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This paper examines different readings of Wh-words (i.e. question-words) in Mandarin Chinese. Following Heim's (1982) proposal on indefinites and Nishigauchi's (1986, 1990) work on wh-words in Japanese, it is proposed that wh-words in Mandarin are indefinite NPs which lack inherent quantificational force. In addition, it is claimed that wh-words in Mandarin are polarity items and thus require the presence of polarity licensers. This analysis leads to an explanation to the lack of indefinite subjects in Mandarin, assuming Diesing's (1990) theory of indefinite NPs and the VP-domain of existential closure.

1. Introduction

In this paper, I discuss different readings that wh-words can have in Mandarin Chinese. Following Nishigauchi's (1986, 1990) work on wh-words in Japanese and Heim's (1982) work on indefinites, I propose that wh-words in Mandarin Chinese are indefinite NPs, which do not have inherent quantificational force. Further, based on the environments in which the indefinite reading of wh-words appears, I propose that wh-words in Mandarin

* This paper comes out of a section on my dissertation. I would like to thank audience in University of Pennsylvania, University of Victoria, Northwestern University as well as audience in ICLL2 for comments and suggestions. I would like to also thank an anonymous reviewer for his/her comments.

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1. Introduction

In this paper, I discuss different readings that wh-words can have in Mandarin Chinese. Following Nishigauchi's (1986, 1990) work on wh-words in Japanese and Heim's (1982) work on indefinites, I propose that wh-words in Mandarin Chinese are indefinite NPs, which do not have inherent quantificational force. Further, based on the environments in which the indefinite reading of wh-words appears, I propose that wh-words in Mandarin

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are polarity items; they need a trigger. Assuming Diesing's (1990) theory of indefinite NPs, I show how each reading of the wh-words can be obtained. I then correlate the lack of indefinite subjects in Mandarin Chinese with the impossibility of interpreting a subject wh-word as a non-interrrogative existential quantifier.

2. Lexical Ambiguities of Wh-words

Wh-words in Mandarin Chinese can be interpreted as interrogative words, existential quantifiers and universal quantifiers. I will discuss the environments in which each reading arises in turn.[1]

2.1. Interrogative Reading of Wh-words

Wh-words are interpreted as interrogative, with or without the particle *ne*, as shown in (1) (see Chao 1968 for a discussion of the particle *ne*) (I will call the particle *ne* a wh-particle since it appears in wh-questions):[2]

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1 I will not discuss cases such as (i) and (ii) (from R. Cheng 1984).

(i) wo xiang chi yidianr sheme.
I want eat one-little what
'I want to eat a little something.'

(ii) you yige shei yao lai kan ni.
have one who want come see you
'There is someone who wants to see you (but I cannot remember his name).'

These cases are not the same as the cases mentioned here. See Li (1992) for other data which appear to have indefinite readings for wh-words but without polarity contexts.

2 The wh-particle *ne* in Mandarin has rarely been mentioned in the literature. See Aoun and Li (1993). whose theory crucially relies on the wh-particle *ne*. For the wh-particle Cantonese, as well as other particles, see Law (1990) for a detailed discussion.

(1) hufei chi-le sheme (ne)

Hufei eat-ASP what Q_{WH}

'What did Hufei eat?'

In (1), the wh-word only has an interrogative reading; any other readings are unavailable. I propose that in wh-questions which do not have the overt wh-particle *ne*, there is a non-overt wh-particle present (see Cheng 1991 for details).

2.2. Wh-words as Existential Quantifiers

As noted by Huang (1982) and R. Cheng (1984) among others, wh-words in Mandarin Chinese can be used as polarity items in affective contexts. I follow Ladusaw (1979) in assuming that a polarity item is an existential quantifier. (2) gives a list of wh-words and the equivalent polarity/existential reading.

(2) (Huang's 108, p. 241)[3]

examples	as question words	as quantifiers
shei	'who'	'anybody'
sheme	'what'	'anything'
na	'which'	'any'
heshi	'when'	'any time'
nali	'where'	'any place'
zeme	'how'	'any way'
weisheme	'why'	'any reason'
A-not-A	'whether A or not'	'no matter whether A or not'

Wh-words are interpreted as existential quantifiers either optionally or obligatorily in the following contexts: under the scope of negation, in yes-no questions (including A-not-A questions) and conditionals:[4]

(3) ni xiang chi sheme ma (= Huang's 112, p. 243)
you want eat what Q_{YN}
'Would you like to eat anything?'
*'For what thing such that you will eat it or not?'

