered question, as in (7B3), or by another related answer, as in (7B4), rather than the topic accent.

- (7) A: mingxing xihuan chi shenme shuiguo?  
 star like eat what fruit  
 'What fruit do the stars like to eat?'  
 B1:# (wo zhidao) nan mingxing xihuan chi [pingguo]<sub>F</sub>.  
 I know male star like eat apple  
 '(I know) the male stars like to eat apples.'  
 B2:# (wo zhidao) [nan]<sub>T</sub> mingxing xihuan chi [pingguo]<sub>F</sub>.  
 I know male star like eat apple  
 '(I know) the male stars like to eat apples.'  
 B3: wo zhidao [nan]<sub>T</sub> mingxing xihuan chi [pingguo]<sub>F</sub>,  
 I know male star like eat apple  
 danshi wo bu zhidao [nun]<sub>T</sub> mingxing xihuan chi shenme shuiguo.  
 but I not know female star like eat what fruit  
 'I know the male stars like to eat apples, but I do not know what fruit the female stars like to eat.'  
 B4: wo zhidao [nan]<sub>T</sub> mingxing xihuan chi [pingguo]<sub>F</sub>,  
 I know male star like eat apple  
 [nun]<sub>T</sub> mingxing xihuan chi [juji]<sub>F</sub>.  
 female star like eat orange  
 'I know that the male stars like to eat apples and the female stars like to eat oranges.'

There are three purposes in this paper. I will first explore the meanings of S-topics in Chinese based on Bürning's proposal (1997, 1999). In addition, I will compare the S-

topic constructions in Chinese and English. The difference is due to the stress parameter. Finally, I will follow Bürning's proposal in that a sentence can be divided into three parts: topic, background, and focus, instead of background and focus.

This paper is organized as follows. Section 1 introduces this paper. Section 2 reviews some literature. In section 3, I will propose a plausible analysis for Chinese S-topics. Section 4 concludes this paper.

## 2. Literature review: Bürning (1997, 1999)

In Bürning (1997, 1999), S-topics include the partial topic, the contrastive topic and the purely implicational topic, which are related to the previous discourse in some way, as in (1-4) and (6). They differ from focus in that they carry a rising pitch contour while a focused phrase, a falling pitch contour, as in (8). The text in (8) shows that the PP with a rising pitch contour cannot be the focus of the sentence.

- (8) A: Where did you buy the shoes?  
 B:# [Auf der /NEUNundfünfzigsten Straße]\*<sub>F</sub> habe ich die SCHUHE\ gekauft.

He further points out that the S-topic constructions contradict with Rooth's question/answer congruence condition  $\llbracket Q \rrbracket^o \subseteq \llbracket S \rrbracket^f$ . Take (3) for example. Because the focus semantic value of  $\llbracket 3B1 \rrbracket$  or  $\llbracket 3B2 \rrbracket$  are the same:  $\lambda x$  [I would buy], which is not superset of the  $\llbracket 3A \rrbracket$  :  $\lambda x$  [Fritze would buy]. Although Rooth's condition correctly predicts that (3B1) is not a felicitous answer for (3A), it wrongly rules out (3B2) as a felicitous answer for (3A). A similar contrast exists between (1B1) and (1B2). We leave the contrast between (6B1) and (6B2) for a moment. He further gives a unified analysis for these three types of S-topics. In the sense of Rooth's alternative semantics, he argues that in addition to the ordinary semantic value and the focus semantic value, an S-topic induces a topic semantic value. In this situation, the topic semantic value of a sentence with an S-topic and focus is a set of sets of propositions, i.e., a set of questions. Rooth's question/answer congruence condition is revised as follows.

- (9) Question/Answer Condition  
 The meaning of the question must match one element in the topic value of the answer A (  $\llbracket Q \rrbracket^o \in \llbracket A \rrbracket^t$  ).  
 (Bürning, 1999:148)

In Bürning's analysis, a sentence with an S-topic induces a set of sets of propositions, i.e., a set of questions, as in (10). According to (9), the original question matches one element of the set of the topic semantic value of a sentence containing an S-topic, i.e., the third member. In his analysis, given a question, the answerer does not answer the original one, but a related one. This is called the contrastive topic.

- (10) { {I would buy *War and Peace*, I would buy *The Hotel New Hampshire*, I would buy *The World According to Garp*, ... },  
 {Rufus would buy *War and Peace*, Rufus would buy *The Hotel New Hampshire*, Rufus would buy *The World According to Garp*, ... },  
 { Fritz would buy *War and Peace*, Fritz would buy *The Hotel New Hampshire*, Fritz would buy *The World According to Garp*, ... },  
 { Fritz's brother would buy *War and Peace*, Fritz's brother would buy *The Hotel New Hampshire*, Fritz's brother would buy *The World According to Garp*, ... }, ... }

With this notion in mind, I will examine whether his analysis can be extended to account for the S-topic constructions in Chinese. Let us take the partial topic into consideration first, as in (7). The rising pitch contour cannot make an infelicitous dialogue felicitous. An overt contrastive topic is required. The same felicitous contrast exists in the contrastive topic constructions, as in (11).

