

Syntax (III)
Negative Questions and Their
Answers
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Purpose

This lecture is aimed at explaining/exhibiting

- a. how meaning is derived from syntax in the mainstream linguistic studies
- b. how syntactic analysis is conducted in a real research
- c. why cross-linguistic variation and dialects are important in syntax

Preliminary Preparation: How Syntax is Done

- Three parts of meaning: lexical (conceptual), pragmatic, and semantic (derived from syntax)
- Meaning derived from syntax: feature valuation
- Motivation of merging X with Y: feature valuation

1 Introduction

Although negative questions are widely attested in languages, the ways to answer them differ cross-linguistically. It is argued that there are two systems of answering to negatives questions, one being the polarity based system, illustrated by the English example in (1), and the other being the truth based system, exemplified by the Japanese data in (2).

- (1) Q: Are you not tired? [English]
A1: **No**, I'm not tired.
A2: Yes, I am.
- (2) a. Q: Kimi tukarete nai? [Japanese]
you tired NEG
'Are you not tired?'
A: **Un**, tukarete nai.
yes tired NEG
(Lit.) 'Yes, I'm not tired.'

- b Q: Kare-wa koohii-o noma nai no? [Japanese]
he-TOP coffee-ACC drink NEG
'Does he not drink coffee?'
A: Uun, nomu yo.
no drink PRT
'No, he drinks (coffee).'

The polarity based system: NO for negative answers, and YES to confirm the positive alternation

The truth based system: opposite to the polarity based system.

Two general issues are immediately at hand for the study of syntax:

(3)

- (i) What mechanism enables the particles (like *yes* and *no*) to provide answers to negative questions?
- (ii) What is the underlying reason for the cross-linguistic variation concerning the polarity and truth based systems?

The previous studies on negative questions simply assume that Chinese falls under the truth-based system, and thus the answering of the above two questions can immediately apply to the account of Chinese negative questions.

However, things are more complex than assumed:

(2) Q: 张三不喜欢哲学吗?

A1: 是的 (Zhangsan does not like philosophy)

A2: 不 (是) (Zhangsan likes philosophy)

Simply considering the example (2), we might simply conclude that Chinese just exhibits the property of truth based system. This is true, but the following example of the answers to neutral questions complicate the whole issue:

(3) A: 张三喜欢哲学吗?

Q1: 喜欢 / *? 是的

Q2: 不喜欢 / ?* 不是的

What the above examples reveal is that in Chinese, the answers to neutral questions and negative questions are realised with completely different tools, differing from languages like English which takes positive and negative particles *yes* and *no* for both neutral and negative questions.

As far as we know, the previous studies take the assumption that languages are all like English which use the same tools (particles) for negative questions and neutral questions. The Chinese data above however guide us to reconsider the nature negative questions in particular and yes/no questions in general.

(4) *Why are the particles used to answer negative questions not taken to answer neutral questions?*

Addressing these questions will lead us to study the mechanisms of yes/no questions as well as neutral questions in English and Chinese on the one hand, and the factors that contribute to the variation illustrated above.

2 Holmberg (2012a,b, 2013): A Review

Holmberg's account can be summarised into the following two points:

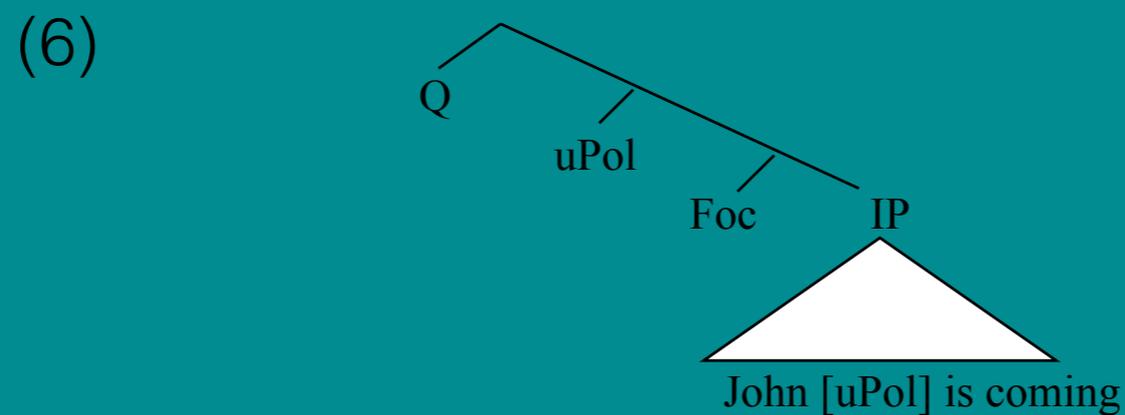
- a. There is a universal structure underlying the syntax of negative questions and their answers.
- b. The parametric variation exhibited by the answers to negative questions reside in the positions of negation head in different languages.

The syntactic structure of a polarity question, be it negative or neutral questions, is as follows:

(5) [Q [x Foc [IP ... x ...]]

In the above structure, x represents a free variable, which is polarity in yes/no questions. In the derivation of a question, the free variable x is the focus, which is thus moved to [Spec FocP] position. The functional head Q above the FocP encodes a request to the addressee to provide a value for the free variable, which is the source of the interpretation as a question. In terms of feature valuation in minimalism, the polarity head in a question takes an unvalued polarity feature [uPol], and the addressee's task is to provide a value to this feature.

