

**THE SEMANTICS-PRAGMATICS INTERFACE AND ISLAND
CONSTRAINTS IN CHINESE**

by

Dawei Jin

Date of Degree Conferral: February 1st, 2016

A dissertation submitted to the
Faculty of the Graduate School of
the University at Buffalo, State University of New York
in partial fulfillment of the requirements for the
degree of

Doctor of Philosophy

Department of Linguistics

Copyright by

Dawei Jin

2016

(ii)

Acknowledgement

I owe a lot to many people who have helped me since the first day I thought about islands and intervention. First of all, I would like to express my gratitude to my dissertation advisor, Rui Chaves, who kept challenging my ideas and ultimately convinced me that it would be better off to formulate my ideas as explicitly as possible, and who tirelessly corrected the many many mistakes in my details. Rui is also my primary source to learn virtually everything about academic publishing and the (to me) elusive skill of good writing. Furthermore, I deeply appreciate my committee members, Jean-Pierre Koenig and Matthew Dryer. Jean-Pierre's very detailed comments on almost every page of my manuscript caused me to rethink some of the foundational parts of my theory. Matthew's typological prowess also proved a particularly valuable source for new ideas and different perspectives.

I also benefited from suggestions and comments on certain topics of my dissertation from Juergen Bohnemeyer and Robert van Valin Jr. Both also encouraged me to pursue my ideas even when I had doubts about their validity.

Furthermore, I would like to thank my friends Yoshi Asao, Jun Chen, Natsuko Nakagawa, Sanghee Park, Hiroto Uchihara, Xun Wang and Fen Yik for their support in various points of the preparation and writing of this dissertation. Some of them also patiently provided their native speaker judgments for me. Many thanks go also to Jodi Reiner, for guiding me through the process of graduating and offering more assistance along the way than I could recall.

Finally, I would like to thank my mother, Lihua Xu, whose vision led me to pursuing an academic career, and whose unwavering support and steadfast willpower made all the differences in times of difficulty. I hope that one day I can make her feel proud, and it is to her that this dissertation is dedicated.

Table of Contents

| | |
|---|-------------|
| Table of Contents | iv |
| List of Figures and Tables | vi |
| Abbreviations | vii |
| Abstract | viii |
| 1 Introduction..... | 1 |
| 1.1 Background..... | 1 |
| 1.2 Preview of the Proposals | 11 |
| 1.3 Outline..... | 12 |
| 2 Why-questions and Strong Islands in Chinese..... | 14 |
| 2.1 Introduction | 14 |
| 2.2 Rethinking the Argument-Adjunct Asymmetry..... | 16 |
| 2.2.1 Previous Theories..... | 16 |
| 2.2.2 Problems | 22 |
| 2.3 The Syntax and Semantics of <i>Why</i> | 28 |
| 2.4 The Root Constraint and Strong Islands | 39 |
| 2.4.1 Deriving Strong Island Effects | 39 |
| 2.4.2 <i>Wh</i> -Complements..... | 48 |
| 2.5 Summary | 54 |
| 3 Intervention Effects..... | 57 |
| 3.1 Introduction | 57 |
| 3.2 Intervention Effects in Chinese <i>Why</i>-questions | 60 |
| 3.2.1 Data..... | 60 |
| 3.2.2 The Minimality Approach..... | 65 |

| | |
|---|------------|
| 3.2.3 A Theory of Intervention | 68 |
| 3.3 Evidence for Topicality | 90 |
| 3.4 A Comparison with Japanese and Korean | 111 |
| 3.4.1 Intervention Effects in Japanese and Korean <i>Why</i> -questions | 111 |
| 3.4.2 The High Attachment Analysis (Ko 2005)..... | 114 |
| 3.4.3 Tomioka (2009) | 126 |
| 3.4.4 Capturing the Crosslinguistic Variation | 130 |
| 3.5 Intervention Effects in Non-<i>why</i> Questions | 135 |
| 3.5.1 Data..... | 135 |
| 3.5.2 Previous Approaches | 138 |
| 3.5.3 My Theory | 149 |
| 3.6 Summary..... | 159 |
| 4 Rethinking the Semantics of A-not-A questions..... | 162 |
| 4.1 Introduction | 162 |
| 4.2 Data | 165 |
| 4.2.1 Properties of A-not-A Questions..... | 165 |
| 4.2.2 Strong Island Effects..... | 169 |
| 4.2.3 Intervention Effects..... | 175 |
| 4.2.4 Further Evidence | 181 |
| 4.3 Semantics of A-not-A Questions..... | 183 |
| 4.3.1 Huang’s Approach | 183 |
| 4.3.2 Echoing <i>Why</i> -questions: A Topicality Account | 188 |
| 4.4 Other Accounts | 202 |
| 4.5 <i>Haishi</i>-questions and Intervention Effects..... | 212 |
| 4.6 Summary | 221 |
| 5 Conclusion..... | 223 |
| References..... | 227 |