- (11) A: Zhangsan yao he shenme?  
 Zhangsan will drink what  
 'What will Zhangsan drink?'  
 B1:# wo yao he [hong cha]<sub>F</sub>.  
 I will drink red tea  
 'I will drink red tea.'  
 B2:# [wo]<sub>T</sub> yao he [hong cha]<sub>F</sub>.  
 I will drink red tea  
 'I will drink red tea.'  
 B3: [wo]<sub>T</sub> yao he [hong cha]<sub>F</sub>,  
 I will drink red tea  
 danshi wo bu zhidao [Zhangsan]<sub>T</sub> yao he shenme.  
 but I not know Zhangsan will drink what  
 'I will drink red tea, but I do not know what Zhangsan will drink.'  
 B4: [wo]<sub>T</sub> yao he [hong cha]<sub>F</sub>,  
 I will drink red tea  
 [Zhangsan]<sub>T</sub> yao he [lu cha].  
 Zhangsan will drink green tea  
 'I will drink red tea and Zhangsan will drink green tea.'

Because of no contrast between (11B1) and (11B2), it seems that the topic accent plays no role in the contrastive topic constructions in Chinese. However, the contrast between (11B1) and (11B3) shows that an unanswered question following the first conjunct with a contrastive topic makes the dialogue felicitous. This question can be further answered, as in (11B4).

Now our attention turns to the purely implicational topic. In this respect, an answer

with or without a following remaining question is a felicitous answer for the original question. However, the sentence with a following contrastive topic implies that other wives are taken into consideration, as in (12B3, 4), while the one without it does not, as in (12B1).

- (12) A: ni de qizi wen qita-de nanhaizi ma?  
 you DE wife kiss other-DE boy Q  
 'Did your wife kiss other boys?'
- B1: wo de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi.  
 I DE wife not-have kiss other-DE boy  
 'My wife did not kiss other boys.'
- B2: [wo]<sub>T</sub> de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi.  
 I DE wife not-have kiss other-DE boy  
 'My wife did not kiss other boys.'
- B3: [wo]<sub>T</sub> de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi,  
 I DE wife not-have kiss other-DE boy  
 danshi wo bu zhidao [ni]<sub>T</sub> de qizi you-mei-you wen qita-de nanhaizi.  
 but I not know you DE wife have-not-have kiss other-DE boy  
 'My wife did not kiss other boys, but I did not know whether your wife  
 kissed other boys.'
- B4: [wo]<sub>T</sub> de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi,  
 I DE wife not-have kiss other-DE boy  
 danshi [ni]<sub>T</sub> de qizi [wen-le]<sub>F</sub> qita-de nanhaizi.  
 but you DE wife kiss-PF other-DE boy  
 'My wife did not kiss other boys, but your wife kissed other boys.'

From the discussion mentioned above, the topic accent in English and German can make a dialogue containing a partial topic or a contrastive topic felicitous. In Chinese, no such topic accent can be utilized to make such dialogues felicitous. A disputable question or another answer is required. However, in all of these languages, an S-topic implies a disputable question. In what follows, I will propose an analysis to account for how to build an S-topic construction in Chinese, and explore the semantic/pragmatic effects of S-topics.

### 3. A plausible analysis

#### 3.1. A theoretical setting

In this section, I will follow Reich's (2007) and Kuo's (2008) analyses for short answers of multiple questions and gapping to build an S-topic construction in Chinese. Moreover, I will follow Bürning's analysis for the semantics/pragmatics of S-topics. Following Roberts (1996), Reich (2007) gives a uniform analysis for short answers and gapping. A short answer is the answer for an explicit salient multiple question, as in (13),

while gapping is another kind of short answers for an implicit salient multiple question, as in (14). In (14), the reconstructed *wh*-question is *who ate what*. At LF, all the *wh*-phrases undergo covert *wh*-movement to CPspec. The ExClo(Q) is  $\exists y \exists x [x \text{ ate } y]$ , which entails FClo(A), i.e.,  $\exists y \exists x [x \text{ ate } y]$ . In this situation, the verb *ate* can be deleted (cf. Kuo 2008). If this analysis is on the right track, it can be extended to account for the issue about S-topics. I will come back to this issue in the next section.

- (13) A: Who bought what?  
 B: John apples, Bill bananas, Jack oranges.
- (14) [JOHN]<sub>F</sub> ate [BREAD]<sub>F</sub>, and [[HARRY]<sub>F</sub> ate [BANANAS]<sub>F</sub>] $\sim$ [ $\Gamma$ ]

Now let us turn to the issue about the meaning of S-topics. In the sense of Rooth's alternative semantics, Bürning (1997, 1999) assumes that in addition to the ordinary semantic value and the focus semantic value, the S-topic in the answer induces a topic semantic value, i.e., a set of sets of propositions or a set of questions, as in (9), repeated below.

- (9) Question/Answer Condition  
 The meaning of the question must match one element in the topic value of the answer A ( $\llbracket Q \rrbracket^{\circ} \in \llbracket A \rrbracket^{\iota}$ ). (Bürning, 1999:148)

Moreover, he argues that an S-topic implies a disputable remnant question. The relevant definitions are defined in (15-17).

- (15) Given a sentence A, containing an S-topic, there is an element Q in  $\llbracket A \rrbracket^{\iota}$  such that Q is still under consideration after uttering A. (Bürning, 1999:150)
- (16) Disputability:  
 A set of propositions P is disputable given a common ground CG, DISP(P, CG), iff there are propositions  $p \in P$  such that p is informative and nonabsurd with respect to CG; formally DISP(Q, CG) iff  $\exists p \in Q: p \cap CG \neq \emptyset \ \& \ P \cap CG \neq \emptyset$ .
- (17) Implicature connected with S-topics in a sentence A:  $\exists q [q \in \llbracket A \rrbracket^{\iota} \ \& \ \text{DISP}(q, CG \cap \llbracket A \rrbracket^{\circ})]$  (Bürning, 1999:151)

With these notions in mind, I will examine whether his analysis can be extended to account for the S-topic constructions in Chinese.