(5) can be illustrated below in (6):

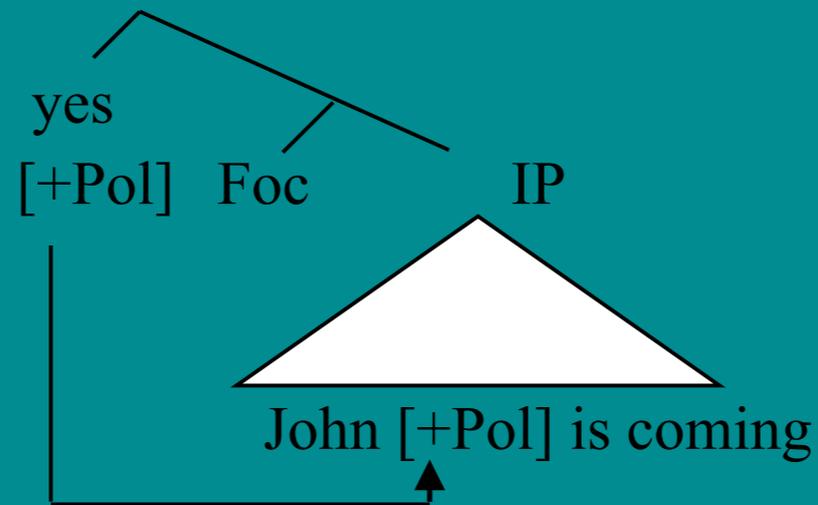


(6) is the structure of the neutral question *Is John coming?*. In the process of derivation, the Polarity head (Pol) is merged in a high position in IP (notated as TP in most of the current literature).

After the derivation of TP, a higher functional head, Focus head (Foc), is merged. Since the free variable encoded by the [uPol] feature on Pol head is the focus, this variable in the shape of [uPol] is moved to the [Spec FocP]. The higher Q head is further merged, requesting the addressee to provide a value to value the [uPol] feature. In English, the answer *yes* or *no*, is merged in the [Spec FocP] position, and provides a value to the [uPol] feature.

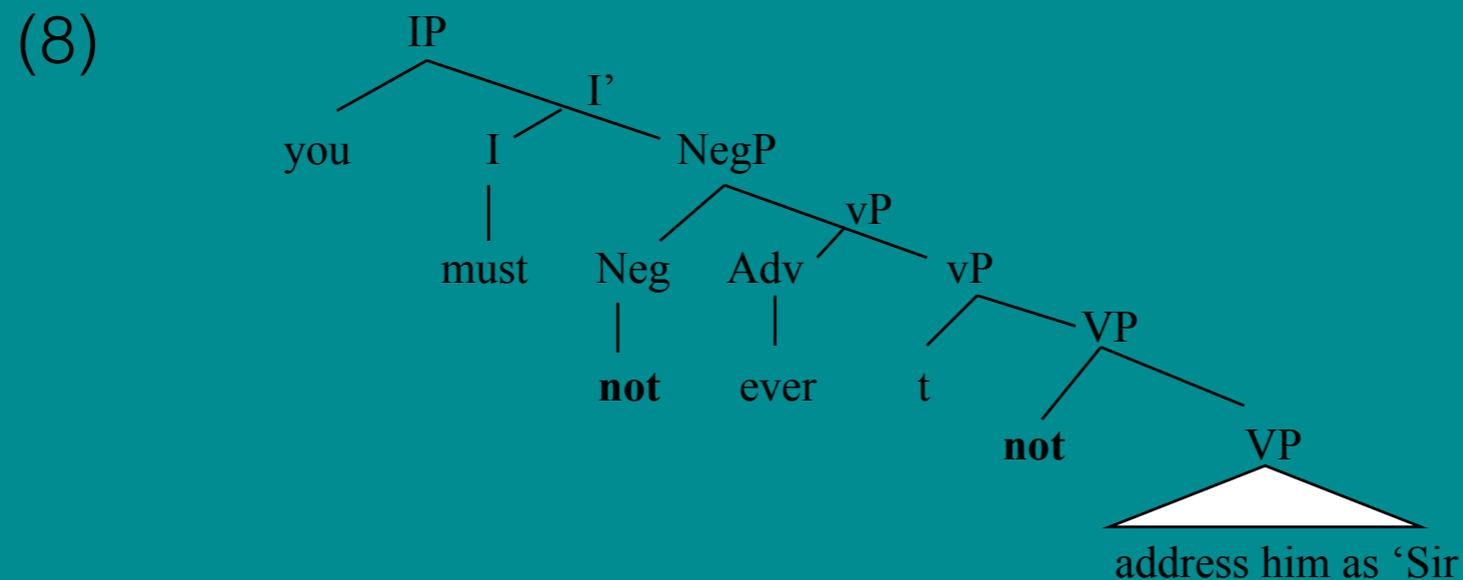
Holmberg further proposes the syntax of answers to polarity questions. The central point is that the answer is in nature a full proposition, which is identical to the proposition expressed by the TP of the question except that the [uPol] feature is valued. Because of this identity, the TP in the answer is elided. The structure of the answer is as follows:

(7)



The answer *yes* provides a positive value [+Pol], the result is that the proposition encoded by IP in (7) has a positive value for the polarity head, that is, the proposition that John is coming is true. This IP is elided in the answer because it is identical to the IP in the question.

Concerning the answers to the negative question, Holmberg assumes that an IP might have two positions for the negation, one being the ‘low negation’ in the VP and the other being the ‘middle negation’ above vP:



For a negative question, there is one negator either in the low position or the high (middle) position. Also as is in neutral questions, there is a Pol head with an [uPol] feature. Above the IP there is a FocP, which triggers movement of the variable with the [uPol] feature. On the top, like the neutral question, there is a Q head, requesting the addressee to provide a value to the [uPol] feature.