(4) ni xiang-bu-xiang chi sheme (= Huang's 113, p. 243)
you want-not-want eat what
'Would you like to eat anything?'
*'Which of eating or not eating will you do to what?'

(5) ta bu xiang chi sheme (= Huang's 109, p. 242)
he not want eat what
a. 'He didn't want to eat anything.'
b. 'What didn't he want to eat?'

As shown in (3) and (4), wh-words are obligatorily interpreted as existential quantifiers in yes-no questions. In contrast, in sentences with negation, a wh-word can be interpreted either as an existential quantifier or as an

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3 It should be noted that the list in (2) includes the wh-demonstrative *na* 'which', and wh-adjuncts *zeme* 'how' and *weisheme* 'why'. However, a wh-phrase with *na* 'which' cannot be interpreted as an existential quantifier, as we can see in (i):

(i) *hufei hui mai na-yi-ben-shu ma
Hufei will buy which-one-CL-book Q_{YN}
'Will Hufei buy any book?'

Similarly, wh-adjuncts *zeme* 'how' and *weisheme* 'why' cannot be interpreted as an existential quantifier either. See Li (1992) for examples.

4 See Klima (1964) for a discussion on affective environments. For ease of exposition, I use negation and yes-no questions in this discussion. It should be noted that conditionals work the same way. See Huang (1982) and R. Cheng (1984) for examples of conditionals and wh-words.

interrogative word, as shown in (5).

In addition, as Huang (1982) points out, subjects cannot be interpreted as existential quantifiers, as shown in (6) and (7).[5]

(6) *shei xiang chi pingguo ma? (= Huang's 115, p. 244)
who want eat apple Q
'Does anyone want to eat apples?'

(7) *shei xiang-bu-xiang chi pingguo?
who want-not-want eat apples
'Does anyone want to eat apples or not?'

Huang (1982) maintains that subjects in (6) and (7) cannot be interpreted as existential quantifiers because they are not in the scope of an affected element. I will discuss examples such as (6) and (7) in detail later.

2.3. Wh-words as Universal Quantifiers

Besides being able to be interpreted as interrogative and existential quantifiers, wh-words can also be interpreted as universal quantifiers when they occur with the adverb *dou* 'all', as shown in (8) and (9).[6]

(8) botong sheme dou chi
Botong what all eat
'As for Botong, he eats everything.'

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5 See Li (1992) for different judgements. In Li (1992), sentences like (6) are in fact grammatical.

6 The object NP *sheme* 'what' in (8) is not in the object position. (8) consists of an aboutness topic, *Botong,* and a typical topic *sheme* 'what'. See Lee (1986), Chiu (1990) and Cheng (1991) among others for detailed discussions of the element *dou* 'all'.

(9) shei dou kan-guo zhe-ben-shu
who all read-ASP this-CL-book
'Everyone has read this book.'

In (8), the wh-word *sheme* 'what' can only be interpreted as *everything* and similarly, *shei* 'who' in (9) can only be interpreted as *everyone*.

In sum, wh-words in Mandarin Chinese can be interpreted as interrogative words, existential quantifiers or universal quantifiers. I will propose below that wh-words in Mandarin Chinese are indefinite NPs as well as polarity items. I will also argue that there are different binders which determine different quantificational force of the wh-words.

3. Wh-words as Indefinites

Based on the data above, it appears that wh-words in Mandarin Chinese can have different quantificational force: interrogative, existential and universal. They are thus similar to wh-words in Japanese. Nishigauchi (1986, 1990) shows that the quantificational force of wh-words in Japanese varies according to the affix that is attached to the wh-word or to the sentence containing the wh-word, as shown in (10):

(10) a. Dare-ga ki-masu-*ka*
who N come-Q
'Who's coming?'

b. Dare-ga ki-te *mo*, boku-wa aw-a-nai
who-N come Q I-T meet-not
'For all x, if x comes, I would not meet (x).'

c. Dare-*ka*-kara henna tegami-ga todoi-ta
who from strange letter-N arrived
'A strange letter came from somebody.'

As shown in (10a)-(10c), the wh-word *dare* 'who' can be interpreted as interrogative, universal or existential. It is interpreted as an interrogative when there is a sentential -*ka* particle; a universal when there is -*mo* and existential when there is a non-sentential -*ka*.

Assuming Heim's (1982) theory of indefinite NP, Nishigauchi argues that Japanese wh-words are like indefinite NPs in that they do not have inherent quantificational force. Their quantificational force is determined by different binders. I will now briefly review Heim's proposal, as well as Diesing's modification of Heim's theory.