### 3.2. The explanatory reality

#### 3.2.1. The partial topic

As mentioned before, Chinese differs from English in that the topic accent on the S-topic in English can save an infelicitous dialogue. In Chinese, a remaining question or a list of complete answers following the S-topic makes the dialogue felicitous, as in (7B3) and (7B4). Here arises a question: how to build a partial topic construction in Chinese? I will assume here that English or German can build a partial topic construction in terms of the topic accent and implies a disputable question while Chinese builds a partial topic construction only by listing its contrastive part. That is, it is construction-specific. However, there is still a remaining question: how to get a set of questions in the S-topic constructions? In what follows, I will adopt Reich's (2007) and Kuo's (2008) analyses in that the following contrastive conjunct induces an implicit question in the former conjunct.

Take (7B3) for example. Since the question word *shenme shuiguo* 'what fruit' in the second conjunct is the same as the original question. The crucial is that the subject *nun mingxing* 'female stars' in the second conjunct contrasts with the subject *nan mingxing* 'male stars' in the first conjunct. I will assume here that the contrastive topic in the second conjunct, like the contrastive focus in the gapping construction, makes the subject of the first conjunct a contrastive topic. Therefore, the contrastive topic in the second or latter conjunct behaves like the topic accent in English and German. In this situation, the first conjunct gets a topic semantic value, i.e., the set of questions: *who likes to eat what fruit?* It is a set of questions. This set of questions is equal to the set of questions induced by the topic accent in English and German. The focus semantic value of the first conjunct is (18a); moreover, its topic semantic value is (18b). According to Question/Answer Condition (9), the original question matches one element in the topic value of the answer  $A$  ( $[[Q]] \in [[A]]$ ), i.e., the third member.

- (18) a. {the male stars like to eat apples, the male stars like to eat oranges, the male stars like to eat bananas, ...},
- b. { {the male stars like to eat apples, the male stars like to eat oranges, the male stars like to eat bananas, ...},  
 {the female stars like to eat apples, the female stars like to eat oranges, the female stars like to eat bananas, ...},  
 {the stars like to eat apples, the stars like to eat oranges, the stars like to eat bananas, ...}, ... }

Now our attention turns to (7B4). I will assume here that the answers in the first and latter conjunct are the focused parts, since they correspond to the questioned part of the original question. They induce a focus semantic value. In (7B4), *pingguo* 'apple' and



*juji* 'orange' correspond to the questioned part of the original question, *what fruit*. In this situation, The contrastive topic in the second conjunct induces a topic semantic value of the first conjunct. It is a set of questions as well, as in (18b). In this situation, the ordinary semantic value of the question is one of the members of the topic semantic value of the second conjunct, i.e., the third one in (18b).

### 3.2.2. The contrastive topic

After the partial topic construction has been discussed, I will examine whether Bürning's (1999) analysis can be extended to account for the other two S-topic constructions. In this section, I will explore the contrastive topic construction. The felicitous contrast between (11B2) and (11B3) shows that another contrastive topic is required. The embedded clause in the second conjunct contains an unanswered question phrase corresponding to the questioned part of the original question. Therefore, it is the focused part. I will assume here that the contrastive topic in the second conjunct makes the subject of the first conjunct become a contrastive topic. In this situation, it induces a topic semantic value, i.e., a set of questions. The focus semantic value and the topic semantic value of the first conjunct are represented as (19) and (20), respectively.

- (19) {I will drink red tea, I will drink green tea, I will drink coffee,  
I will drink juice, ...}
- (20) {{I will drink red tea, I will drink green tea, I will drink coffee,  
I will drink juice, ...},  
{Zhangsan will drink red tea, Zhangsan will drink green tea, Zhangsan will drink  
coffee, Zhangsan will drink juice, ...},  
{Lisi will drink red tea, Lisi will drink green tea, Lisi will drink coffee, Lisi will  
drink juice, ...},  
{Wangwu will drink red tea, Wangwu will drink green tea, Wangwu will drink  
coffee, Wangwu will drink juice, ...}, ...}

Therefore, the original question is one of the topic semantic value, i.e., the second member, and thereby satisfying Bürning's Question/Answer Condition. (11B4) can be explained in a similar way.

### 3.2.3. The purely implicational topic

In this subsection, let us take a look at the purely implicational topic. (12B1), (12B2), (12B3) and (12B4) are felicitous answers for the question (12A). However, the difference among them is that in (12B3) and (12B4), a contrastive phrase in the second conjunct appears while in (12B1) and (12B2), no contrastive phrase appears. I will assume here that the contrastive phrase in the second conjunct makes the subject of the first conjunct become an S-topic. In this situation, the focus semantic values of the first

conjunct in these four sentences are the same, as in (21a). The topic semantic value of (12B3) or (12B4) is the (21b). Therefore, the original question is equal to (21a), and is one member of the topic semantic value of (21b). Therefore, (12B1), (12B3) and (12B4) are all felicitous answers for (12A). The issue on the semantic/pragmatic difference between them will be discussed in the next section.