- The account of the difference between the polarity based and truth base systems lies in the positions of the negator in the negative question. If the negator is in the high position, then the interpretation of the polarity-based system will be attested. This is because, according to Holmberg (2012a), the high negator is high enough to provide a negative value [-Pol] to the [uPol] feature, which forms a chain with the answer *no*, and also provides the [-Pol] value.
- In (9), for example, both the answer *no* and the negator *not* provide the negative value to the Pol head, which then form a chain. In Holberg (2013), it is assumed that although usually *no* has a value, in cases like (9), it has an uninterpretable feature, which forms a negative concord chain with the negator. This explains the interpretation of polarity-bases system.

- (9)
- Is John not coming?
 - No. ('John is not coming')
 - [_{CP} [no, -**Pol**] Foc [_{IP} he [is, -**Pol**] **not** [_{VP} coming]]]
-

If the negator is in the low position, it cannot assign its value to the Pol head, because of the intervening effect of the adverbial. In this situation, only the particle like *no* can provide the value. The consequence is that within the scope of the negative Pol value, there is a negation, which gives rise to the double negation, i.e. the interpretation of the truth-based system.

- (10) A: Is John sometimes not coming?
Q: No. (It is not the case that John is sometimes not coming)

[no -Pol] Foc [_{TP}John [is, -Pol] [sometimes [_{VP}not coming]]]

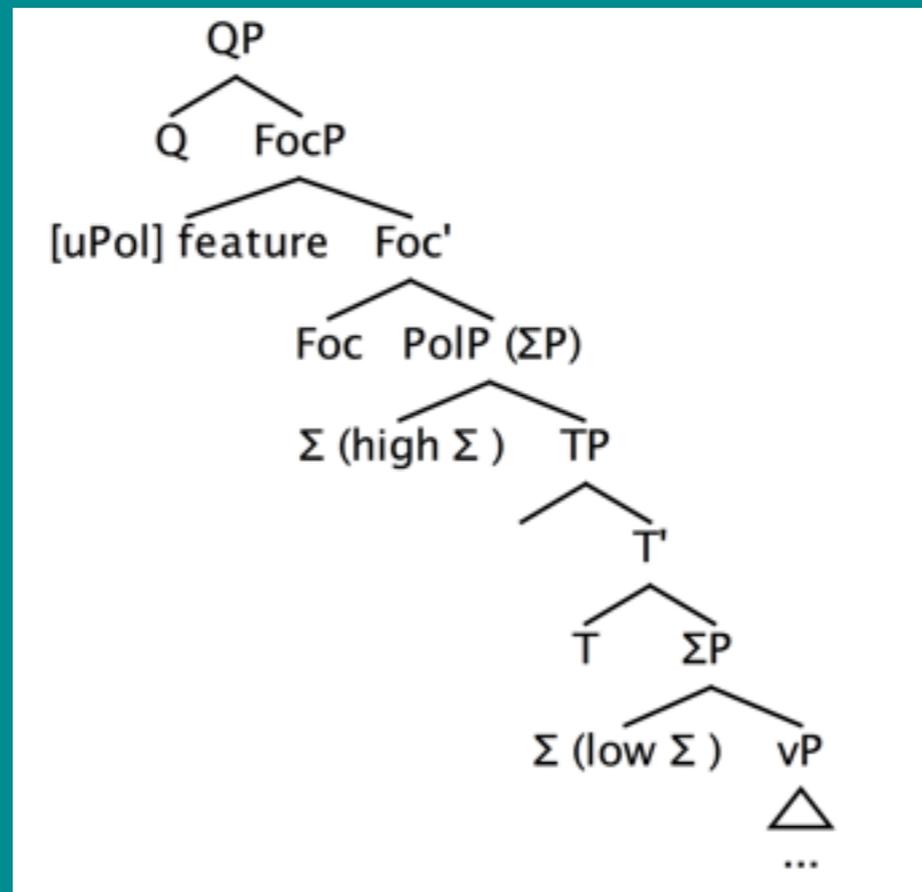
In addition to the fundamental problem that Holmberg's account cannot explain the third research question, there are also theory-internal problems. Although in Holmberg's analysis, as is traditionally held in other studies, *yes* and *no* particles take interpretable [Pol] features, Holmberg also stipulates that sometimes the particle *no* (and its counterparts in other languages) will take an uninterpretable feature. It seems very odd to say *no* does not take an interpretable negative feature. As an functional item selected from the lexicon, within the minimalist framework, it should take interpretable instead of uninterpretable features (cf. Manrantz 1997; Borer 2013).

3 A New Account

3.1 Accounting for English Negative Questions and Their Answers

Following Laka (1994), we assume that any syntactic position that can hold a negative marker (like English *not*) is a polarity head (Σ head). In terms of the feature valuation mechanism in minimalism (cf. Chomsky 1995, 2000), and also following Holmberg (2012a,b, 2013), we argue that a polarity head is specified with an uninterpretable feature [$uPol$]. This assumption then differs from Holmberg's according to which there is only one polarity head, which is different from negation head.