3.1. Heim's Theory of Indefinites

Following Lewis (1975), Heim (1982) argues that indefinites do not have inherent quantificational force. Instead, their quantificational force is determined by other elements with inherent quantificational force including adverbs of quantification, or an interpretive rule. (11) and (12) illustrate that an indefinite can be interpreted as either an existential or a universal quantifier. (11) and (12) are from Heim (1982).

(11) If a man owns a donkey he always beats it.

(12) Sometimes, if a cat falls from the fifth floor, it survives.

(11) and (12) have the paraphrases in (13) and (14).

(13) For every man and every donkey such that the former owns the latter, he beats it.

(14) Some cats that fall from the fifth floor survive.

In (11), both indefinites are interpreted as universal and in (12), the

indefinite NP *a cat* is interpreted as existential. To account for the different interpretation of indefinites in sentences such as (11) and (12), Heim proposes that an indefinite is a variable in the logical sense and that it "never contributes anything more than this variable-reading to the meaning of the sentences in which it occurs,..." (p. 130). Adverbs of quantification (acting as unselective binders, binding more than one element at a time) such as *always* in (11) and *sometimes* in (12) are the ones that bind the variables and determine their quantificational force (cf. Lewis 1975). For indefinites which appear in sentences without overt binders or invisible necessity operators (see Heim (1982) for details), a rule of "existential closure" applies. Existential closure introduces a non-overt existential quantifier to a sentence. For instance, given a sentence such as (15), though there is no adverb of quantification, the indefinite NP *a cat* still gets interpreted existentially.

(15) Every man saw a cat.

Heim proposes that in sentences such as (15), a rule of existential closure introduces a non-overt existential quantifier. Thus *a cat* can be bound by it and be interpreted existentially. For Heim, the rule of existential closure applies to both the sentence as a whole or the text.

Nishigauchi extends Heim's theory of indefinites to account for the interpretation of wh-words. He proposes that wh-words in Japanese are indefinite NPs; they do not have inherent quantificational force. Their quantificational force is determined by the particles. If a wh-word is suffixed with the particle *-ka*, it is interpreted as existential. If the wh-word is in the scope of the particle *-mo*, then it is interpreted as universal. And lastly, if the sentence is marked with the wh-particle *-ka,* then the wh-words are interpreted as interrogative. Hence, the particles are the binders which

determine the quantificational force of the wh-words.

3.2. Diesing (1990)

Diesing's (1990) theory of indefinite NPs differ from Heim's theory in two ways. First, Diesing (1990) argues that indefinites cannot be treated uniformly. That is, it cannot be maintained that indefinites are uniformly without quantificational force. Instead, she proposes that there are two types of indefinites based on two types of readings. I will discuss these two readings shortly below. Second, she follows Kadmon (1987) among others and assumes that the rule of existential closure only applies to the domain of VP and thus existential closure applies only to the elements inside VP in this theory.[7] See Diesing (1990) for a detailed discussion of the VP domain.[8] Thus, an indefinite NP in the Spec of IP, for instance, is not in the scope of the rule of existential closure (I will come back to indefinite subjects in English shortly below).

Let us now turn to the two types of readings associated with indefinite NPs in Diesing's theory. Diesing proposes that one reading is a cardinal reading, which is equivalent to the indefinites that Heim discusses. This is the type that has no inherent quantificational force, and it can be bound by the existential quantifier introduced by existential closure. The other reading

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7 Kadmon (1987) notes that if existential closure applies to text, then sentences like (i) will yield the wrong reading: Oscar owns sheep that Otto vaccinates, indicated in (ii):

(i) Oscar owns sheep. Otto vaccinates them.

(ii) $\exists x$ [sheep (x) $\wedge$ own (Oscar, x) $\wedge$ vaccinate (Otto, x)]

8 For Diesing, the VP-domain corresponds to the 'Nuclear Scope' in Heim's terminology. See both Heim (1982) and Diesing (1990) for the tripartite logical form of a quantified sentence.

is a presuppositional reading, which is equivalent to typical quantifiers and hence is subject to Quantifier Raising (QR). In other words, this is the type that has independent quantificational force. She further correlates these two types of indefinites with Milsark's (1974) semantic distinction between strong and weak quantifiers. The presuppositional reading correlates with strong quantifiers and the cardinal reading correlates with the weak quantifiers.

Consider an example that Diesing uses to argue for the two types of indefinites.

