九州大学学術情報リポジトリ
Kyushu University Institutional Repository

# Scope Interaction in Mandarin Chinese

Hsu, Pei-Ling
Graduate School of Humanities, Kyushu University

https://doi.org/10.15017/19612

出版情報：九州大学言語学論集. 31, pp.23-51, 2010. Department of Linguistics, Faculty of Humanities, Kyushu University
バージョン：
権利関係：

# Scope Interaction in Mandarin Chinese*

Pei-Ling HSU
(Graduate School of Humanities, Kyushu University)
hairei@lit.kyushu-u.ac.jp

**Key words**: Scope Interaction, *Wh*-interpretations, *Dou*, Scope Domain

## 1. Introduction

This paper focuses on scope interaction in Mandarin Chinese (abbreviated M.C.). It is often said that scope ambiguity in M.C. is restricted in its surface word order. Compare the English data and Chinese data shown (1) and (2).

(1) *Everyone* bought *a book*. (Cheng 1991,171 (3))
   i. (everyone>a book)
   'For every person x, there is a book that x bought'
   ii. (a book>everyone)
   'There is a book that everyone bought.'

(2) a. *mei-ge ren* dou mai-le *yi-ben-shu*. (Cheng 1991,171 (1))
   every-CL-person DOU buy-Perf one-CL-book
   i. (everyone>a book)
   'For every person x, there is a book that x bought'
   ii. (*a book>everyone)
   *'There is a book that everyone bought.'

* Some of the points in this paper have been presented at the Linguistic Society of Japan 140th held at Tsukuba University from June 19th to June 20th, 2010. I am grateful for the comments from Prof. Masaru Inoue at my presentation, and also thank two anonymous reviewers for their invaluable comments on this paper. I would also like to thank a friend for proofreading. Any errors in this paper are my responsibility.

b. *you yi-ge ren* mai-le *mei-ben shu*. (Cheng 1991,171 (2))
have one-CL person buy-Perf every-CL-book

i. (*every book>a person)
*'For every book x, there is a person who bought x.'

ii. (a person> every book)
'There is a person who bought every book.'

The sentence in (1) is ambiguous: the universal quantifier *everyone* in subject position can be interpreted as having either a wider or a narrower scope than the indefinite NP *a book* in object position in English. However, unlike English, no scope ambiguity is observed in M.C., as shown in (2): subject *mei-ge ren* 'everyone' in (2a) is only interpreted to have a wide scope over the object QP (Quantificational Phrase), and the subject *yi-ge ren* 'a person' in (2b) is interpreted to have a wider scope over the object QP[1]. This lack of ambiguity is generally captured by the Isomorphic Principle assumed by Huang (1982) and Cheng (1991):

(3) Isomorphic Principle (Huang 1982, also see Cheng 1991)
QP in object position can only take a narrower scope than QP in subject position.

However, there is an exception to (3) when it comes to *wh*-words. *Wh*-words always take wider scope over any other scope-bearing Q-expressions in the sentence, such as a negation or a modal (Huang 1982).

(4) *wh*-words and other Q-expression (Huang 1982, 267 (195))

a. Zhangsan *bu* xiang mai *sheme*?
Zhangsan not want buy what

'What doesn't Zhangsan want to buy?' (*wh*>neg)

[1] When *mei-ge* NP 'every NP' appears in subject position, it must co-occur with a universal quantifier *dou*; when an indefinite NP appears in subject position, it must co-occur with a existential quantifier *you* 'have'.

b. Zhangsan *keneng* mai *sheme*?
Zhangsan may buy what

'What might Zhangsan buy?' (*wh*>modal)

Even if it is true that *wh*-words take wider scope over any other Q-expressions, as shown in (4), a universal quantifier *mei-ge ren* 'every NP' in subject position can have wider scope over a *wh*-word in object position and yield a so-called pair-list reading. An example of this is shown in (5). The acceptable reading in (5b) can be accounted for by assuming the Isomorphic Principle (3).

(5) *mei-ge ren* dou mai-le *sheme*? (Cheng 1991,188 (31))
every-CL person DOU buy-Perf what

a. 'What is the thing x such that everyone bought x?'
b. 'For every person x, what is the thing y such that x bought y?'
(Answer: Zhangsan bought apples, Lisi bought tomatoes, ...)

Due to the fact in (5), in which two scope interpretations are allowed, it is reasonable to consider that the phenomenon of scope ambiguity might be allowed in M.C., even if it is not widely observed ((2)). This paper focuses on what scope interpretations there are in M.C. and further investigates the syntactic environments or conditions which allow scope ambiguity. The structure of this paper is organized as follows: in section 2, I show that scope ambiguity exists in Mandarin Chinese. Next, I discuss the types of scope interpretations, in section 3. In section 4, I generalize three types of data and propose syntactic conditions on scope ambiguity. Lastly, I summarize and conclude in section 5.

## 2. Scope Ambiguity

### 2.1. Arguments against Scope Interaction

Cheng (1991) claims that there is no scope interaction between two QPs in M.C., and suggests that *wh*-words always take wider scope than the other QPs in the sentence. The data are shown in (6).

(6) a. *mei-ge xuesheng* dou da-dui-le *na-xie* *wenti*?
every-CL student DOU answer-correct-Perf which-CL question

i. (which questions>every student)
'For which questions x, for every student y, y answered x correctly?'

ii. (*every student>which questions)
*'For every student x, for which questions y, x answered y correctly.'
(Cheng 1991,192 (39))

b. *shei* mai-le *mei-yi-ben* *shu*? (Cheng 1991,188 (32))
who buy-Perf every-one-CL book

i. (who>every book)
'Who is x such that x bought every book?'

ii. (*every book>who)
*'For every book y, who is the one that bought y?'

Both of the sentences in (6) are considered to be unambiguous. The universal quantifier *mei-ge* NP 'every NP' cannot take wider scope over an interrogative *wh*-word, no matter whether *mei-ge* NP 'every NP' appears in subject position or in object position.

However, as we have seen in (5), the sentences including a universal quantifier and a *wh*-word actually can be ambiguous. I repeat (5) in (7).

(7) *mei-ge ren* dou mai-le *sheme*? (Cheng 1991,188 (31))
every-CL person DOU buy-Perf what

a. 'What is the thing x such that everyone bought x?' (wh>every)

b. 'For every x, what is the thing y such that x bought y?' (every>wh)
(Answer: Zhangsan bought apples, Lisi bought tomatoes, ...)