(11)



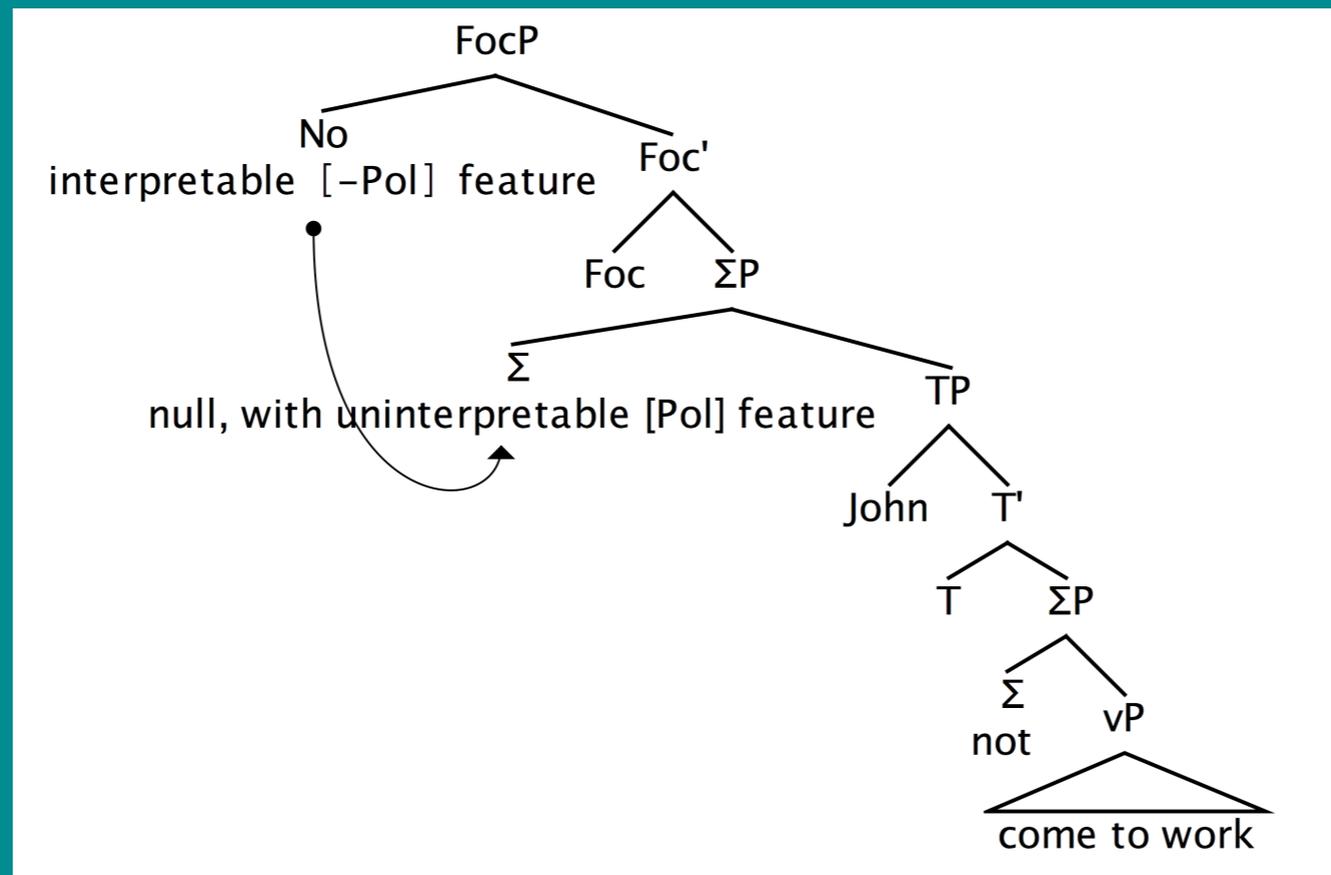
Our proposal is based on two considerations, one being conceptual, and the other being empirical. Conceptually, a negative marker equals with the negative value for a polarity head, and thus where there is a negative marker, there is a functional polarity head. Empirically, this proposal will on the one hand solve the problems involved in Holmberg's account of English negative questions, and on the other addresses the special issues in Chinese negative questions, which will be the concern of this section.

We take the following example to illustrate our points:

- (12) Q: Is John not coming?
A: No. (He is not coming).