List of Figures and Tables

FIGURES

| | |
|---|-----|
| 3.2.2 The Maximal Matching Filter _____ | 66 |
| 3.4.2 The Absence of Intervention in <i>way</i> -interrogatives _____ | 117 |
| 3.4.2 Intervention Effects in Embedded Declaratives with Matrix Scopal Elements _____ | 117 |
| 3.4.2 Intervention Effects in Embedded Declaratives with Embedded Scopal Elements _____ | 118 |

TABLES

| | |
|--|-----|
| 4.3.2 A Summary of the Intervention Phenomena in A-not-A Questions _____ | 197 |
|--|-----|

Abbreviations

| | | | |
|------|------------------------|-----|-----------------|
| ACC | accusative | NOM | nominative |
| COP | copula | PFV | perfective |
| CLF | classifier | PL | plural |
| DEM | demonstrative | PRS | present |
| EXP | experiential aspect | PRT | particle |
| FOC | focus marker | PST | past |
| HON | honorific marker | | |
| IPFV | imperfective | Q | question marker |
| LOC | locative | REL | relativizer |
| NEG | negative | TOP | topic |

The Semantic-Pragmatics Interface and Island Constraints in Chinese

by

Dawei Jin

Abstract

This thesis is about strong island effects and intervention effects. Strong island effects are contexts where operator-variable dependencies cannot be established. The paradigmatic cases of strong island violations in Chinese occur in *why*-questions. This thesis explores a basic contrast: *why*-questions fail to be interpreted in strong island contexts, as opposed to other *wh*-questions. This contrast is illustrated in (1a) and (1b):

- (1) a. #*Ni xiang mai [ta weishenme xie] de shu?*
 You want.to buy he why write REL book
 #‘Why_i do you want to buy the book [that he wrote t_i]?’
- b. *Ni xiang mai [ta yinwei shenme xie] de shu?*
 You want.to buy he because.of what write REL book
 #‘What is the reason_i such that you want to buy the book that he wrote for that reason_i?’

The main questions that my account of strong islands addresses are the following:

- Is it true that only *why*-questions induce strong island violations, while others don’t?
- If Chinese strong island violations are indeed tied to *why*-questions, what is special about this question type that leads to strong island violations?
- What is the nature of strong island violations in *why*-questions? Are they syntactic, semantic, pragmatic or a combination?

This thesis develops a semantic account for strong islands, and the core idea can be summarized as follows. What sets apart the reason adverb *why* from other *wh*-interrogative phrases is that *why* is ontologically different. *Why* modifies propositions, relating a proposition to a set of reasons, rather than corresponding to a part of the proposition. This proposition-level operation exhibits a main clause phenomenon, meaning that a *why*-question should only occur as a root clause (main clause). Based on this observation, I conclude that no *why*-questions may be embedded. In this view, the island-creating contexts cause interpretation problems simply because they are embedded clauses. There is nothing special about these island domains *per se*. Indeed, I provide evidence that a *why*-question cannot even embed as a complement clause. This theory predicts that if we can find another type of question that similarly modifies the proposition level, island effects should arise there, too. In this thesis, I find one such example in A-not-A questions. I argue that A-not-A questions are yes-no questions that relate a proposition to its truth values. As predicted, island effects occur in A-not-A questions.

Intervention effects arise when scope-taking elements linearly precede an interrogative phrase. This constraint resembles strong island violations, in that it also applies to *why*-questions and A-not-A questions, yet fails to apply to other *wh*-questions. In this thesis, I show that intervention exhibits variability: (i) monotone increasing quantifiers as well as non-monotonic quantifiers do not obey the intervention constraint; (ii) conversely, monotone decreasing quantifiers and focus-sensitive expressions are subject to the constraint. Based on the proposal that *why*-questions and A-not-A questions involve interrogative phrases that are proposition-level modifiers, my thesis proposes that scope-taking elements that take precedence over the interrogative phrases need to be topics. This proposal correctly predicts the variability in intervention effects.

1 Introduction

1.1 Background

This dissertation is about the phenomenon of *wh-in situ* in (Mandarin) Chinese.¹ Broadly speaking, *wh-in situ* covers a wide variety of syntactic and semantic issues that are specific to the *wh*-items in an *in situ wh*-question. My thesis concentrates on a more narrowly defined core issue of *wh-in situ* that has attracted tremendous attention since the 1980s. The issue is whether we need to assume that *in situ wh*-items undergo covert movement. Covert movement refers to a mechanism proposed in the generative syntax tradition. According to this proposal, *in situ wh*-items are able to take wide scope, because they move from their *in situ* base positions to their scope positions. This proposal assumes in the first place that overtly displaced (fronted) *wh*-items also move to take scope. The difference between the two movements is that covert movement does not get reflected in phonology. In the Government & Binding framework (GB), this invisibility of movement is implemented in the form of LF movement, *i.e.* covert movement takes place at the Logical Form (LF), a level of representation that reads off the syntactic representation module and feeds into the semantic interpretation module. In contrast to the level of Surface Syntax (SS), structural relations at LF do not enter the Phonological Form (PF), another proposed module where the phonology of a sentence is spelled out. Therefore, the structural relations at LF do not map onto the linear order.