- (21) a. {my wife kissed other men, my wife did not kiss other men}  
 b. {{my wife kissed other men, my wife did not kiss other men},  
 {your wife kissed other men, your wife did not kiss other men},  
 {John's wife kissed other men, John's wife did not kiss other men, ...}, ...}

To sum up, English and German use the topic accent to make a dialogue containing an S-topic felicitous, and this topic accent implies a disputable question. In contrast, Chinese uses a contrastive topic construction to make a dialogue containing an S-topic felicitous, and this contrastive topic triggers a disputable question, which should be overtly manifested or answered.

### 3.3. Disputability

In the preceding section, we have shown that the topic accent can build S-topic constructions in English and German while it cannot in Chinese. Chinese S-topic constructions require at least one disputable question or a contrastive answer following it. According to Bürning (1999), this S-topic induces a secondary topic semantic value. His analysis correctly accounts for the semantics/pragmatics of the sentences containing a contrastive topic, a partial topic, or a purely implicational topic. In what follows, I will turn to the issue about the implicature implied by the S-topics.

He argues that an S-topic implies that an unanswered question is still under consideration. In this situation, when the hearer answers (3B1) for the question, (s)he does not answer the asker's question properly. The subject NP *I* in the answer is different from the subject NP of the original question *Fritz*. According to Bürning, an S-topic with the topic accent implies a disputable residual question contained in the topic semantic value, i.e., the third member in (10). This is implied by the topic accent in English and German. On the other hand, since the topic accent cannot save the conjunct with only an S-topic in Chinese, at least one contrastive conjunct with a disputable question or a related answer is required. (11B2) cannot be analyzed as an S-topic construction while (11B3) can. In (11B3), the contrastive topic in the second conjunct contrasts with the subject in the first conjunct. Therefore, the former triggers the latter as a contrastive topic. In this situation, the unanswered question can be analyzed as the implicature implied by the S-topic. As mentioned before, a contrastive topic in Chinese must be triggered by another contrastive topic. In (11B3), the subject in the embedded clause in the second conjunct triggers the embedded subject in the first conjunct as an S-topic. If this is correct, the disputable question corresponds to the third member in (18b). This question can be

further answered as (11B4).

After discussing the contrastive topic, I will examine the implicature implied by the partial topic, as in (7). Like the contrastive topic, the partial topic in Chinese cannot be saved by the topic accent only. A contrastive conjunct is required, as shown by the felicitous contrast between (7B1) and (7B3). The subject *nun mingxing* 'the female stars' in the second conjunct triggers the subject *nan mingxing* 'the male stars' in the first conjunct as an S-topic. In this situation, the partial topic implies a disputable question. It corresponds to the second member in (20).

Finally, I will examine the issue about the purely implicational topic, as in (12B3). Like the contrastive topic and the partial topic, the purely implicational topic in Chinese is triggered by a contrastive topic in the following conjunct. In (12B3), the embedded subject in the second conjunct triggers the subject in the first conjunct as a contrastive topic. According to (15), there is still a disputable question waiting for being answered, which is represented by the embedded clause in the second conjunct. It corresponds to the second member in (21b). It can be further answered, as in (12B4).

From the discussion mentioned above, the topic accent in Chinese cannot make a phrase become an S-topic. An S-topic in Chinese must be triggered by a contrastive phrase in the following conjunct. Moreover, Chinese differs from English and German in that the disputable question must be overtly realized, or answered.

#### 3.4. A remaining problem about *zhi* 'only'

As discussed in the previous section, Chinese, unlike English, requires a contrastive topic in the following conjunct to make a phrase in the preceding conjunct become an S-topic. The sentences in (22-24) do not support this argument.

- (22) A: Zhangsan, Lisi han Wangwu zuotian mai shenme dongxi?  
Zhangsan Lisi and Wangwu yesterday buy what thing  
'What did Zhangsan, Lisi and Wangwu buy yesterday?'
- B1: wo zhi zhidao [Zhangsan]<sub>T</sub> zuotian mai [pingguo]<sub>F</sub>.  
I only know Zhangsan yesterday buy apples  
'I only knew that Zhangsan bought apples yesterday.'
- B2: wo zhi zhidao [Zhangsan]<sub>T</sub> zuotian mai [pingguo]<sub>F</sub>,  
I only know Zhangsan yesterday buy apples  
wo bu zhidao [Lisi han Wangwu]<sub>T</sub> zuotian mai shenme dongxi.  
I not know Lisi and Wangwu yesterday buy what thing  
'I only knew that Zhangsan bought apples yesterday, but I did not know what Lisi and Wangwu bought yesterday.'  
(The partial topic)
- (23) A: Zhangsan yao he shenme?  
Zhangsan will drink what  
'What will Zhangsan drink?'