(16) Every violinist plays some variations.

Diesing argues that given a sentence such as (16), there are three possible readings: (a) the indefinite NP has wide scope presuppositional reading; (b) the indefinite NP has narrow scope presuppositional reading; and (c) the indefinite NP has cardinal reading. (17a)-(17c) indicate each reading:

(17)

Presuppositional readings:

a. There is a pre-established list of variations and the violinists all play the same variations. (indefinite NP: wide scope)

[some$_y$ [vars. (y)] every$_x$ [violinist (x)] x played y]

b. There is a pre-established list of variations and each violinist picks a set of variations from this list. (indefinite NP: narrow scope)

[every$_x$ [violinist (x)] some$_y$ [vars. (y)] x played y]

Cardinal reading:

c. Every violinist plays some variations and they are not from a pre-established list of variations. (indefinite NP: narrow scope)

[every$_x$ [violinist (x)] $\exists_y$ vars. (y) $\wedge$ x played y]

In Diesing's theory, the above readings are derived as follows:

In (17a), the first step is to adjoin the subject NP to IP (by QR) and then the object NP undergoes QR and adjoins to IP. Thus, we have the representation in (17d):

(17) d. $[_{IP}$ some vars.$_y$ $[_{IP}$ every violinist$_x$ $[_{IP}$ t_x $[_{VP}$ t_x played $t_y]]]]$

The reading in (17b) is derived similarly with the object NP raised to IP first. The reading in (17c) differs from (17a) and (17b) in that the indefinite NP does not undergo QR. Recall that according to Diesing, indefinite NPs can be either quantificational or non-quantificational. The readings in (17a) and (17b) are readings associated with a quantificational indefinite. In both cases, the indefinite NP has a presuppositional reading and the difference between (17a) and (17b) is that in the former, the indefinite has wider scope than the universal, while in the latter, the indefinite has narrower scope than the universal. In (17c), the indefinite has a cardinal reading. Thus, it is associated with the non-quantificational use of the indefinite NP. Since the indefinite in (17c) is non-quantificational, it does not undergo QR. The rule of existential closure applies and introduces a non-overt existential quantifier which in turn binds the indefinite NP; the latter receives existential force from the existential quantifier.

3.3. Wh-words as Polarity Items

Now we can turn to Mandarin Chinese wh-words. As we have seen, wh-words in Mandarin Chinese are similar to wh-words in Japanese we have seen earlier in that they can be interpreted in three different ways. They can be interrogative words, existential quantifiers and universal quantifiers. From the discussion above on indefinites, it is clear that the behavior of wh-words in Mandarin Chinese is similar to indefinites. Let us consider now how wh-words in Mandarin are similar and different from wh-words in Japanese.

Let us first summarize the data in Mandarin as follows:

(18) a. Q_{wh}.....wh (interrogative reading)

b. $Q_{yes/no}$....wh (polarity/existential reading)

c. Neg.....wh (interrogative or polarity/existential reading)

d. wh.....*dou* (universal reading)

The interpretation of a wh-word varies depending on another element in the sentence. The elements which can determine the reading of a wh-word are: a wh-particle (*ne* or its null counterpart), a yes-no particle (or A-not-A question), a negative marker and *dou* 'the universal marker'. There are no affixes on the wh-words. The wh-particle is associated with the interrogative reading of the wh-words; the yes-no particle and negation are associated with the existential reading while *dou* is associated with the universal reading.

Consider first the existential reading. The environments in which this reading arises fall within the standard polarity environments. The contrast shown in (19a) and (19b) illustrates that the wh-words are polarity items needing a trigger (i.e. they need to be licensed by a polarity trigger).

(19) a. botong kan-wan-le yi-ben wuxia-xiaoshuo
Botong read-finish-ASP one-CL Kungfu-novel
'Botong finished reading a Kungfu novel.'

b. botong kan-wan-le sheme
Botong read-finish-ASP what
'What did Botong finish reading?'
'*Botong finished reading something.'

(19a) shows that an indefinite NP can appear in the object position and it can be interpreted as existential by being bound by existential-closure. In contrast, an existential reading of the wh-words is not possible when a wh-word appears without a negative marker or a yes-no question morpheme, as

in (19b). In (19b), only an interrogative reading is possible.