Cheng considers that the pair-list reading shown in (7b) is not derived from scope interaction. *Mei-ge ren* 'everyone' in this case must refer to a specific group and each of the members in that group must be known by the speaker and the listener. In that case, *mei-ge ren* 'everyone' is considered to be a topic and does not have a quantificational force. That is, the wide scope reading of *mei-ge ren* 'everyone' is allowed by pragmatic factors, instead of by scope interaction.

**2.2. Arguments for Scope Interaction**

If the wide scope reading for a universal quantifier *mei-ge* NP 'every NP' is due to it being a topic in the discourse, then we can predict that a topicalized *mei-ge* NP 'every NP' must automatically be able to have a wide scope reading. However, the fact is that the topicalization does not always lead to a wider scope reading for a topicalized QP. As (8) shows, the topicalized object *mei-ben shu* 'every book' is not allowed to be interpreted as having wider scope over the subject *wh*-word *na-xie ren* 'which people'.

(8) (zheli de) mei-ben shu, na-xie ren dou mai-le?
here DE every-CL book which-CL/PL person DOU buy-Perf

a. 'For which people x, x bought all of the books here?'
b. *'For every book x, for which people y, y bought x?'
(Answer: (There are books A, B, C, D) Zhangsan bought book A, Lisi bought book B, Xiaoming bought book C, Ahua bought book D.)

If the topicalized *mei-ben shu* 'every book' in (8) refers to a specific group in the discourse and each of those books is known by the speaker and listener, then the pair-list reading in (8b) should be allowed, as it is in (7b). Since this is not the case, we cannot attribute the wide scope reading (pair-list reading) of the subject *mei-ge ren* 'everyone' in (7) to topicalization and pragmatic reasons. This contradicts Cheng (1991).

After clarifying the fact that the wide scope reading of subject *mei-ge* NP 'every NP' is not simply due to topicalization, the question which arises next is why is a subject *mei-ge* NP allowed to have wide scope reading, while a topicalized object QP is not allowed to? I suggest that the wide scope reading of subject *mei-ge* NP and the lack of wide scope reading of topicalized object *mei-ge* NP are both results of scope interactions with *wh*-words. Their scope relations could be captured by the c-commanding relation (May 1985). Given that subject QP is also topicalized, I suggest that both topicalized subject QP and object QP must be reconstructed in their original positions at LF. It follows that the subject QP at LF c-commands the object *wh*-word, while the object OP at LF is c-commanded by the subject *wh*-word. The LF configurations are

illustrated in (9)[2].

(9) a. LF: reconstruction
[$_{TopP}$ <*meige*-NP> [$_{AspP}$ ***mei-ge*** **NP** Asp$^0$ [$_{vP}$ *v* [$_{VP}$ V ***wh***]]]]
c-command

b. LF: reconstruction
[$_{TopP}$ <*meige*-NP> [$_{AspP}$ ***wh*** Asp$^0$ [$_{vP}$ *v* [$_{VP}$ V ***mei-ge*** **NP** ]]]]
c-command

The pair-list reading is yielded only when the universal quantifier *mei-ge* NP 'every NP' c-commands a *wh*-word at LF, as shown in (9b). This analysis captures the fact that the pair-list reading is allowed only in (7) but not in (8). Likewise, the fact shown in (6b) can be explained in the same way, which is that *mei-ge* NP in object position is c-commanded by the subject *wh*-word and is not allowed to have wide scope reading. The LF is illustrated in (10).

(10) LF: [$_{AspP}$ ***wh*** Asp$^0$ [$_{vP}$ *v* [$_{VP}$ V ***mei-ge*** **NP** ]]]
c-command

As a result, I suggest that the ambiguity in (7) can be attributed to be the result of scope interaction between the subject *mei-ge* NP and the object *wh*-word.

Lastly, we need to explain why the sentence shown in (6a) is not ambiguous. The wide scope reading (pair-list reading) for (6a) is actually possible in the situation where every student must have answered some questions correctly, and the speaker already knows this. (6a) is a sentence which asks what those questions are for each student. That is, a presupposition is needed in these questions. Another similar example is shown (11), in which the speaker knows that everyone has been to some country and he wants to

---

[2] It is also possible to assume that subject *mei-ge NP* 'every NP' does not undergo topicalization. In this case, no reconstruction occurs at LF and the subject *mei-ge NP* 'every NP', staying in its subject position, still c-commands the object element at LF. The configuration would be like (i).

(i) [$_{AspP}$ ***mei-ge*** **NP** Asp$^0$ [$_{vP}$ *v* [$_{VP}$ V ***wh***]]]

know what those countries are, for each person.

(11) mei-ge ren dou qu-guo na-xie guojia?
every-CL person DOU go-EXP which-CL country

a. For which countries x, everyone has been to x.'
(Answer: Everyone has been to Japan.)
b. For each person x, for which countries y, x has been to y.'
(Answer: Zhangsan has been to Japan and China; Lisi has been to U.S. and Canada; Xiaoming has been to Korea, U.S., and Thailand, …)

I consider (6a) and (11) to be as ambiguous as (5)(=(7)), even though a kind of presupposition that the speaker must have a proposition in mind is needed. This intuition is close to Cheng's assumption of treating subject QP as a topic, however, as I have discuss above, topicalization does not always lead to a wide scope reading of a universal quantifier. I believe that the pair-list reading is still derived from scope interaction in syntax.

**3. Scope Interpretations**

I argued, above, that there is scope interaction between *mei-ge* NP and *wh*-words and refuted Cheng's (1991) analysis of topicalization. In this section, I would like to discuss scope interpretations in M.C.

Chierchia (1991) points out there are three interpretations for scope interaction between subject *mei-ge* NP and object *wh*-words in English: individual reading, functional reading and pair-list reading.

(12) What did every student buy? (Okuno and Ogawa 2002, 171 (67))
a. A guitar. (individual reading)
b. His or her favorite musical instrument. (functional reading)
c. John bought a guitar, Bill a piano, and Nancy a violin.
(pair-list reading)

The answer in (12a) is a single answer which refers to a specific individual/entity *a guitar*, while the answer in (12b) does not really refer to a specific individual/entity but implies a set of entities. The former is considered

to be an individual reading and the latter a functional reading. The last reading shown in (12c) is a pair-list reading.

The interpretations of the *wh*-words in M.C. are not really parallel to those in English (12). In this section, I look at the interpretations of *wh*-words and suggest that the functional reading is a default reading for *wh*-words, when a subject universal quantifier *mei-ge* NP co-occurs with an object *wh*-word. I also claim that individual reading in M.C. is allowed only when there is no event involved.

### 3.1. Individual Readings

Fist of all, the sentence with verbs such as *mai* 'buy' only allows functional reading and pair-list reading, as (13) shows.