- B1: wo zhi zhidao [Lisi]<sub>T</sub> yao he [lu cha]<sub>F</sub>.  
 I only know Lisi will drink green tea  
 'I only know that Lisi will drink green tea.'
- B2: wo zhi zhidao [Lisi]<sub>T</sub> yao he [lu cha]<sub>F</sub>,  
 I only know Lisi will drink green tea  
 wo bu zhidao [Zhangsan]<sub>T</sub> yao he shenme.  
 I not know Zhangsan will drink what  
 'I only know that Lisi will drink green tea, but I do not know what  
 Zhangsan will drink.'  
 (The contrastive topic)
- (24) A: ni de qizi wen qita-de nanhaizi ma?  
 you DE wife kiss other-DE boy Q  
 "Did your wife kiss other boys?"
- B1: wo zhi zhido [wo]<sub>T</sub> de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi.  
 I only know I DE wife not-have kiss other-DE boy  
 'I only knew that My wife did not kiss other boys.'
- B2: wo zhi zhido [wo]<sub>T</sub> de qizi [mei-you]<sub>F</sub> wen qita-de nanhaizi,  
 I only know I DE wife not-have kiss other-DE boy  
 wo bu zhidao [ni]<sub>T</sub> de qizi you-mei-you wen qita-de nanhaizi.  
 I not know you DE wife have-not-have kiss other-DE boy  
 'I only knew that [my]<sub>T</sub> wife did not kiss other boys, but I did not know  
 whether your wife kissed other boys.'  
 (The purely implicational topic)

The above three sets of data show that when *zhi* 'only' is inserted, the contrastive phrase in the following conjunct is optional. The question is how *zhi* licenses an S-topic.

#### 3.4.1. A hybrid theory of association with focus proposed by Krifka (2006)

In order to answer this question, we need to examine the meaning of *zhi*. As pointed out in Chomsky (1973), the strongest argument for LF movement for the focused expression is weak crossover effect, which is argued to violate the Leftedness Condition, as in (25) and (26). However, Rooth (1985) argues that the element within an island can be associated with the focusing adverbs like *only*, as in (27a,b).

- (25) a. \*Who<sub>i</sub> did his<sub>i</sub> mother like t<sub>i</sub>?  
 b. \*His<sub>i</sub> mother likes everyone<sub>i</sub>.
- (26) a. His<sub>i</sub> mother likes John<sub>i</sub>.  
 b. \*His<sub>i</sub> mother likes JOHN<sub>F</sub>.

- (27) a. John only bought the books that JOHN<sub>F</sub> gave to Mary.  
 b. John only bought the books that John gave to MARY<sub>F</sub>.

If the focused element in (27a) or (27b) undergoes LF movement, it will violate the island condition. He suggests that the focused element introduces a set of alternatives, which projects upward. In alternative semantics, the focused element does not undergo LF movement. However, Drubig (1994) points out that association with focus does exhibit the island sensitivity, as in (28). In Structure Meaning theory (SM), the LF representation of (28) can be represented as (29).

- (28) Mary didn't invite [the man in a black<sub>F</sub> suit]<sub>FP</sub> to the party  
 a. but she invited the man in a purple<sub>F</sub> suit.  
 b. but the man in a purple<sub>F</sub> suit.  
 c. \*but in a purple<sub>F</sub> suit.  
 d. \*but a purple<sub>F</sub> suit.  
 e. \*but purple<sub>F</sub>.
- (29) LF: Mary  
 didn't [the man in a black<sub>F</sub> suit]<sub>FP</sub> <sub>1</sub>[invite t<sub>1</sub> to the party]]  
 [but [the man in a purple<sub>F</sub> suit]<sub>FP</sub>]

If the sentence with a focus phrase does not contain a focused element, it is ungrammatical, as in (30a). Furthermore, if the focused element does not correspond to the focused element in the preceding clause, it is ungrammatical, as in (30b). In addition, the unfocused elements must stay the same, as in (30c).

- (30) Mary didn't invite [the man in a black<sub>F</sub> suit]<sub>FP</sub> to the party  
 a. \*but (she invited) the man in a purple suit.  
 b. \*but (she invited) the woman<sub>F</sub> in a purple suit.  
 c. \*but (she invited) the woman in a purple<sub>F</sub> suit.

Based on these data, Krifka suggests that the focus operator *zhi* in the apparent counterexamples like (27) involve association with the syntactic island that contains the focused element, which is called the focus phrase (FP). In the structure meaning theory, the syntactic island containing the focused element undergoes movement, which is a case of piped-piping at LF. In this situation, no island violation occurs.

He further explains the semantic contribution of the focused element within the focus phrase.

- (31) a. only liked [the man that introduced Bill<sub>F</sub> to Sue]<sub>FP</sub>  
 b. only liked [the man that introduced Bill to Sue<sub>F</sub>]<sub>FP</sub>

In the first case, the alternatives are men that introduced someone to Sue; in the second case, the alternatives are men that introduced Bill to someone. Given a situation that Greg introduced Bill to Sue, George introduced Ben to Sue, Glen introduced Bill to Sigrid, and John likes Greg and Glen but not George. In this situation, (31a) is true because among the men that introduced someone to Sue, John only likes Greg, while (31b) is false because among the men that introduced Bill to someone, John does not only like Greg but also Glen. Therefore, the focused element within the island does have truth-conditional effect. Based on the above observation, Krifka (2006) proposes a hybrid theory of association with focus. It means that although the focus operator does not associate with the focused element directly, but with the focus phrase, while the focused element within the focus phrase determines the set of alternatives, as claimed in Alternative Semantics. In what follows, I will explore whether this analysis can be extended to analyze the data involving *zhi* 'only' in Chinese.

### 3.4.2. The properties of *zhi* 'only' in Chinese

To begin with, unlike *only*, *zhi* is only an adverb, so it cannot appear directly before the focused NP (cf. Beaver and Clark 2003, Rooth 1985). In this situation, *zhi* in Chinese is an adverb, but not an adnominal modifier or determiner, since it cannot appear immediately before the noun phrase.