Comparing (19a) and (19b), it is clear that wh-words are not simply indefinites. It is clear that they differ from indefinites in that they always need to have triggers (e.g. yes-no markers or negation). In other words, they are polarity items. Since they are similar to indefinites in that they lack inherent quantificational force, the question which arises is what contributes quantificational force to the wh-words when they are interpreted as existential quantifiers? Given that the domain of the rule of existential closure is VP, the source of existential force can be due to the rule of existential closure. Thus, when a wh-word is interpreted as an existential, the yes-no particle or negation serves as a trigger and existential closure as the binder.[9] In this analysis, a wh-word in Mandarin Chinese, being a polarity item and an indefinite NP, requires both a trigger (to license it as a polarity item) and a binder (to determine the quantificational force). (20a) and (21a) show examples of wh-words with the yes-no particle *ma* and the negative

9 A question which arises here is why the yes-no marker or negation cannot be the binder for wh-words. Note if the yes-no marker or negation marker serves as binders, the scope of the wh-words will be the same as the yes-no marker or the negation. Take (i) as an example. (i) has a universal quantifier, negation and an indefinite.

(i) Everyone didn't buy a book.

(a) It is not the case that everyone bought a book.

(b) No one bought a book.

Now consider the existential reading of 'a book'. Taking the cardinal reading, the indefinite will be bound by the existential binder that existential closure introduces. However, if negation serves as a binder (e.g. no x, such that x....), then the indefinite 'a book' should have the scope that the negation marker has. But this is simply not the case. This is the same with yes-no questions. Hence, it appears that yes-no markers and negation markers simply cannot serve as binders. It is unclear why they are different from markers for wh-questions, which can serve as binders.

marker. (20b) and (21b) show how they are interpreted.[10]

(20) a. jialuo mai-le sheme ma

Jialuo buy-ASP what Q

'Did Jialuo buy anything?'

b. $Q_{yes/no}$ [$jialuo_x$] $\exists y$ (y a thing) [x bought y]

(21) a. jialuo mei-you mai sheme

Jialuo not-have buy what

'Jialuo did not buy anything.'

b. $\neg$ [[$jialuo_x$] $\exists y$ (y a thing) [x bought y]]

Note that the existential reading of wh-words do not come from an overt binder such as *-ka* in Japanese.

Now consider the interrogative reading. As mentioned earlier, the wh-particle *ne* in Mandarin Chinese is used optionally and when the overt wh-particle *ne* is not present, there is a non-overt one present. Following Nishigauchi's analysis of the interrogative reading, I propose that in cases where the wh-words are interpreted as interrogative, the wh-particle (overt or null) serves as the binder and contributes interrogative force to the wh-words. Thus, the wh-particle (overt or null) in Mandarin Chinese is similar to the wh-particle *-ka* in Japanese. The question which arises here is if wh-words are polarity items, is there a trigger in wh-questions? I suggest here that the wh-particle is both a trigger and a binder for the wh-words. That is to say, given the wh-particle, there is no need to have another trigger. Furthermore, the wh-particle is an unselective binder, just like the Japanese wh-particle *-ka*. It can bind more than one wh-word at a time, as (22) shows:

10 Here, I do not indicate how a yes-no question is in fact interpreted. I keep the yes-no Q-morpheme so that it is clear what the trigger of the wh-word is. See Karttunen (1977) among others for how yes-no questions should be interpreted.

(22) shei mai-le sheme (ne)
who buy-ASP what Q_{WH}
'Who bought what?'

In (22), both *shei* 'who' and *sheme* 'what' are interpreted as interrogative words.

Recall that when a wh-word appears under the scope of negation, it can be interpreted either as a polarity item or as an interrogative word (if there is no overt wh-particle). This can be accounted for based on the analysis proposed here. Since a wh-word is a polarity item, the negative marker can be the trigger with existential closure binding the wh-word and thus we have an existential reading. On the other hand, the presence of a negative marker does not preclude the presence of a null wh-particle, thus it is also possible to have a null wh-particle as the trigger. Since a wh-particle is both a trigger and a binder, a wh-word in a negative sentence can also be interpreted as an interrogative word. Consider the contrast exhibited between (23) and (22) (repeated below):

(22) shei mai-le sheme (ne)
who buy-ASP what Q_{WH}
'Who bought what?'

(23) shei bu xiang mai sheme (ne)
who not-want buy what
a. 'Who didn't want to buy what?'
b. 'Who didn't want to buy anything?'