(13) *mei-ge ren* dou **mai**-le *sheme*?
every-CL person DOU buy-Perf what

'What did everyone buy?'

a. #That (specific) book. (individual reading)
b. A book. (functional reading)
c. Zhangsan bought apples, Lisi bought tomatoes, ... (pair-list reading)

*The book* in (13a) could be the answer, but it can only mean different books with the same name that each person bought, instead of referring to exactly one entity which is bought by everyone. This differs from the individual reading in English shown in (12a).

There is a kind of situation which might make us consider *that book* in (13a) to be an entity, one specific copy of a book. Suppose there are five students who want to buy a specific book at a bookstore. The store has only one copy of the book and allows the first student to purchase and reserve the book. The store then lies to each subsequent student, saying that the book is available, and allows them to purchase the same copy of the book in turn. The end result is that all of the students paid for (=bought) *that book*. This situation made the individual reading possible (*the book* refers to a specific copy of the book), however, it cannot be considered as a genuine individual reading because there are five separate and individual events involved, instead of just one event. The genuine individual reading should be that '*everyone gathered their money and*

*bought* a specific *book*', which is implied in English. Due to this, I claim that the individual reading in (13a) must be distinguished from the genuine individual reading, even though *the book* refers to an individual entity, and I call it a pseudo-individual reading.

Contrary to (13), the individual reading seems to be allowed in some cases in which action verbs are included. This is shown in (14).

(14) a. *mei-ge ren* dou **chi**-le sheme?
every-CL person DOU eat-Perf what

'What did everyone eat?'

i. That (specific) cake.
ii. A (different) cake.
iii. Xiaoming ate a cake; Lisi ate a steak, …

b. *mei-ge ren* dou **she**-le sheme?
every-CL person DOU shoot-Perf what

'What did everyone shoot?'

i. That (specific) big bird.
ii. A (different) bird.
iii. Xiaoming shot a bird; Lisi shot a bear, …

In these sentences the individual readings are possible in interpretations in which everyone starts to do the same thing to the object, like *eating* and *shooting*. The individual *cake* in (14a-i) is interpreted to be eaten one bite at a time or piece by piece, instead of a whole cake at once. Similarly, the individual reading for *the big bird* in (14b-i) is the in the situation where *a specific big bird* is aimed at and shot by multiple people at the same time.

Considering these interpretations again, the object *theme* actually undergoes multiple events. This is similar to (13a), in which the individual reading of *the book* must be interpreted under a special situation where multiple events are required. If the individual reading defined in English is a genuine individual reading and only involves one event, then the individual reading in M.C. shown in (13) and (14) cannot be treated in the same way, since it must involve multiple events. Here I suggest that the individual readings in both (13) and (14) in M.C. are all pseudo-individual readings. The difference between them lies only in the situation types introduced by the predicates. Action verbs

like *chi* 'eat', *she* 'shoot' do not include the end point and the object *theme* is able to undergo repetition. On the other hand, the other type of verbs like *mai* 'buy' and *gaihao* 'build' include end points, and thus the object *theme* is not allowed repetition in the real world. Consequently, the individual reading in (13a) is not easily allowed, based on our knowledge of the real world.

This fact can be further supported by the data in which the individual reading is easily reached when the verb does not involve a real event, such as *dasuan/xiang* 'plan to/want to' and psych-verbs, such as *xihuan* 'like'. The data are shown in (15), respectively.

(15) a. mei-ge ren dou **dasuan/xiang** mai sheme?
every-CL person DOU plan/want buy what

'What does everyone plan/want to buy?'

i. A (specific) guitar (as a birthday present to their father).
ii. A guitar (for him/herself).
iii. Xiaoming plans/wants to buy a guitar, Lisi plans/wants to buy a violin, ...

b. meigeren dou **xihuan** *shei*?
everyone DOU like whom

'Who does everyone like?'

i Zhangsan.
ii. Their teacher.
iii. Xiaoming likes Ahua, Lisi likes his teacher, …

In (15), each person is able to be in the state of planning/wanting to buy a specific individual *the guitar*, or in the state of liking some specific person. These predicates denote a kind of state and only in this case is the genuine individual reading allowed. Since this genuine individual reading in M.C. is restricted to cases where no events are involved, I suggest that we put aside this kind of data from our discussion here. As for how and why the state situation allows the genuine individual reading in M.C., I will leave this question for further research.

### 3.2. Functional Readings and (Pseudo-) Individual Readings

The question I would like to discuss is why the genuine individual reading is not allowed in M.C. when it involves an event situation. According to May (1985) and Chierchia (1991), individual reading must be the case when a *wh*-word takes wider scope over a universal quantifier. If this is the case, then the lack of genuine individual reading could be the result of the *wh*-word not really taking wider scope over the universal quantifier. The pseudo-individual reading in M.C. might be derived from some other mechanism. Here I assume that the mechanism is the same as the one which derives functional readings, that is, a subject universal quantifier is taking wider scope over the object *wh*-word in some way.

Following Chierchia (1991), as shown in (16b), the trace of a *wh*-word is co-indexed with a universal quantifier in subject position. This kind of co-indexing rule distinguishes the functional reading from the individual reading. The individual reading is assumed to be derived when no co-indexing occurs between the trace of a *wh*-word and a universal quantifier, as shown in (16a).

(16). a. Who does every Italian like? (Chierchia 1991 (16))

b. [Who$_i$ every Italian$_j$ [e$_j$ likes t$_i$]] (individual reading)

→{p:p is true and for some x, p=every Italian likes x}

c. [Who$_i$ every Italian$_j$ [t$_j$ like [e$_i^j$]]] (functional reading)

→{p:p is true and for some f, p= every Italian$_y$ like f(y)}

I suggest that in M.C. only functional reading is derived from syntax, whereas the pseudo-individual reading is allowed by pragmatics[3]. That is, *wh*-words in

[3] One reviewer points out that the verb in (16) is a psych-verb, and this might indicate that the individual reading in the case of psych-verbs in M.C. could be derived from the syntax as well. However, the difference between English and M.C. is that the individual reading in English is not restricted by the types of predicates. The analysis suggested in Chierchia (1991) shown in (16) can be used to account for other types of predicates, but I suggest that this derivation account for only predicates involving events in M.C. I will leave the question of how the individual reading is derived for

object position must be co-indexed with a universal quantifier in subject position in M.C., under Chierchia's assumptions. The LF representation and the co-indexing relation must be like (16c), rather than (16b). The individual reading in M.C. is allowed only when a specific *theme* is involved in multiple events or no event. I consider this kind of individual reading to be a pseudo-individual reading which is allowed by pragmatics. My claim is summarized in (17).