¹ The discussions in my dissertation are almost exclusively about Mandarin Chinese, except for a few places where the grammatical aspects of other Sinitic languages are mentioned. Therefore, I will use the term *Chinese* consistently in the following to refer to Mandarin, and use the terms *Shanghainese*, *Teochew*, etc. to refer to other Sinitic languages.

In this dissertation, I do not dwell upon the technical issues regarding *wh-in situ* from theory-internal perspectives. I will focus on several locality constraints that are of general interest to proponents of all syntactic frameworks. I argue that we can explain these locality constraints by employing theory-neutral mechanisms that do not resort to covert movement. This runs against the long held assumptions in the mainstream syntactic literature that locality constraints provide the crucial motivation for the existence of covert movement, because they cannot be handled without positing movement. The results in my thesis thus weaken the attractiveness of covert movement.

Since Ross (1967), locality constraints in *in situ wh*-questions have been the central motivation for covert movement. For example, Huang (1982) demonstrates that a wide scope *wh*-reading is not available in sentence (1), where *weishenme* ‘why’ embeds in a relative clause:

(1) #*Ni xiang mai [ta weishenme mai] de shu?*

You want.to buy he why buy REL book

Intended Reading: #‘Why_i do you want to buy the book [that he bought t_i]?’

Huang argues that if *weishenme* moves at LF to take matrix scope, then it cannot embed in a relative clause, because relative clause is one of the island domains that are impenetrable to movement (Ross 1976).

Importantly, for this proposal to be a cogent argument, it must be demonstrated that covert movement occurs where overt movement has been shown to occur. In other words, we expect the two types of movement to share their distributional environments. Huang does provide several arguments to this effect. For example, he observes that, as in English, *in situ wh*-questions are subject to the selectional restriction of the embedding verbs. Verbs such as *ask*, for instance, require an interrogative complement, whereas verbs such as *believe* require a declarative

complement. Finally, *know* can take both. Huang (1982) presents examples in (2), which show that Chinese embedding verbs have the same selectional pattern:

(2) a. *Huangrong xihuan Guojing mai shenme?*

Huangrong like Guojing buy-PRF what

‘What does Huangrong like that Guojing bought?’

b. *Qiaofeng wen wo Guojing mai-le shenme shu?*

Qiaofeng ask me Guojing buy-perf what/book

a. ‘Qiaofeng asked me what Guojing bought.’

b. #‘Qiaofeng asked me Guojing bought the book.’

c. *Botong zhidao Huangrong xihuan shei (?)*

Botong know Huangrong like who

a. ‘Botong knows who Huangrong likes.’

b. ‘Who does Botong know Huangrong likes?’

Huang suggests that if *in situ wh*-phrases undergo movement at LF, the selectional requirements of the verb can be satisfied the same way as in English. However, the validity of Huang’s claim is dependent upon the frameworks one adopts. Suffice it to say that there are other ways to guarantee that the embedding predicates select for questions or propositions, without resorting to covert movement (Ginzburg 1995; Ginzburg & Sag 2000).

Another property often attributed to covert *wh*-movement is the scope-taking property of *in situ wh*-phrases (Huang 1982). In (3), the *wh*-phrase takes scope over the universal quantifier.

- (3) *Mei-ge xuesheng dou xuan-le nei-yi-men ke?*
 Every-CLF student DOU choose-PRF which one-cl course
 ‘Which course did every student choose?’

Yet again, covert movement is not the only way to come to terms with this property. The wide scope of the *in situ* phrase can be a result of a question operator/particle binding the *in situ* phrase from a distance (Baker 1970; Cheng 1991), or a result of the interrogative operator entering storage and being retrieved later to participate in scope interactions with the universal quantifier (Pollard and Sag 1994; Pollard and Yoo 1998). Therefore, none of Huang’s ostensibly supportive arguments conclusively point to the need to posit movement. Meanwhile, there are discrepancies in the distribution of *in situ* and overtly displaced *wh*-phrases that detract from the argument that covert movement and overt movement are uniform.