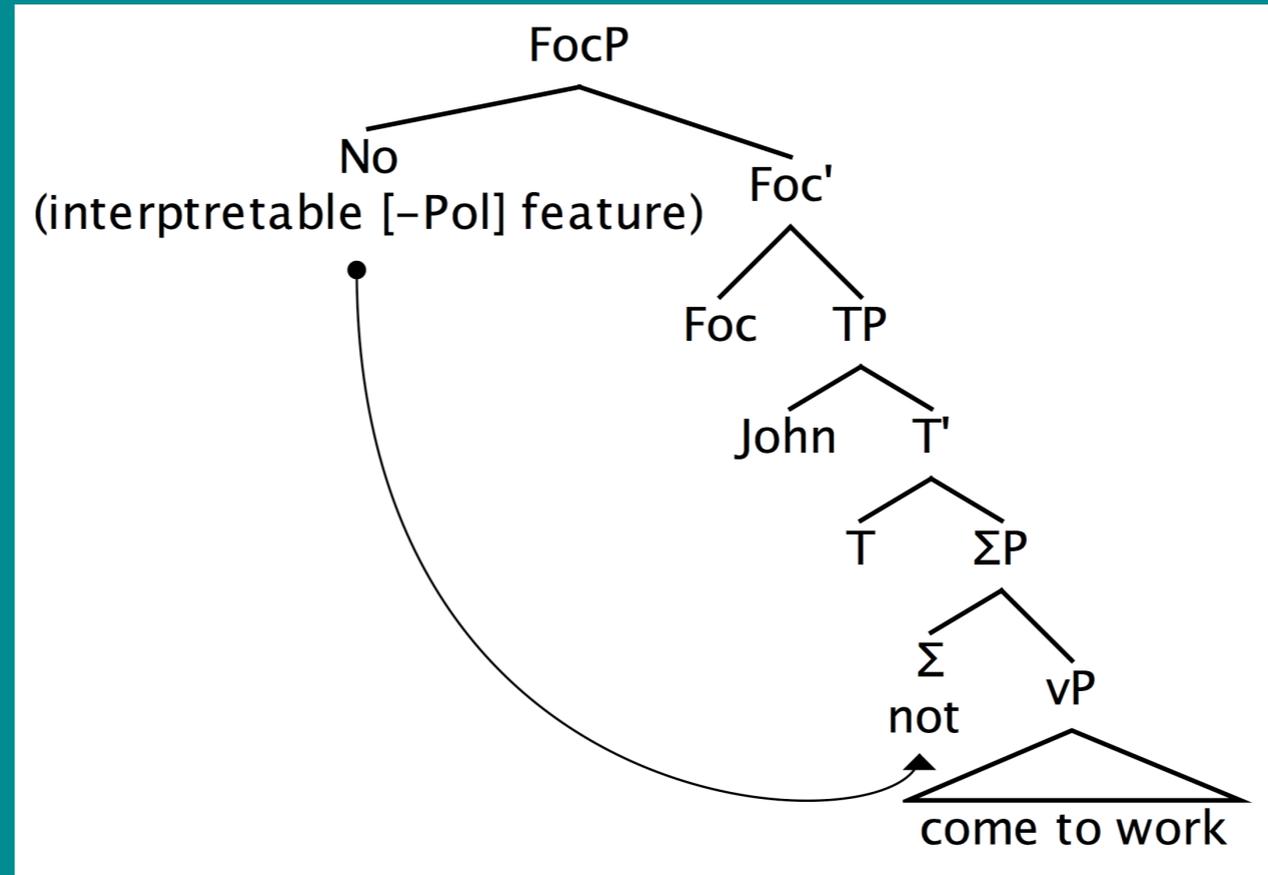
Ideally, there are two possibilities of derivation: in the first possibility, the high Pol head is targeted, and the variable with the [uPol] feature is thus moved from the high Pol head position. In turn, the value provided by the answer will be sent to this high Pol head. The structure is as follows:

(13)



The corresponding interpretation will be that it is not the case that John does not come to work. But the linguistic fact shows that this interpretation does not appear, which then poses a problem to our analysis. The only interpretation, following our explanation, can be derived if the variable in [Spec FocP] position is moved from the low negation position, illustrated by the following tree:

(14)



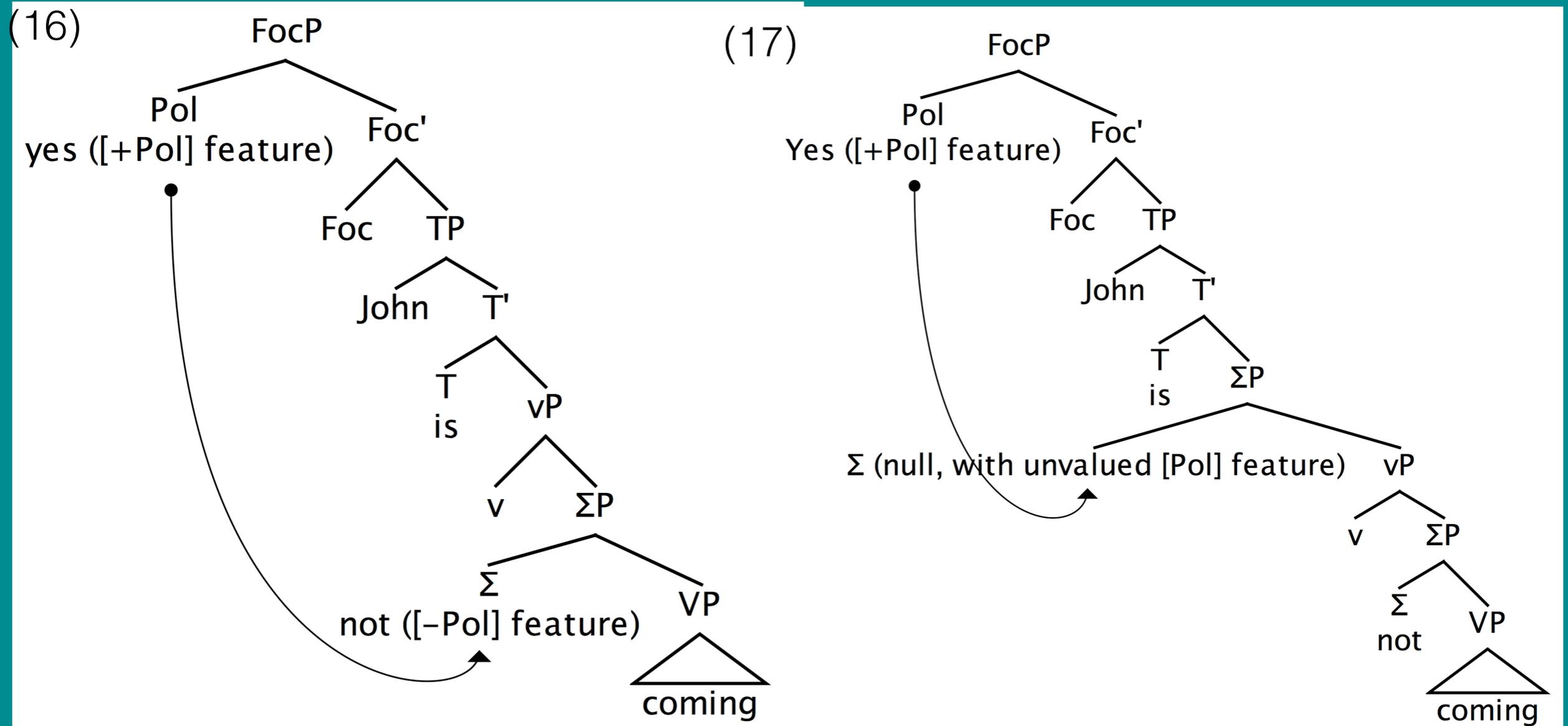
In the above derivation, the variable in [Spec FocP] is moved from the lower Pol head, and thus the [-Pol] feature of the answer *no* is provided to the lower head. Since there is already a negative particle *not* there, which takes the interpretable [-Pol] feature, the [-Pol] feature provided by *no* further confirms the negative interpretation. The interpretation of the whole sentence then is that John does not come to work.