- (32) a. *zhi* you Zhangsan<sub>F</sub> mai zhe yi-ben shu.  
 only have Zhangsan buy this one-CL book  
 'Only Zhangsan bought this book.'
- b. \**zhi* Zhangsan mai zhe yi-ben shu.  
 only Zhangsan buy this one-CL book  
 'Only Zhangsan bought this book.'
- c. \*Zhangsan mai *zhi* [zhe yi-ben shu]<sub>F</sub>.  
 Zhangsan buy only this one-CL book  
 'John bought only this book.'
- d. Zhangsan *zhi* mai [zhe yi-ben shu]<sub>F</sub>.  
 Zhangsan only buy this one-CL book  
 'John only bought this book.'

The second property of *zhi* is that the associated part in Chinese can be moved to the preverbal position optionally. (33b,c) seem to support the structural meaning approach, since the focused element moves to the complement of the focusing adverb overtly.<sup>4</sup> We

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<sup>4</sup> The element focused by some focusing adverbs like *zhi* occurs after the focus adverbs while the one focused by some focusing adverbs like *dou* must occur before them. I assume that the former is moved to the complement position of its focusing adverb while the latter is moved to the specifier of its focusing adverb.

can assume that the focused element in (33a) moves to the complement position at LF. I leave the issue on the optionality of overt movement for further research.

- (33) a. Zhangsan zhi kan [xiaoshuo]<sub>F</sub>.  
 Zhangsan only read novel  
 'John only reads novels.'
- b. Zhangsan zhi you [xiaoshuo]<sub>F</sub> cai kan.  
 Zhangsan only have novel CAI read  
 'John reads only novels.'
- c. zhi you [xiaoshuo]<sub>F</sub> Zhangsan cai kan.  
 only have novel Zhangsan CAI read  
 'Only novels, John reads.'

The third property is that when the phrase focused by *zhi* is inside an syntactic island, the whole island, but not the focused element, undergoes overt movement.

- (34) a. zhi you Zhangsan<sub>F</sub> xie de shu, Lisi cai kan.  
 only have Zhangsan write DE book, Lisi CAI read  
 'Lisi only read the books that Zhangsan wrote.'
- b. \*zhi you Zhangsan<sub>iF</sub>, Lisi cai kan t<sub>i</sub> xie de shu.  
 only have Zhangsan Lisi CAI read write DE book  
 'Lisi only read the books that Zhangsan wrote.'

The fourth property of *zhi* is that it does not directly associate with the focused element. Therefore, it should exhibit the island-sensitivity. The grammatical contrast between (35a) and (35b) confirms this, since the whole complex NP island must be coordinated.

- (35) a. Zhangsan zhi mai [<sub>NP</sub> [<sub>CP</sub> [Lisi]<sub>F</sub> xie de] shu],  
 Zhangsan only buy Lisi write DE book  
 bu mai [<sub>NP</sub> [<sub>CP</sub> [Wangwu]<sub>F</sub> xie de shu]].  
 not buy Wangwu write DE book  
 'Zhangsan only buys the books that Lisi writes, but does not buy the books that Wangwu writes.'
- b. \*Zhangsan zhi mai [<sub>NP</sub> [<sub>CP</sub> [Lisi]<sub>F</sub> xie de] shu],  
 Zhangsan only buy Lisi write DE book  
 bu mai [Wangwu]<sub>F</sub>.  
 not buy Wangwu  
 '\*Zhangsan only buys the books that Lisi writes, but does not buy Wangwu.'

The final property of *zhi* is that the focused element, but not the focus phrase, determines the set of alternatives of the focus phrase. This can be shown by the semantic difference among (36a), (36b) and (36c).

- (36) a. Zhangsan zhi zhidao Lisi mai [pingguo]<sub>F</sub>,<sup>5</sup>  
 Zhangsan only know Lisi buy apple  
 bu zhidao Lisi mai [xiangjiao]<sub>F</sub>.  
 not know Lisi buy banana  
 'Zhangsan only knew that Lisi bought apples, but did not know that Lisi bought bananas.'
- b. Zhangsan zhi zhidao [Lisi]<sub>F</sub> mai pingguo,  
 Zhangsan only know Lisi buy apple  
 bu zhidao [Wangwu]<sub>F</sub> ye mai pingguo.  
 not know Wangwu also buy apple  
 'Zhangsan only knew that Lisi bought apples, but did not know that Wangwu bought apples, too.'
- c. Zhangsan zhi zhidao Lisi [mai]<sub>F</sub> pingguo,  
 Zhangsan only know Lisi buy apple  
 bu zhidao Lisi [mai]<sub>F</sub> pingguo.  
 not know Lisi sell apple  
 'Zhangsan only knew that Lisi bought apples, but did not know that Lisi sold apples.'

If the set of alternative is determined by the focus phrase, the sets of alternatives of (36a-c) must be the same. However, they have different truth-conditional effects. Given the situation that *Zhangsan* knew that *Lisi* bought other fruit except apples, (36a) is false, but (36b, c) are true. In contrast, given the situation that *Zhangsan* knew that someone else except *Lisi* bought apples. (36b) is false while (36a, c) are true. Moreover, assuming the situation that *Zhangsan* knew that *Lisi* has some relation to apples, (36c) is false while (36a, b) are true. From the above discussion, we can conclude that the set of alternatives is determined by the focused element, not the focus phrase.