(17) a When there is a *wh*-word in object position and a universal quantifier in subject position, the *wh*-word in object position must be bound by the universal quantifier in subject position, which derives a functional reading for the *wh*-word.
b. (Pseudo-) Individual reading for object *wh*-words in M.C. is allowed for pragmatic reasons.

### 3.3. Object Indefinite NPs

The generalizations in (17a) can be captured by the Isomorphic Principle shown in (3), which states that a QP in object position must have narrower scope than a QP in subject position. The accepted individual reading for object *wh*-words does not derive from scope interaction, but is due to pragmatic factors. The similar phenomenon can be observed when we replace *wh*-words with indefinite NPs in object position. The data are shown in (18)-(21).

(18) *mei-ge-ren* dou **mai**-le *yi-ben-shu*. (Cheng 1991,171(1))
every-CL-person DOU buy-Perf one-CL-book

a. *'There is a book that everyone bought.' (*a>every)
b. 'For every person x, there is a book that x bought.' (every>a)

(19) *mei-ge ren* dou **chi**-le yi-kuai danggao.
every-CL person DOU eat-Perf one-CL cake

a. ?'There is a piece of cake x, everyone ate x.' (a>every)
b. 'For every person x, there is a piece of cake that x ate.' (every>a)

---

further research.

(20) *mei-ge-ren* dou **dasuan/xiang** mai *yi-ben-shu*.
every-CL-person DOU plan/want buy one-CL-book

a. 'There is a book that everyone plans to buy.' (a>every)
b. 'For every person x, there is a book that x plans to buy.' (every>a)

(21) *mei-ge-ren* dou **xihaung** *yi-ben-shu*.
every-CL-person DOU like one-CL-books

a. 'There is a book that everyone likes.' (a>every)
b. 'For every person x, there is a book that x likes.' (every>a)

The subject *mei-ge* NP 'every NP' in each example ((18b)-(21b)) has wider scope over the object indefinite NP. This fact can be captured by the Isomorphic Principle, as we have already seen. Besides, the point here is that the lack of individual reading (a>every) in (18a) and the possible individual readings in other data are parallel to (13)-(15), in which *wh*-words are basically interpreted with functional readings, rather than individual readings. The (pseudo-) individual readings were derived above by pragmatics instead of by syntax. With regard to this parallelism, I suggest that the possible individual readings (a>every) shown in (19a)-(21a) are also pseudo-individual readings, because the interpretation is only possible when multiple events or a non event is involved. Cheng's (1991) judgment of the impossible reading of (18a) is correct since once *a book is bought*, the event is completed and a completed event usually is not allowed to reoccur. That is why (18a) does not make any sense and is not acceptable. On the other hand, the other types of predicates shown in (19)-(21) do not imply end points and the events on a specific object *theme* may happen multiple times. As a result, the individual readings (a>every) are more acceptable in (19)-(21) than in (18), and the increased acceptability should be attributed to pragmatic reasons. Given this, it follows that the individual readings in each (a) are actually derived from the (b) readings, in which the object indefinite NP has a narrower scope than the subject *mei-ge* NP 'every NP'. I summarize the claims as follows, in (22), which is similar to (17).

(22) a. When there is an indefinite NP in object position and a universal quantifier in subject position, the subject universal quantifier takes wider scope over the object indefinite NP. (every>a)
b. The individual reading (a>every) is derived by pragmatics.

In sum, as we have seen in the data and the generalizations shown in (17) and (22) about subject universal quantifiers and object *wh*-word/indefinite NPs, M.C. differs from English in that there is no genuine individual reading in M.C.; the (pseudo-) individual reading in M.C. should be regarded as a type of functional reading with additional pragmatic factors. I suggest that these two readings are not distinguished by syntactic operations, but by pragmatic factors, such as the type of the object *theme* and the specificity of the NP[4].

In the following sections, I focus on functional reading and pair-list reading. Based on the preceding discussion, I assume that pseudo-individual reading is included in functional reading and claim that there are only functional reading and pair-list reading in M.C.

### 3.4. Functional Readings and Pair-list Readings

Chierchia (1991) suggests that functional readings and pair-list readings are derived in very similar ways: the function f(x) is bound by universal quantifier *every* QP. However, functional readings and pair-list readings are not always allowed all the time. The example (23) shows that only functional reading is allowed when an object *wh*-word is in an embedded clause.

---

[4] The definite NP is also compatible with the universal quantification *mei-ge* NP 'every NP'. But because a definite NP is not quantificational, no scope interaction is observed. The subject universal quantification can be either interpreted as distributive or collective, and the definite NP can either be interpreted as *type* or *token* (an entity), depending on the types of predicates. I will not discuss definite NP in this paper.

(i) a. mei-ge ren dou mai-le nei-ben shu. (distributive)
every-CL person DOU buy-Perf that-CL book.
'Everyone bought that book (different books with the same name).'
b. mei-ge ren dou chi-le nei-kuai dangao. (collective)
every-CL person DOU eat-Perf that-CL cake
'Everyone ate that cake.'

(23) mei-ge ren dou **qiangpo** [ Zhangsan mai sheme]?
every-CL person DOU compel Zhangsan buy what

'What did everyone compel Zhangsan to buy?'

i. A guitar. (functional reading)

ii. *Xiaoming forced Zhangsan to buy a guitar, Lisi forced Zhangsan to buy a violin, ... (pair-list reading)

The same phenomenon can also be seen when there is a modal. The data are shown in (24), where two linear orders between the modal and *dou* are possible.

(24) a. (ni cha yixia) mei-ge ren ***dou keneng*** mai-le sheme?
(you check a bit) every-CL person DOU might buy -Perf what

'(Check it) What might everyone have bought?'

i A guitar (=their own guitars). (functional reading)

ii. Zhangsan might have bought a guitar, Lisi might have bought a book, ... (pair-list reading)

b. (ni cha yixia) mei-ge ren ***keneng dou*** mai-le sheme?
(you check a bit) every-CL person might DOU buy-Perf what

'(Check it) What might everyone have bought?'

i A guitar (=their own guitars). (functional reading)

ii. *Zhangsan might have bought a guitar; Lisi might have bought a book, ... (*pair-list reading)

When *dou* precedes the modal *keneng* 'may/might', both functional reading and pair-list reading are allowed, but when *dou* is preceded by modal *keneng*, only functional reading is possible. From this fact, we can simply say that the scope (non-)ambiguity might be related to the position of *dou*. But the point shown here is that the functional reading and the pair-list reading do not always come together, even Chierchia (1991) claims that the pair-list reading is a kind of functional readings. The facts shown in (23) and (24) further indicate that the functional reading in M.C. is a default reading for *wh*-words when a *wh*-word in object position co-occurs with a universal quantifier in subject position. Contrary to the functional reading, it seems that the pair-list reading in M.C. is

only allowed in some particular syntactic environments. If so, scope ambiguity in M.C. could be considered to be the case in which functional reading and pair-list reading are both allowed at the same time.