Now the question is why only the derivation in (14) is attested while the interpretation derived by (13) is generally not acceptable. We propose the following general hypothesis to account for this issue:

(15) Other things being equal, if either a phonologically covert or a phonologically overt syntactic object can be the target of a syntactic operation, the overt object is the default target.

This is in line with the principle of economy as well as the mechanism of language acquisition: targeting the phonological overt object is more economical and thus conforms with the principle of efficient computation, an element of the Third Factor in the sense of Chomsky (2005). Returning back to the specific issue of negative questions, for a question like (12), the variable can either be the result of movement from the lower Pol head or the higher Pol head. Since the lower Pol head is already marked with the phonological form *not*, this Pol head will be the default preferred target of the movement triggered by the Foc operator.

The phonologically null Pol head will be targeted, then, if targeting the overt lower head is ruled out by other constraint. This is exactly the case when the answer is *yes* for the question in (12). This is because if the low Pol head is targeted, as is shown in (16), there will be a contradiction, and thus this operation must be ruled out. Therefore, only the situation in (17) is chosen, in which the null Pol head is the target of the variable movement.



3.2 Accounting for Chinese Negative Questions

The issues in Chinese negative questions and their answers:

- i. Chinese the answers to negative questions consistently conforms to the truth-based system;
- ii. The answers to negative questions cannot be applied to normal yes/no questions. Instead, the answers to normal yes/no questions should be the repetition of the matrix verb or the chunk of negative marker plus the matrix verb;
- iii. The answers to negative questions can also be used to answer normal yes/no questions only when the latter involve adverbials.

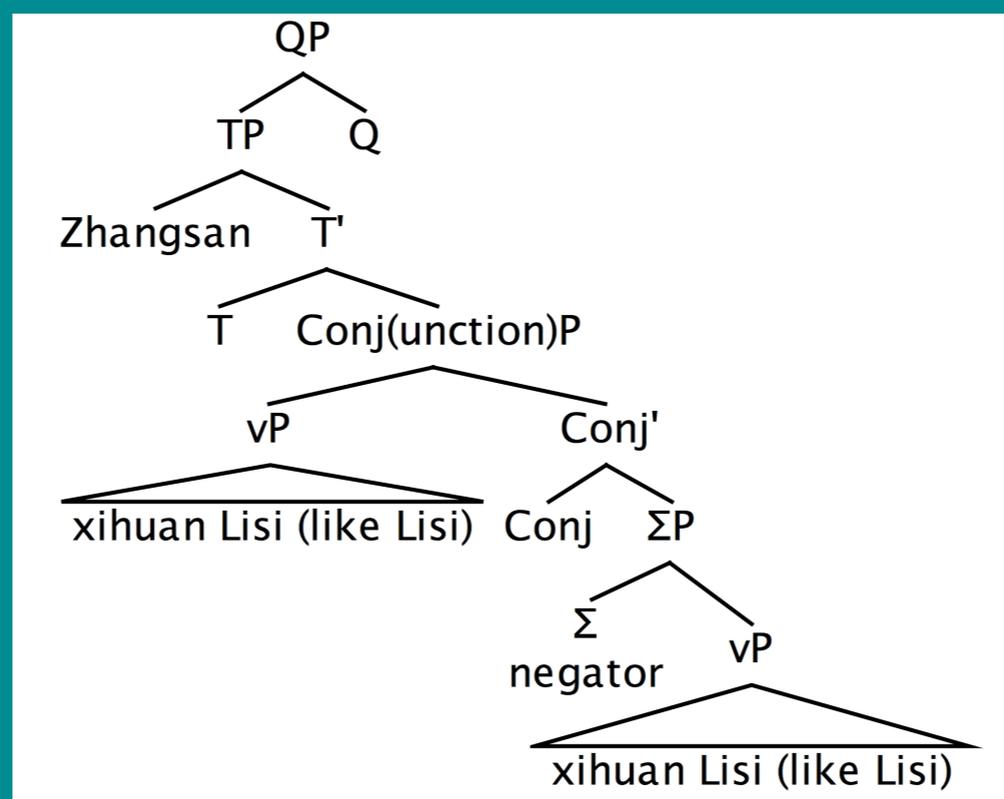
3.2 Accounting for Chinese Negative Questions

The Creation of Open Value in Chinese Yes/No Questions

The creation of an open value of a polarity head ([uPol] feature) for the derivation of a yes/no question is universal, but the way this open value is created varies across languages. In Chinese, like English, two positions are possible for the creation of such an open value, one being high and the other being low. What distinguishes Chinese from English yes/no question is the fact that in Chinese only the low position can create the open value of a negative question.