To sum up, from the discussion mentioned above, the following conclusion about *zhi* can be obtained. The first one is that *zhi* is an adverb. The second one is that the focus phrase can optionally move to the complement of the focus operator. These support the structured meaning approach. The third one is that from the coordination test, association with focus exhibits the so-called island-sensitivity. The final one is that although the focus operator does not associate with the focused element directly, the set of alternatives

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<sup>5</sup> The felicity of (36a) and (36c) seems to support that contrastive topics do not need to move to the preverbal positions in Chinese. A similar phenomenon exists in German, as pointed out in Büring (1997).



is determined by the focused element. With these in mind, I will assume Krifka's hybrid theory of association with focus to account for the S-topics of Chinese in the next subsection.

### 3.4.3. *Zhi* licenses S-topics and introduces a residual question

In what follows, I will adopt Krifka's hybrid theory of association with focus to account for the Chinese S-topic issue. That is, *zhi* associates the focus phrase only, but the set of alternatives is determined by the focused element. It has been argued that *zhi* can focus on any element within an island. When a different element is focused, it yields the truth-conditional effect. However, when a D-topic appears, the focused element is fixed.

- (37) a. Zhangsan yao chi shenme dongxi?  
Zhangsan want eat what thing  
'What does Zhangsan want to eat?'
- b. wo zhi zhidao [Lisi]<sub>T</sub> yao chi [pingguo]<sub>F</sub>,  
I only know Lisi want eat apple  
wo bu zhidao [Zhangsan]<sub>T</sub> yao chi shenme dongxi.  
I not know Zhangsan want eat what thing  
'I only knows that Lisi will eat apples, but I do not know what Zhangsan will eat.'
- c. #wo zhi zhidao Zhangsan yao chi [pingguo]<sub>F</sub>,  
I only know Zhangsan want eat apple  
wo bu zhidao [Wangwu]<sub>T</sub> yao chi shenme dongxi.  
I not know Wangwu want eat what thing  
'I only knows that Zhangsan will eat apples, but I do not know what Wangwu will eat.'  
(Contrastive topics)
- (38) a. Zhangsan han Lisi yao mai shenme dongxi?  
Zhangsan and Lisi want buy what thing  
'What will Zhangsan and Lisi buy?'
- b. wo zhi zhidao [Zhangsan]<sub>T</sub> yao mai [pingguo]<sub>F</sub>,  
I only know Zhangsan want buy apple  
wo bu zhidao [Lisi]<sub>T</sub> yao mai shenme dongxi.  
I not know Lisi will buy what thing  
'I only know Zhangsan will buy apples, but I do not know what Lisi will buy.'
- c. #wo zhi zhidao Zhangsan han Lisi yao mai [pingguo]<sub>F</sub>,  
I only know Zhangsan and Lisi will buy apple  
wo bu zhidao [Jialiu]<sub>T</sub> yao mai [xiangjiao]<sub>F</sub>.  
I not know Jialiu will buy banana  
'I only know Zhangsan and Lisi will buy apples, but I do not know Jialiu will buy bananas.'  
(Partial topics)

- (39) a. ni de taitai you-mei-you wen qita de nahaizi?  
 you DE wife have-not-have kiss other DE boy  
 'Did your wife kiss other boys?'
- b. wo zhi zhidao [wo]<sub>T</sub> de taitai mei-you wen qita de nahaizi,  
 I only know I DE wife not-have kiss other DE boy  
 wo bu zhidao [ni]<sub>T</sub> de taitai you-mei-you wen qita de nahaizi.  
 I not know your DE wife not-have-not kiss other DE boy  
 'I only knew my wife did not kiss other boys, but I did not know whether  
 your wife kissed other boys.'
- c. #wo zhi zhidao wo de taitai mei-you wen qita de nahaizi,  
 I only know I DE wife not-have kiss other DE boy  
 ye zhidao [ni]<sub>T</sub> de taitai you-mei-you wen qita de nahaizi.  
 also know your DE wife not-have-not kiss other DE boy  
 'I only knew that my wife did not kiss other boys, but I also knew whether  
 your wife kiss other boys. (Purely implicational topics)

The question is why the focused element of the focusing operator is fixed when a D-topic appears. Take (37c) for example. Since the subject of the original question is the same as the subject of the answer in the first conjunct, and the object is the focused part corresponding to the original question, the adverb *zhi* does not associate with any constituent. It does not induce a disputable question; therefore, it is at odd with the second conjunct. This can be accounted for by Krifka's (2001) assumption that the backgrounds of the first conjunct and the following conjunct must be the same, that is,

$[[FP]]^A$  is equal to  $[[FP']^A$ . The background of the first conjunct is  $\lambda x[Zhangsan \text{ wants to eat } x]$  while the one of the second conjunct is  $\lambda x\lambda y[y \text{ wants to eat } x]$ . In this situation,

$[[FP]]^A$  is not equal to  $[[FP']^A$ . In contrast, the embedded subjects of the first conjunct and the second one are contrastive topics in (37b), so their backgrounds are the same, i.e.,  $\lambda x\lambda y[y \text{ wants to eat } x]$ . Thus,  $[[FP]]^A$  is equal to  $[[FP']^A$ . In addition, the embedded subject is the element focused by *zhi*, so it induces a set of questions, including the original question, thereby satisfying (9). This account for why the S-topic must induce a set of alternatives.

Furthermore, differently from Horn (1996), who argues that the presupposition of the sentence with *only* is the proposition expressed by the sentence without *only*. The assertion part is that all the alternative propositions are equal to the presupposition. This will not account for why an S-topic implies a disputable question. I will not discuss the issue about presupposition induced by *only*. I will suggest that the sentence with *zhi* 'only' implies a negative alternative implicature, as in (40). Therefore, at least an alternative question is still under discussion.