In the following section, I will show the distribution of pair-list reading and generalize the syntactic environments which allow scope ambiguity in M.C.

## 4. Syntactic Conditions on Scope Interaction

### 4.1. Scope Ambiguity and the Position of *Dou*

#### 4.1.1. (Non) Ambiguity and Asp-adjoined *Dou*

As we have seen in (24), the occurrence of a modal provides more than one position for *dou*, and hence there are two possible linear orders for these two elements. Since the modal and *dou* are both elements bearing scope (ie. Huang 1982), scope interactions are predicted. Nevertheless, a lack of ambiguity is still observed, as in the data (24b), where *dou* occurs after the modal and only functional reading is allowed. This is contrary to (24a), where *dou* occurs before the modal and both functional reading and pair-list reading are allowed. This kind of asymmetry is clearer when the sentence contains a manner adverb such as *toutoude* 'secretly'. (25) is an example of this.

(25) Manner adverb

a. mei-ge ren ***dou*** **keneng** [$_{v}$P **toutoude** [$_{v}$P mai sheme]]]?
every-CL person DOU may secretly buy what

'What may everyone buy secretly?'

i. A camera (for him/herself). (functional reading)

ii. Zhangsan may buy a camera secretly, Lisi may buy a music player secretly, … (pair-list reading)

b. mei-ge ren **keneng** ***dou*** [$_{v}$P **toutoude** [$_{v}$P mai sheme]]]?
every-CL person may DOU secretly buy what

'What may everyone buy secretly?'

i. A camera (for him/herself). (functional reading)

ii. *Zhangsan may buy a camera secretly, Lisi may buy a music player secretly, … (pair-list reading)

c. mei-ge ren **keneng** [$_{vP}$ **toutoude *dou*** [$_{vP}$ mai sheme]]]?
every-CL person may secretly DOU buy what

'What may everyone buy secretly?'

i. A camera (for him/herself). (functional reading)

ii. *Zhangsan may buy a camera secretly, Lisi may buy a music player secretly, … (pair-list reading)

In (25), the manner adverb *toutoude* 'secretly' occurs before the verb *mai* 'buy', leading to three possible positions for *dou*: one is the position preceding to the modal *keneng* 'may', as (25a) shows; the other position is between the modal *keneng* and manner adverb *toutoude*, as in (25b); another position is after the manner adverb *toutoude* and before the verb *mai*, as shown in (25c). In these cases, only (25a) is ambiguous since it allows pair-list reading in addition to functional reading. The structures for (25) are illustrated in (26).

(26) a. (25a) (ambiguous)
[$_{AspP}$ **every** ***dou*** [$_{Asp'}$ Asp$^{0}$ [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***wh*** ]]]]]

i. functional reading

ii. pair-list reading

b. (25b, c) (unambiguous)
[$_{AspP}$ **every** [$_{Asp'}$ Asp$^{0}$ ***dou*** [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***wh*** ]]]]]

i. functional reading

ii. *pair-list reading

The structure of (25a) is (26a). *Dou* in (26a) adjoins to a position higher than the modal, a position I assume to be Asp'. In this case, two interpretations for the object *wh*-word are allowed. In contrast to (25a), the structures of (25b, c) are in (26b), where *dou* adjoins to *v*P, which is lower than the modal. In this case, only one interpretation for the object *wh*-word is allowed. Based on this, we can generalize (26) in (27).

(27) a. An object *wh*-word is allowed to have functional and pair-list readings when *dou* adjoins to Asp'.

b. An object *wh*-word has functional reading only when *dou* adjoins to *v*P.

This generalization (27) shows one particular syntactic environment that allows scope ambiguity in M.C. In the next subsection, I will provide other data to support my claim that scope ambiguity is related to syntactic environment, especially the position of *dou*.

### 4.1.2. (Non) Ambiguity and *v*P-adjoined *Dou*

In (28), the subject *mei-ge* 'every NP' occurs with an object indefinite NP *yi-fen dangao* 'a cake'. As (28a) shows, *mei-ge ren* 'everyone' must take a wider scope over the object indefinite NP. The sentence in (28a) is unambiguous, as predicted by the Isomorphic Principle (3). However, (28b), in which *dou* appears after the modal, seems to violate the Isomorphic Principle: the object indefinite NP is allowed to have either wider or narrower scope over the subject *mei-ge ren* 'everyone'. The sentence in (28b) is ambiguous.

(28) a. mei-ge ren ***dou*** **keyi** mai yi-fen dangao.
every-CL person DOU can buy one-CL cake

i. (every>a) = (pair-list reading)[5]
'For every person x, there is a cake y, and x can buy y.'

ii. (*a>every) = (individual reading)
*'There is a cake y, and for every person x, x can buy y.'

b. mei-ge ren **keyi** ***dou*** mai yi-fen dangao.
every-CL person can DOU buy one-CL cake

i. (every>a) = (pair-list reading)
'For every person x, there is a cake y, x can buy y.'

ii. (?a>every) = (individual reading)
'There is a cake y, for every person x, x can buy y.'

As we have discussed in 3.3, the indefinite NP in object position does not take wider scope over the subject QP, the individual reading (a>every) is possible only for pragmatic reasons, as stated in (22b). *Keyi* 'can' is a modal expressing permission from the speaker. The proposition introduced by *keyi* can be

[5] I assume that pair-list readings and individual readings arising via a subject *every* NP and an object *indefinite* NP (a/some NP) are derived from c-commanding relations, such as *every>a* or *a>every*, respectively. Functional reading is only for *wh*-words.

considered *not* to involve a real event. According to (22), since the individual reading is due to pragmatic reasons, we expect that the individual readings in (28) should be allowed in both cases, no matter whether *dou* appears before *keyi* 'can' or after it. If this is the case, then the inconsistent acceptability of individual readings in (28a) and (28b) becomes a problem.