In (22), both wh-words have to be interpreted as interrogative. But in (23), it is possible for the second wh-word to be interpreted as an existential/

polarity quantifier.[11] The lack of ambiguity in (22) may look surprising at first. If the wh-particle is a trigger (for polarity items), why can't the wh-particle act as the trigger for the wh-words while the existential closure binds the wh-word (and therefore contributes existential force to the wh-word)? Given the contrast between (22) and (23), it appears that when the wh-particle is the trigger for a wh-word, it also serves as the binder of that wh-word. On the other hand, if it is not the trigger of a wh-word, existential-closure can bind the wh-word. Thus, a wh-particle is always a binder for the wh-words it licenses as a polarity item. This can be derived from the Principle of economy of derivation (Chomsky 1989). Consider the situation in which the particle is both the trigger and a binder, then the presence of a wh-particle is sufficient for polarity licensing and for determining the quantificational force of the wh-word. On the other hand, if the wh-particle is present but existential closure introduces a binder, it means that the rule of existential closure applies. Assuming that applying the rule of existential closure is on a par with Move α, then the derivation in which existential closure applies is more costly than the one which involves only the wh-particle. Hence, the rule of existential closure applies only when no other binder is available. In other words, the rule of existential closure applies only as a last resort.[12]

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11 An anonymous reviewer notes that (27) can only be an echo question. However, this is not the case. My judgement and other speakers that I consulted with show two readings, as indicated.

12 A anonymous reviewer notes that if the lack of ambiguity in (26) is explained by the Last Resort Principle, then for examples such as (24), the yes-no marker *ma* should also be used both as a binder and as a trigger since it is more costly to have *ma* as the trigger and existential closure as the binder. However, it should be noted that since *ma* and negation cannot be binders due to their particular properties (see foonote 9), the Last Resort Principle will not preclude a

Lastly, since wh-words in Mandarin Chinese are polarity items, the adverb *dou* 'all' which contributes universal quantification to wh-words has to be both a trigger and a binder also because there is no other trigger in the sentence when *dou* binds a wh-word. Hence, *dou* is similar to the wh-particle in being able to license the wh-words as a polarity item and in determining their quantificational force.

To summarize, wh-words in Mandarin Chinese do not have any inherent quantificational force. In this aspect, they are like indefinites. However, they always need to have a trigger. Thus, they are not simply indefinites. They are polarity items.[13]

4. Indefinites in Mandarin Chinese

Let us now turn to the reason why subject wh-words cannot be interpreted as polarity items, as Huang (1982) points out. Sentences (6) and (7) are repeated below.[14]

(6) *shei xiang chi pingguo ma? (= Huang's 115, p. 244)
who want eat apple Q
'Does anyone want to eat apples?'

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derivation in which the yes-no marker is the trigger and existential closure is the binder.

13 One question which arises given this analysis is whether wh-words in Mandarin still undergo LF wh-movement or not. See Reinhart (1990) and Cheng (1991) for arguments that in-situ wh-words still need to undergo wh-movement at LF to be interpreted properly.

14 An anonymous reviewer notes that there are contexts which allow indefinite subjects. However, it should be noted that in certain contexts, an indefinite subject is really an embedded subject in certain respects. So given the account here, some indefinite subjects can indeed be bound by existential closure introduced to an upper VP, as long as the relationship is local.

(7) *shei xiang-bu-xiang chi pingguo?
who want-not-want eat apples
'Does anyone want to eat apples or not?'

Huang (1982) claims that subject wh-words are not in the scope of a polarity licenser. However, following Tang, T.C. (1989), I assume that question particles such as *ma* and *ne* are generated in C^0. Both the subject and the object of the sentence should be in the scope of the question particles. The same applies to the A-not-A question in (7), assuming that the A-not-A operator is in either Spec of CP or C^0 at LF (see Huang 1989).

Recall that a polarity reading is an existential reading. The generalization here thus is: subjects cannot have an existential reading even when there is a trigger. This is reminiscent of the fact that subjects in Mandarin Chinese cannot be indefinite (Li and Thompson 1981, Duanmu 1988). I will now turn to subjects in Mandarin Chinese and propose an account of why indefinite subjects are not allowed in Mandarin Chinese. This proposal in turn explains why subject wh-words cannot have a polarity/existential reading.

4.1. Indefinite Subjects

Li and Thompson (1981) among others have claimed that Mandarin Chinese subjects are topics. In particular, an indefinite NP cannot appear in the subject position. An unmarked NP (i.e. an NP without a numeral marker) is interpreted as generic. This is shown in (24) and (25).

(24) a. nei-ge-ren lai-le
that-CL-person come-ASP
'That person came.'

b. *yi-ge-ren lai-le
one-CL-person come-ASP
'A person came.'

c. you yi-ge-ren lai-le
have one-CL-person come-ASP
'A person came/there came a person.'