Recall, in English, the open value is always specified on a single Pol head, either low or high. Chinese, however, can create an open value without resorting to a single head. Instead, a conjunction is employed to create a normal yes/no question (cf Tang 2015). The structure is roughly as follows:

(20)



The question particle, *ma*, then is the spell out form/syncretism of the negative particle and the Q particle, while the VP following the negative particle, due to its identical form with the VP preceding the negative particle, is elided.

The final interpretation then is equivalent to the English yes/not question *Does Zhangsan like Lisi?* But it is obvious that the process of derivation is different. For English, the open value (a variable) is specified on a single Pol head, while for Chinese, the open value is created via a conjunction which allows the addressor to make a choice between two alternatives. This process is the underlying reason for the difference concerning the answers to yes/no questions in these two languages.

In English, a particle which provides a positive or negative Pol feature can be the answer to a yes/no question. But in Chinese, such a particle cannot be a legitimate answer simply because the open value is not specified on a Pol head. To answer a normal yes/no question in Chinese, following the derivation in (21), we have to either utter VP if the positive alternative is chosen, or the Σ P. Following the condition for elision, only V or [negator V] is spelt out in the answer. That's why we only use *xihuan* (like) or *bu xihuan* (not like) to answer the question in (21) while the counterparts of yes/no in Chinese such as *shi/bushi* do not work here, a puzzle that does not seem to find a natural answer either in Holmberg's account or anywhere else.

Why *ma* is a syncretism (fusion) of negator and question particle?

The rich literature on the Chinese particle *ma* agrees on the point that *ma* developed from the negator *wu* in Tang Dynasty.

We assume that originally, *ma* consists of two parts, the negator (something like *me*) and the question particle, something like *a*. This hypothesis can be supported by data from Yixing, a variety of Chinese Wu dialect, which has both fusion version as well as the separate version of the yes/no question particle. In Yixing, *fe* is often used as a negator while *a* is a question particle. A neutral yes/no question can have the following forms:

(21) Zangsa huexi Lisi fe a?
 Zhangsa like Lisi FE A?
 ‘Does Zangsan like Lisi?’

(22) Zangsan huexi Lisi fa?
 Zangsa like Lisi FA?
 ‘Does Zangsa like Lisi?’

It is then obvious in Yixing that the normal yes/no question particle FA is the result of fusion of the negator *fe* and the question particle *a*. It should also be noted here that the answers to such normal yes/no questions are identical to those in Mandarin: we either repeat the verb or the negator plus the verb, showing that the process of derivation is the same in both Yixing and Mandarin in terms of the normal yes/no questions.

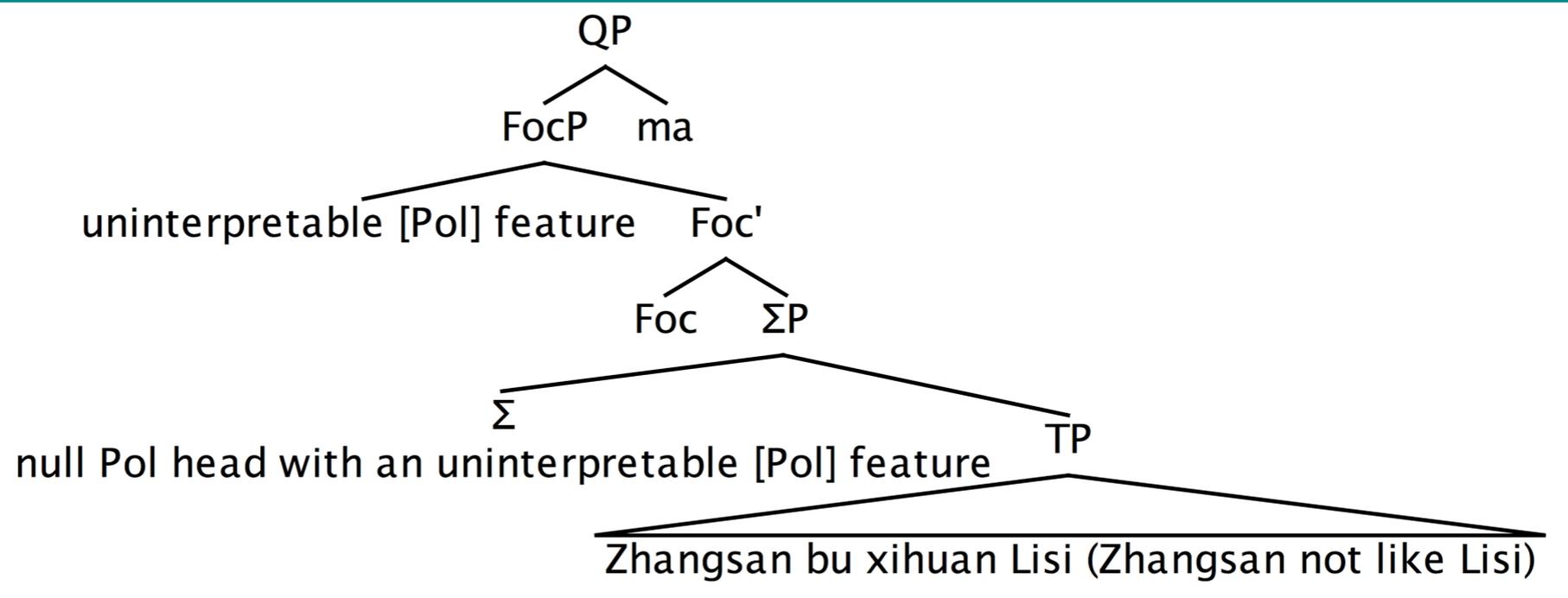
Negative Question in Chinese

We have shown that for a normal yes/no question in Chinese, the open value is created by a conjunction that involves VP. But this strategy cannot apply if a negative question is to be formed, because the strategy of ConjP relies much on the availability of a negator and a question particle. This means that if the ConjP strategy is taken, the coordinated phrase following the Conjunction head **is always a Σ P**. The result is that before and after the conjunction there are the same negated VP, not able to create any open value:

(23) not [like Lisi] or [not like Lisi]

We assume like English, in Chinese there is a high Pol head which can specify an open value, i.e. an uninterpretable [Pol] feature. This strategy is exactly the same with the operation of specifying an open value in the high Pol head. The prediction is that the answers will exhibit the property of the truth-based system.

(24)



In answering the above question, an item with an interpretable [Pol] feature from the lexicon is needed. In Chinese, *shi* and *bu-shi* provide the positive and negative [Pol] feature respectively. If the answer is *shi*, then this particle is inserted in the [Spec FocP] position, providing the [+Pol] feature which then values the uninterpretable Pol feature on the Pol head (the Σ head).

The Double Functions of *Ma*: Evidence from Yixing

Now we provide an explanation for the hypothesis that the particle *ma* in Chinese has at least two functions, one being the syncretism of a negator and a question particle, and the other being a single yes/no question particle.

Our hypothesis is that because of the frequent use of *ma* in normal yes/no questions that take the ConjP strategy to create the open value, it is further taken as a pure yes/no question particle fit in the Q position, which can then be used in negative questions which do not involve the ConjP. Taking *ma* as a pure Q particle for a negative question can be taken as a last resort, considering that no other suitable question particle is available. That in Chinese a particle is taken to denote different functions is not uncommon: the famous particle *le* is a typical example of this situation

The above explanation can be further substantially supported by the yes/no question forms in Yixing. As we have already shown, in Yixing the yes/no question takes the same structure with that of Mandarin. The difference concerning yes/no questions between Yixing and Mandarin lies in the choice of particle. The particle of the normal yes/no question in Yixing is *fa*, which consists of a negator *fe* and a question particle *a*. Unlike Mandarin which has to take the normal yes/no question particle *ma* in a negative question, when a negative question is expressed, always the sentence final particle is *a*, instead of *fa*.

(25) Q: Zangsa fe huexi Lisi a?
 Zangsa not like Lisi A

 'Does Zangsa not like Lisi?'

A1: Si ge
 Yes GE

'yes' (Zangsa does not like Lisi)

A2: Fe si.
 Not Yes

'no' (Zangsa likes Lisi)

The above example shows that the negative question in Yixing and its answers are the same with their counterparts in Mandarin. The only difference is that Yixing does not take the normal yes/no question particle in the negative question. Without going into details, we assume at least two reasons contribute to this phenomenon: firstly, the negator and the question particle can still appear separately, and thus the language acquirer will know that *fa* is not a single Q category. Secondly, in Yixing, the question particle *a* can be a neutral Q category, unlike its counterpart in Mandarin that has to express the speaker's attitude. Therefore, the language system does not need to take *fa* as a last resort to express a negative question.

■ Some Predictions

Since *ma* is taken as a last resort to serve as a pure Q particle in negative questions, we may predict that speakers of Mandarin will gradually take *ma* in a normal yes/no question as a single pure Q category. This is indeed the case. In Mandarin, some speakers do feel at least *shi* and *bu-shi* are marginal as answers to negative questions. The reason, we assume, is that because *ma* is more and more used as a pure Q category, some speakers might take *ma* in a normal yes/no question as ambiguous: the syncretism of a negator and question particle, or a pure Q category. If *ma* is really taken as a single Q category, no ConjP is involved, and thus the Q particle asks the speaker to provide a value to the single Pol head. If this is the case, then, *shi* and *bu-shi* will be the answers. At least currently, *V* and *bu V* are the mostly widely used answers to normal yes/no questions which indicate the existence of ConjP in the question, and thus the primary linguistic input tells the language user that *ma* is a form of syncretism in the normal yes/no question. This explains why the *shi* and *bu shi* answers to the normal yes/no questions are only taken as marginal.

If our account developed so far is on the right track, it can be predicted that in Yixing, the *shi/bu-shi* style answers (*si* and *fe-si* in Yixing) will be taken as completely unacceptable for the normal yes/no questions. This is because the particle *fa* for the normal yes/no question consistently takes the function of the syncretism of negator and the Q particle, and is never taken as a last resort to serve as a pure Q category. This prediction does hold. The Yixing speakers we consult all reject the *si/fe-si* answers to the normal yes/no questions. In addition, other speakers of Wu varieties which exhibit the similar properties of yes/no questions also reject such answers.

Conclusions

Negative Questions in English can target two polarity heads. The targeting of the high polarity head gives rise to the truth based system while the operation on the low polarity head yields the interpretation of the polarity based system.

Chinese differs from English in terms of neutral yes/no questions due to the different ways of creating an open value for creating a question, the former relies upon a Conjunction Phrase strategy and thus rejects the yes/no particles as legitimate answers.

Chinese negative questions only involve a high polarity head, which explains why Chinese only exhibits the truth based system's interpretation. The low open value in Chinese is created via a ConjP strategy, which is fine for the neutral yes/no question, but is blocked in a negative questions.

Take home message: The study of non-standard linguistic varieties can (and should!) be used to reach more generally applicable conclusions.

Thanks for your attention!