Due to this, I consider that the pragmatic reason has nothing to do with the individual reading here. Rather, there is an asymmetry in the syntactic positions of *dou* and the modal. The individual reading (a>every) in (28a) is ruled out by a syntactic condition, the Isomorphic Principle. It is also a syntactic reason (the position of *dou* which marks the scope of *mei-ge* NP 'every NP') that allows the individual reading in (28b). The structural relations and the interpretations are presented as follows:

(29) a. = (28a) (unambiguous)
[$_{AspP}$ **every** ***dou*** [$_{Asp'}$ Asp$^{0}$ [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***indef*** ]]]]]
i. every>a
ii. *a>every
b. = (28b) (ambiguous)
[$_{AspP}$ every [$_{Asp'}$ Asp$^{0}$ ***dou*** [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***indef***]]]]]
i. every>a
ii. a>every

The statements for (29) are in (30).

(30) a. An object indefinite NP has only pair-list reading (every>a) when *dou* adjoins to Asp'.
b. An object indefinite NP has pair-list reading (every>a) or individual reading (a>every) when *dou* adjoins to *v*P.

As I have mentioned above, the non-ambiguity in (28a) can be captured by the Isomorphic Principle (the object QP can never take wider scope than the subject QP); while the ambiguity in (28b) is related to a specific syntactic environment, as stated in (30b).

### 4.1.3. Generalizations

I summarize the statements in (27) and (30) in (31).

(31) When a universal quantifier occupies the subject position,
   a. an object *wh*-word is interpreted with a functional reading by default. A pair-list reading for an object *wh*-word is only allowed when scope marker *dou* adjoins to Asp'.
   b. an object indefinite NP, following the Isomorphic Principle, does not take wide scope over the subject QP. Wide scope reading for an object indefinite NP is allowed only when *dou* adjoins to *v*P.

Unlike functional reading, pair-list reading is possible only when the scope marker *dou* adjoins to Asp'. In that case, both functional reading and pair-list reading are allowed at the same time and hence scope ambiguity appears. The story for object indefinite NPs is opposite to the case of *wh*-words, where the lack of the ambiguity basically is due to the Isomorphic Principle, but inverse scope reading (a>every) could become possible when *dou* adjoins to *v*P.

### 4.2. Clausemateness and Lack of Ambiguity

There is a group of data that seems to be an exception for (31a). That is, scope ambiguity disappears when the object *wh*-word is in a different clause from the subject universal quantifier. This is illustrated in (32), where *wh*-words are inside DP islands and *dou* can appear before or after the modal *keneng* 'may'. These sentences are not ambiguous, since only functional readings for *wh*-words are allowed.

(32) DP islands

mei-ge ren ***dou*** **keneng** kan [$_{DP}$[$_{CP}$ Zhangsan xie *sheme*] de shu]?
every-CL person DOU may read Zhangsan write what DE book

   a. 'For which function f, for every person x, x may read the book that Zhagnsan wrote about f(x).' (functional reading)
   b. *'For every person x, for which y, x may read the book that Zhangsan wrote about y.' (*pair-list reading)

The same phenomenon is also observed in sentences including *wh*-islands.

(33) *wh*-islands

mei-ge ren ***dou*** **keneng** xiangzhidao [shei mai *sheme*]?
every-CL person DOU may wonder who buy what

a. 'For which function f, for every person x, x may wonder for which person y, y bought f (x).' (functional reading)
b. *'For every person x, for which y, x may wonder for which person z, z bought y.' (*pair-list reading)

Based on these data, another generalization can be made, which is that no matter where *dou* is generated, no scope ambiguity appears when the *wh*-word is embedded in an island. This generalization can be further redefined by the requirement of clausemateness to the two QPs. Let us consider (23) again, which I repeat in (34), in which the *wh*-word is generated in a different clause from the subject *mei-ge* NP 'every NP'.

(34) = (23)

mei-ge ren dou **qiangpo** [ Zhangsan mai sheme]?
every-CL person DOU compel Zhangsan buy what

'What did everyone compel Zhangsan to buy?'

i. A guitar. (functional reading)
ii. *Xiaoming compelled Zhangsan to buy a guitar, Lisi compelled Zhangsan to buy a violin, … (*pair-list reading)

The lack of ambiguity in (34) can be briefly captured by the non-clausemate relation between the subject *mei-ge* NP 'every NP' and the object *wh*-word. I suggest that clausemateness is another syntactic condition for the lack of scope ambiguity.

(35) There is no scope interaction between a subject universal quantifier and an object *wh*-word which are not clausemates.

**4.3. Scope Interaction and Phase Domain**

After seeing the special case of clausemateness, let us go back to the argument in 4.1 and see on how scope interaction is allowed in syntax. The syntactic environment that constrains scope interaction must be related to *dou.* One

reason for this is that *dou* is a scope marker which marks the scope of the universal quantifier *mei-ge* NP in subject position. The other reason is the crucial fact I generalized in (31). To capture these two, I suggest that the scope interaction is possible only when the two scope domains are in the same phase domain, which I assume to be CP and *v*P, following Chomsky (2004).

First of all, I define the scope domains of the subject universal quantifier *mei-ge* NP 'every NP' as follows:

(36) The scope domain of the subject universal quantifier *meige*-NP is the first maximal projection which dominates *dou*.

a. [$_{\text{AspP}}$ *mei-ge* NP ***dou*** Asp$^0$ [$_{v\text{P}}$ ]]

b. [$_{\text{AspP}}$ *mei-ge* NP Asp$^0$ [$_{v\text{P}}$ ***dou*** [$_{v\text{P}}$ ]]]

As (36a) shows, AspP is the first maximal projection which dominates *dou* when *dou* adjoins to Asp'. Since the subject universal quantifier *mei-ge* NP 'every NP' must be licensed by *dou*, according to the assumption shown in (36), the scope domain of the subject *mei-ge* NP will be the domain of AspP. Likewise, *dou* in (36b) adjoins to *v*P and the first maximal project which dominates *dou* is *v*P. Therefore, the scope domain of the subject *mei-ge* NP in (36b) will be the domain of *v*P.

Next, as for the scope domain of *wh*-words, I follow Tsai (1994) and assume that a *wh*-word in M.C. does not undergo movement at LF and must be bound by a Q-particle which is generated in the specifier of CP. The structure is presented in (37).

(37) [$_{\text{CP}}$ $Q_i$ C [$_{\text{AspP}}$ … $\text{wh}_i$ …]]

A Q particle which binds in-situ *wh*-words determines the scope of the *wh*-words. The scope is usually assumed to be the domain that the Q particle c-commands, which is CP and must include AspP. The scope domain of in-situ *wh*-words can be stated as follow:

(38) The scope domain of *wh*-words is the domain that the binder Q-particle c-commands.