- (40) ONLY(FP)(B)=B(F) $\wedge\forall X\in ALT(FP)[B(X)\rightarrow X=FP]\wedge$ imply:  $\exists Y\in ALT(FP)\wedge Y\neq X$   
 $\wedge [\neg B(Y)]$

In the sense of the hybrid theory of association with focus and (40), (23B1) can be represented as follows.

- (41)  $\llbracket \text{I only } [\text{knows that } [\text{Lisi}]_T \text{ will drink } [\text{green tea}]_F \text{]}_{\text{FP1}} [t_1] \rrbracket$   
 $= \forall X \in \llbracket \text{knows that Lisi will drink green tea} \rrbracket^A [ \llbracket \text{I} \rrbracket (X) ] \rightarrow X = \llbracket \text{knows that Lisi will drink green tea} \rrbracket \wedge$   
 $\text{imply: } \exists Y \in \text{ALT}(\llbracket \text{knows that Lisi will drink green tea} \rrbracket^A) \wedge Y \neq \llbracket \text{knows that Lisi will drink green tea} \rrbracket \wedge \neg \llbracket \text{I} \rrbracket (Y)$   
 $= \forall X \in \{[\text{KNOW}(\text{WILL-DRINK}(\text{GREEN-TEA})(\text{LISI}))]\}$   
 $[(\text{I})(X) \rightarrow X = [\text{KNOW}(\text{WILL-DRINK}(\text{GREEN-TEA})(\text{LISI}))] \wedge$   
 $\text{imply: } \exists Y \in \text{ALT}([\text{KNOWS}(\text{WILL-DRINK}(\text{GREEN-TEA})(\text{LISI}))]) \wedge$   
 $[\neg(\text{I})(Y)]$

To sum up, although a rising pitch contour in Chinese cannot make an infelicitous dialogue felicitous, a contrastive topic or an adverb is required. In this section, I adopt Krifka's (2006) hybrid theory of association with focus to account for why when *zhi* is inserted, no contrastive topic is required, since it can induce a set of alternatives as the topic semantic value.

#### 4. Conclusion

From the preceding sections, we can reach the following conclusion. First, in some languages like English and German, S-topics can be marked with the topic accent while in some languages like Chinese, S-topics cannot. I will suggest that this difference is due to the Stress Parameter. Since German and English are stress languages, stress plays an important role in meaning; however, Chinese is not a stress language, but a tone language, stress plays no role in meaning. In order to express the meaning induced by the S-topic accent in English and German, Chinese S-topic constructions need to be triggered by another contrastive topic or adverbs like *zhi* 'only'. This should be explored by examining other languages. Moreover, an S-topic makes an infelicitous dialogue felicitous, since it induces a topic semantic value including the ordinary semantic value of the original question as its member to satisfy the Question/Answer Condition. Finally, if a sentence contains an S-topic, it should be divided into three parts: Background, S-topic, and Focus, rather than Background and Focus.

## REFERENCES

- Beaver, David and Brady Clark. 2003. *Always and only*: why not all focus-sensitive operators are alike. *Natural language semantics* 11: 323-362.
- Bürning, Daniel. 1997. *The meaning of topic and focus*. London and New York: Routledge.
- Bürning, Daniel. 1999. Topic. In Peter Bosch and Rob van der Sandt (eds.), *Focus: linguistics, cognitive, and computational perspectives*, 142-165. Cambridge: Cambridge University Press.
- Chomsky, Noam. 1973. Conditions on transformations. In S. Anderson and P. Kiparski (eds.), *A festschrift for Morris Halle*. New York: Holt, Rinehart & Winston.
- Drubig, Hans Bernhard. 1994. Island constraints and the syntactic nature of focus and association with focus. Tübingen.
- Horn, Laurence R. 1996. Exclusive company: *only* and the dynamics of vertical inference. *Journal of semantics* 13: 1-40.
- Huang, C.-T. James. 1982. *Logical relations in Chinese and the theory of grammar*. Doctoral dissertation, MIT, Cambridge, Massachusetts.
- Krifka, Manfred. 2001. For a structured account of questions and answers. In Caroline Féry and Wolfgang Sternefeld (eds.), *Audiatur vox sapientiae: a festschrift for Achim von Stechow*, 287-319. Berlin: Akademie-Verlag.
- Krifka, Manfred. 2006. Association with focus phrases. In V. Molnár and S. Winkler (eds.), *The architecture of focus*, 105-136. Berlin: Mouton de Gruyter
- Kuo, Chin-Man. 2008. Licensing conditions on short answers in Mandarin Chinese. paper presented at the Sixteenth Annual Conference of International Association of Chinese Linguistics, Peking University, Peking.
- Reich, Ingo. 2007. Toward a uniform analysis of short answers and gapping. In Kerstin Schwabe and Susanne Winkler (eds.), *On informational structure, meaning and form*, 467-484. Amsterdam: John Benjamins Publishing Company.
- Roberts, Craige. 1996. Information structure in discourse: toward an integrated formal theory of pragmatics. *Ohio University working papers in linguistics* 49: 91-136.
- Rooth, Mats. 1985. *Association with focus*. Doctoral dissertation, University of Massachusetts, Amherst.
- Rooth, Mats. 1992. A theory of focus interpretation, *Natural language semantics* 1, 75-116.