(25) gou xihuan chi dan
dog like eat egg
'Dogs like to eat eggs.'

(24b) shows that an indefinite NP cannot be in the subject position. (24c) shows that the indefinite subject is allowed if *you* 'have' is present (I will come back to (24c) shortly below). In (25), we can assume, following Wilkinson (1986) that there is a generic operator which binds the NP and thus the subject NP in (25) is interpreted as a generic NP.

Now why can't there be an indefinite subject in Mandarin Chinese? Recall that Diesing (1990) claims that there are two types of indefinite NPs: one is non-quantificational and one is quantificational. The former can be bound by existential-closure while the latter can undergo QR. Further, Diesing argues that existential-closure applies only in the domain of VP. Elements which are outside of VP cannot be bound by existential-closure. Assuming this analysis of existential closure, I propose that indefinites in Mandarin Chinese are never quantificational. Thus, an indefinite NP in Mandarin Chinese can never undergo QR. The only way for an indefinite to be interpreted in Mandarin Chinese is to be bound by existential-closure or other overt binders. However, if an indefinite appears in the subject position (outside of VP), it cannot be bound by existential closure since the latter is mapped onto VP. Thus, the ungrammaticality of (24b) follows.

It should be noted that in Diesing's analysis, an indefinite subject in English also has two readings, a cardinal and a presuppositional reading. Since in Diesing's analysis, an indefinite can be quantificational, the presuppositional reading is derived by Quantifier Raising of the indefinite. On the other hand, a cardinal reading requires that the indefinite be non-quantificational and be bound by existential closure. To derive this reading for subjects, Diesing proposes that in English an indefinite in subject position can lower to the Spec of VP at LF and be bound by existential-closure. The question which arises here is why the lowering option is not allowed in Mandarin Chinese. If lowering of an indefinite subject is allowed in Mandarin Chinese, we would expect (24b) to be grammatical since an indefinite in Spec of VP can be bound by existential closure. However, (24b) is not grammatical and it shows that the lowering of an indefinite subject is not permissible in Mandarin Chinese.

If we assume that lowering of the subject at LF is allowed in general, we need to account for why it is not allowed in Mandarin Chinese. In accounting for the behavior of indefinite subjects in Dutch, Diesing (1990) maintains that indefinite subjects in Dutch cannot lower.[15] She assumes following Reuland (1988) that the Spec of IP position in Dutch cannot be empty. We can extend this account to Mandarin Chinese as well. However, I suggest that the lowering of the subjects in Mandarin Chinese is ruled out by the Principle of Economy of Derivation. Consider again (24b) and (24c).

(24) b. *yi-ge-ren lai-le
one-CL-person come-ASP
'A person came.'

15 Though it is possible for Dutch to have indefinite subjects, they have to appear in the VP-internal subject position. In these cases, there is an expletive appearing in the Spec of IP position.

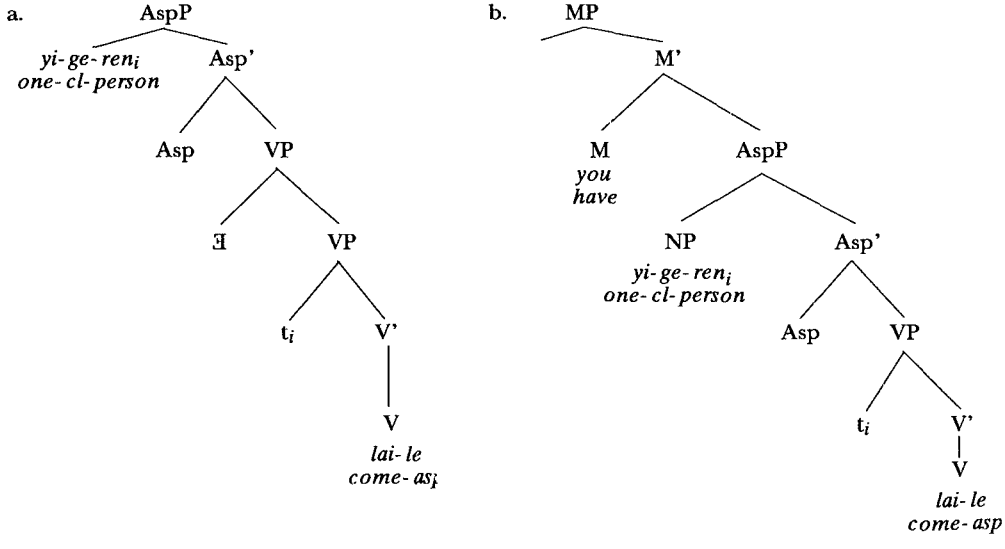
c. you yi-ge-ren lai-le

have one-CL-person come-ASP

'A person came/there came a person.'