[$_{\text{CP}}$ $Q_i$ C [$_{\text{AspP}}$ … $\text{wh}_i$ …]]

Assuming (36) and (38), the scope interactions between the subject *mei-ge* NP 'every NP' and an object *wh*-word can be illustrated as in (39):

(39) a. = (26a) (functional reading, pair-list reading)
[$_{CP}$ **Q**$_i$ C [$_{AspP}$ **every** ***dou*** [$_{Asp'}$ Asp$^0$ [$_{vP}$ <every> ***v*** [$_{v'}$ V[$_{VP}$ <V> ***wh***$_i$ ]]]]]]
・the scope domain of the object *wh*-word: CP
・the scope domain of the subject *mei-ge* NP: AspP

b. = (26b) (functional reading, *pair-list reading)
[$_{CP}$ **Q** C [$_{AspP}$ **every** [$_{Asp'}$ Asp$^0$ [$_{vP}$ ***dou*** [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***wh*** ]]]]]]
・the scope domain of the object *wh*-word: CP
・the scope domain of the subject *mei-ge* NP: *v*P

I suggest that scope interaction between *meige* NP 'every NP' and a *wh*-word becomes possible only when their scope domains are overlapped in the same phase domain, which means that the they are both in either *v*P or CP. Besides, in order to capture the syntactic condition shown in (35), I suggest that *dou* and *wh*-words must be base-generated in the same clause. As a result, the syntactic conditions for scope ambiguity can be stated as follows.

(40) Scope interaction between a subject universal quantifier and an object *wh*-word is possible only when (i) *dou* and the *wh*-word are base-generated in the same clause and (ii) their scope domains are in the same phase domain.

This condition can further be extended to the case including indefinite NPs in the object position. Following Diesing (1992), I assume an existential closure and suggest that the scope domain of indefinite NPs is determined by it. I state this in (41).

(41) The scope domain of an object indefinite NP is the domain that the ∃-quantifier c-commands. (The ∃-quantifier is introduced by an existential closure and always selects *v*P as its complement.)
[… ∃$_i$ [$_{vP}$ [$_{VP}$ V *indef*$_i$…]]]

Assuming (41), the scope domain of an object indefinite NP is *v*P, which has the same scope domain as that of the subject *mei-ge* NP 'every NP' licensed by *v*P-generated *dou*. If (40) is correct (replacing *wh*-words with indefinite NPs), we can predict that *mei-ge* NP 'every' licensed by *v*P-generated *dou* should allow scope interactions with an object indefinite NP. Such scope relations are illustrated in (42).

(42) a. = (29a) (every>a, *a>every)

[$_{AspP}$ **every** ***dou*** [$_{Asp'}$ Asp$^{0}$ ∃ [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***indef*** ]]]]]

・the scope domain of the object indefinite NP: *v*P

・the scope domain of the subject *mei-ge* NP: AspP

b. = (29b) (every>a, a>every)

[$_{AspP}$ every [$_{Asp'}$ Asp$^{0}$ [$_{vP}$ ***dou*** ∃ [$_{vP}$ <every> [$_{v'}$ V [$_{VP}$ <V> ***indef*** ]]]]]]

・the scope domain of the object indefinite NP: *v*P

・the scope domain of the subject *mei-ge* NP: *v*P

Scope ambiguity appears when the scope domains of QPs are in the same phase domain. As (42b) shows, the object indefinite NP and subject *mei-ge* NP 'every NP' both take *v*P as their scopes, and therefore two scope interpretations are allowed. On the other hand, the subject *mei-ge* NP in (42a) takes AspP as its scope domain, whereas the object indefinite NP takes *v*P as its scope domain. These two scope domains are in different phase domains, preventing scope interaction. The lack of scope ambiguity is therefore well captured by applying (40).

### 4.4. Examinations

In this subsection, I will verify (40) by examining four predictions. The predictions are shown in (43).

(43) Predictions

I. *dou* and the other QP are generated in the same clause, and the scope domains are overlapped in the same phase domain
→ scope ambiguity appears

II. *dou* and the other QP are generated in the same clause, but the scope domains are in different phase domains
→ no scope ambiguity appears

III. *dou* and the other QP are generated in different clauses, but the scope domains are overlapped in the same phase domain
→ no scope ambiguity appears

IV. *dou* and the other QP are generated in different clauses, and the scope domains are in different phase domains
→ no scope ambiguity appears

(44) a. Data for Prediction I
gaosu wo [ Q [ **mei-ge ren *dou*** keneng mai ***sheme*** ]].
tell me Q every-CL person DOU may buy what

'Tell me what is the thing x that everyone may buy.'

i. A guitar (for him/herself). (functional reading)

ii. Zhangsan may buy a guitar, Lisi may buy a camera, … (pair-list reading)

b. Data for Prediction II
Q [ni renwei [ **mei-ge ren *dou*** keneng mai ***sheme*** ]]?
Q you think every-CL perosn DOU may buy what

'What do you think that everyone may buy?'

i. A guitar (for him/herself). (functional reading)

ii. *I think Zhangsan may buy a guitar, Lisi may buy a camera, … (*pair-list reading)

c. Data for Prediction III
Q [ **mei-ge ren *dou*** renwei [Zhangsan keneng mai **sheme**]]?
Q every-CL person DOU think Zhangsan may buy what

'What does everyone think that Zhangsan may buy?'

i. A guitar (for him/herself). (functional reading)

ii. *Lisi thinks Zhangsan may buy a guitar, Xiaoming thinks Zhangsan may buy a camera, … (*pair-list reading)

d. Data for Prediction IV
[ **mei-ge ren *dou*** xiangzhidao Q [Zhangsan keneng mai **sheme**]].
every-CL person DOU wonder Q Zhangsan may buy what

i. *'Everyone wonders what Zhangsan may buy.' (*indef *wh* > every)
ii. 'Everyone wonders what Zhangsan may buy.' (every> indef *wh*)

In (44a), the sentence is ambiguous: *mei-ge ren* 'everyone' is licensed by Asp-adjoined *dou* which is generated in the same clause as the object *wh*-word. The *wh*-word is bound by an embedded Q and the scope domain of the *wh*-word is the embedded CP. This scope domain overlaps with the scope of the subject *mei-ge ren*, which is embedded AspP. The presence of scope ambiguity in (44a) is correctly captured by Prediction I, in accordance with (40). In (44b), the *wh*-word is bound by the matrix Q and the scope domain is the matrix CP, whereas the scope domain of the embedded subject *mei-ge ren* is in the other phase domain. There is no scope ambiguity in (44b), in agreement with Prediction II and (40). The cases in (44c, d) are a little different from (44a, b) because *mei-ge ren* appears in different clauses from the *wh*-words. In (44c), the object *wh*-word is bound by matrix Q and *dou* is also generated in the AspP. There scope domains are considered to be in the same phase domain, however, since these two elements are not clausemates, no scope ambiguity is observed. This fact is correctly captured by (35) and confirms Prediction III. Lastly, *mei-ge ren* as well as *dou* and the *wh*-word in (44d) are in different clauses and have different scope domains. The lack of scope ambiguity is predicted here as well.