I suggest that in (24c), *you* 'have' is comparable to an existential quantifier. It is the binder for the indefinite subject. I follow Huang (1988) in assuming that *you* is a modal which takes an IP (=AspP, in the structure of Mandarin Chinese that I am assuming,) as its complement.[16] Consider the structure of (24b) and (24c) below:

(26)



Following Cheng (1989), Huang (1990) and Tang C.-C. (1990), I assume that a subject NP in Mandarin is base-generated in Spec of VP and then raised to Spec of AspP.[17] Given (26a), if lowering of the subject at LF does

16 I differ from Huang in that I assume the modal *you* 'have' to be generated as a modal head while Huang assumes that it is generated as INFL.

17 See Fukui and Speas (1985), Kitagawa (1985), Kuroda (1989) and Koopman and Sportiche (1988) among others for discussions of the VP-internal subject hypothesis.

not take place, the existential closure cannot bind the indefinite NP. (26b) is the structure of (24c). The modal *you* 'have' heads a modal phrase and it selects an AspP.[18],[19] Given that (24c) is grammatical, the indefinite subject in the sentence receives existential quantificational force. I suggest that the force is contributed by the modal *you* 'have' which is equivalent to an existential closure. In addition, I propose that the availability of sentences such as (24c) precludes lowering of subject NPs in Mandarin Chinese. The lowering of subject NPs is ruled out by the Economy of Derivation: generating a structure such as (24c) with a modal is costless (just as generating any sentence), in contrast with lowering of the subject at LF. Note that the lowering of the indefinite subject, if it were to take place, is to get into the scope of existential closure, thereby receiving existential force. The presence of modal *you* 'have' serves the same purpose, i.e. the indefinite subject can receive existential force from the modal *you*.

In short, indefinite subjects in Mandarin Chinese cannot lower at LF to

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18 One might argue that *you* is in fact an Aspect and it selects a VP. This is however not possible because elements which normally occur between the subject and the VP still appear between the subject and the VP in sentences such as (28c). (i) and (ii) illustrate this.

(i) you yi-ge ren manmande xie-le yi-fong xin
have one-CL person slowly write-ASP one-CL letter
'There is a person who wrote a letter slowly.'

(ii) you yi-ge ren ti wo mai-le yi-ben shu
have one-CL person for me buy-ASP one-CL book
'There is a person who bought a book for me.'

Adverbs such as *manmande* 'slowly' and PP's such as *ti wo* 'for me' appear adjoined to the VP. Hence, given sentences such as (i) and (ii), it is clear that the indefinite subject in these cases cannot be in Spec of VP.

19 Some modals like *you* can appear with verbs which has aspectual markings while some modals cannot. See Tang C.-C. (1990) for a discussion of the difference between epistemic and deontic modals in Mandarin.

Spec of VP and therefore they are not generated under the modal *you* 'have'. They cannot be interpreted, due to the lack of quantificational force.

4.2. Subject Wh-words

Assuming the analysis of indefinites in Mandarin Chinese given above, the impossibility of interpreting subject wh-words as polarity/existential quantifiers follows. As we have seen earlier, wh-words in Mandarin Chinese do not have inherent quantificational force. Thus, they always need a binder. Now consider wh-words appearing in the subject position. A wh-particle can bind a subject wh-word; it is thus legitimate to have a subject wh-word interpreted as interrogative. *Dou* 'all' can also bind a subject because *dou* can serve as a trigger and a binder, as we have seen. Thus, subject wh-words can be interpreted as universal. Can subject wh-words be interpreted as existential? The answer is no because (a) wh-words in Mandarin Chinese are like indefinite NPs; they do not have inherent quantificational force; (b) assuming that indefinite NPs in Mandarin Chinese cannot undergo QR, wh-words in Mandarin Chinese also will not undergo QR, and (c) existential closure applies to the VP domain and lowering of the subject NP to VP is not possible in Mandarin Chinese. Thus subject wh-words cannot be bound by existential-closure.

Hence, even though there are triggers in sentences such as (6) and (7) (in yes-no questions), subject wh-words cannot be interpreted. Thus subject wh-words cannot have a polarity/existential reading.

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