## 5. Conclusions

In this paper, I focused on scope ambiguity in M.C. and discussed the particular syntactic environments which allow scope interaction between a subject *mei-ge* NP and object QPs (including *wh*-words and indefinite NPs). Basically, I claim that the Isomorphic Principle properly explains the sentences which lack scope ambiguity, but we must admit that that scope ambiguity does exist in M.C.

I started with showing that there is scope ambiguity between the subject universal quantifier *mei-ge* NP 'every NP' and the object *wh*-word in M.C., and then discussed several types of scope interpretations for object *wh*-words. Next, in (31), I generalized the syntactic environments where scope ambiguity is allowed to appear. Based on this generalization, I further assumed a condition for scope interactions in (40) to capture how scope interaction is possible in syntax. I suggested that *dou* functions as a scope marker in determining the

scope of subject *mei-ge* NP 'every NP' and showed how the syntactic position of *dou* affects the presence of scope ambiguity. Lastly, I examined predictions from (40) and showed the validity of my assumptions.

Additionally, I want to point out two remaining important issues. One is how to derive and distinguish functional reading and pair-list reading for *wh*-words. The other is what phase-based mechanism causes the scope interactions. I would like to investigate these issues in further studies.

**References**


Anand, Pranav and Tang, Danni (2004) Redistributing *dou*: Cleaving Exhaustivity from Distributivity. *WCCLF 23* Precedings, ed. Vineeta Chand et al., Somerville: Cascadilla Press.15-28.

Aoun, Joseph and Li, Yen-hui Audrey (1993) *Syntax of scope*. Cambridge: MIT Press.

Cherchia, Gennaro (1991) Functional wh and Weak Crossover, *WCCFL* 10, 75-90.

Cheng, L.-S Lisa (1991) *On the Typology of Wh-questions*. PhD Dissertation. Cambridge: MIT Press.

Cheng, L.-S Lisa (1995) On Dou-Quantification. *Journal of East Asian Linguistics* 4. 197-234.

Chomsky, Noam (1995) *The minimalist program*. Cambridge: MIT Press.

Chomsky, N. (2004) Beyond Explanatory Adequacy. In: Belletti, A. (Ed.), *Structures and Beyond: The Cartography of Syntactic Structures,* Volume 3. Oxford University Press, 104-191.

Chomsky, N. (2008) On Phases. In: Freidin, R., Otero, C, and Zubizarreta, M.L (Eds.): *Foundational Issues in Linguistic Theory*. Cambridge, MA: MIT Press, 133-166.

Diesing, Molly (1992) *Indefinites*. Cambridge: MIT Press.

Ernst, Thomas (1995) Negation in Mandarin Chinese. *Natural Language and Linguistic Theory* 13. 665-707.

Huang, C.-T James (1982) *Logical Relation in Chinese and the theory of Grammar.* PhD Dissertation. Cambridge: MIT Press.

Huang, C.-T James (1987) Existential Sentences in Chinese and (In)definiteness, In: Eric Reuland and Alice ter Meulen (eds.), *The Representation of (In)definiteness*. Cambridge: MIT Press. 226-253.

Kuno, Susumu and Takami, Ken-ich (2002) Quantifier Scope in Chinese. *Quantifier Scope*. Tokyo: Kurosio Publishers. 103-168.

Lee, H. Thomas (1986) *Studies on Quantification in Chinese*. PhD Dissertation. UCLA

Li, Chrales N. and Sandra A. Thompson (1981) *Mandarin Chinese*. The Crane Publishing Company.

Li,Yen-Hui Audrey (1992) Indefinite *Wh* in Mandarin Chinese. *Journal of East Asian Linguistics* 1. 125-155.

Lin, Fu-Wen (2004) The Co-occurrence of *DŌU* (都) and *MĚI* (每) in Mandarin Chinese. *Journal of Chinese Linguistics*. 32.2. 308-333.

Lin, Jo-Wang (1998) Distributivity in Chinese and Its Implications. *Natural Language Semantics* 6. 201-243.

Lin, Jo-Wang (2003) Aspectual Selection and Negation in Mandarin Chinese. *Linguistics* 41. 425-459.

May, Robert (1977) *The Grammar of Quantification*, Ph.D Dissertation. Cambridge: MIT Press.

May, Robert (1988) Ambiguities of Quantification and Wh: A Reply to Williams, *Linguistic Inquiry* 19, 1, MIT. 118-135

Oku, Satoshi (1999) Note on Qunatifier/Wh Interaction, *Linguistic Inquiry* 30, 1, MIT. 143-147

Okuno, Tadanori and Ogawa, Yoshiki (2002）*Kyokusei to Sayoiki*. Tokyo: Kenkyusya

Tsai, W.-T. Dylan (1994) *On Economizing the Theory of A'-dependencies*, Ph.D. Dissertation, MIT.

Travis, Lisa (1988) The syntax of Adverbs. *McGill Working Papers in Linguistics: Proceedings of the IVth Workshop on Comparative Germanic Syntax*. McGill University.

# 中国語におけるスコープの相互作用に関する考察

徐　佩伶
(九州大学大学院)

本論文は、中国語における二つの量化表現のスコープの相互作用について考察を行ったものである。中国語では量化表現のスコープ関係は基本的にIsomorphic Principleに従うが、疑問詞の場合はIsomorphic Principleに従わず、例外であると指摘されている(Huang 1982, Cheng 1991)。いずれにせよ、中国語ではスコープ関係によって文が曖昧になるということはないと主張されている(Cheng 1991)。ところが、疑問詞が目的語位置にあり、普遍数量詞が主語位置にある場合は、文の解釈が曖昧になるという事実があり、本稿ではその曖昧性がスコープの相互作用に関係すると主張する。さらに、中国語のスコープの相互作用を許す統語的環境及び条件を考察し、次のように提案する：二つの量化表現のスコープの相互作用が許されるのは、量化表現/スコープマーカーが同じ節に基底生成し、且つそれぞれが持つスコープが同じフェイスの領域になっている場合に限る。この提案によって、中国語の量化表現を含む文において解釈に曖昧性が生じる場合と生じない場合を予測することができる。

(初稿受理日　2010年2月28日　　最終稿受理日　2010年7月24日)