As example (1) shows, island effects in Chinese occur when the *in situ wh*-phrase is the reason-denoting adverb *weishenme* ‘why’. Not every *in situ wh*-phrase induces island effects. This fact is acknowledged by Huang (1982), and independently found in Japanese and Korean (Watanabe 1992; Lasnik and Saito 1992). Some syntacticians believe that this is the same in English (Lasnik and Saito 1992; Cheng 2009). For example, (4a) has been argued to be much worse than (4b). In the former, *why* is extracted. In the latter, a *wh*-argument is extracted.

- (4) a. #*Why_i did you hear about the claim that the police said [that the murderer killed the man t_i]*?
 b. ?*Who_i did you hear about the claim that the police said [t_i killed the man]*?

However, upon closer scrutiny, we can see that there is no analogy between English and Chinese here. The above contrast is misleading in that the island domain is chosen to be an NP

complement. Among complex NPs, relative clauses are known to create far more severe island effects than NP complements. When we test the *wh*-argument vs. *why* distinction in relative clauses, the contrast is no longer clear-cut, as an argumental *wh*-question is as unacceptable as a *why*-question, illustrated in (5):

- (5) a. #*Who did you see the dog [that bit]?*
 b. #*What did you admire the woman [that wrote]?*

In Chinese, on the other hand, *in situ wh*-arguments does not induce island effects at all, while *in situ why*-phrases are completely unacceptable in island environments, as shown in (6):

- (6) a. *Ni kanjian [yao-le shei] de gou?*
 You see bite-PRF who REL dog
 ‘Did you see the dog that bit who?’
 b. #*Ni xiang mai [ta weishenme mai] de shu?*
 You want.to buy he why sell REL book
 #‘Do you want to buy the book that he sold why?’

Another issue is that, in general, *wh*-adjuncts in English are known to favor a matrix construal. Therefore, even if there is a contrast in judgments between (4a) and (4b) in NP complements, it could simply be a result of *wh*-adjunct’s preference for matrix associations. Yet this cannot be the case for Chinese. Importantly, other *wh*-adjuncts do not behave like *why* in island environments. The acceptability of (7) shows that *na’er* ‘where’ patterns with *wh*-arguments, rather than with *weishenme* ‘why’:

(7) *Ni xuyao [na'er neng mai-dao] de shu?*

You need where can buy-RES REL book

‘Where_i do you need the book(s) that one can get at that place_i?’

When we do a thorough investigation on Chinese *wh*-adjuncts, we do find some adjuncts that induce island effects. However, these adjuncts are in a sense all quasi-*why* reason adverbs. For example, *zenme* in Chinese has both a manner and a causal reading. Island effects show up only when we force a causal reading of *zenme*:

(8) a. *Ni zhi ken mai [ta zenme zuo chulai] de jianbing?*

You only be.willing buy he how make out REL crepes

‘You would only buy the crepes that he made how (in what manner)?’

b. #*Ni jian-guo [ta zenme hui renshi] de ren?*

You meet-EXP he how.come would know REL person

#‘You have met the person that how come he would know?’

In Japanese, a similar pattern is found (Fujii and Takita 2007). Apart from *naze* ‘why’, *nan-de* also causes island effects. Importantly, *nan-de* has two readings. The first one is a manner reading similar to *how/in what manner*. The second reading, termed a causal reading, is close to the English *how come*.

In sum, the empirical picture buttresses the view that something is special about *why*. To explain island effects in *wh-in situ*, one needs to look into what sets apart *why* from others.

Finally, even if we concede that there is an argument-adjunct divide, this distinction alone does not favor a covert movement analysis of island effects. For example, Reinhart (1998) proposes that *wh*-indefinites should be interpreted via choice functions when taking wide scope.

However, *wh*-adverbials differ from *wh*-arguments in that (i) the former does not have a nominal set and (ii) they denote functions ranging over higher-order entities. In other words, *wh*-adverbials cannot be interpreted via choice functions, and therefore always take local scope. This, according to Reinhart, explains why sentences such as (9) are ungrammatical:

- (9) a. #Who fainted because you behaved how?
 b. ??*Who fainted why?*

Similarly, if *wh*-adverbials cannot be selected by choice functions, we can already account for the island effects induced by adjuncts in Chinese, independent of whether covert movement takes place or not.

In sum, strong islands initially serve as the primary locality constraint that motivates covert movement in *wh-in situ*. However, evidence accumulated over the years casts doubt on a connection between islands and movement in Chinese. It is against this background that another locality constraint, intervention effects, gains traction. In recent years, intervention effects have played a central role in reintroducing LF covert movement. The following illustrates intervention in Chinese *wh*-questions:

(10) a. #*Meiyou ren weishenme cizhi?*

No person why resign

‘Why did nobody resign?’

b. *Meiyou ren yinwei shenme cizhi?*

No person because.of what resign

‘What reason_i is such that nobody resigned for t_i?’

The unacceptability in (10a) is purported to arise because a quantifier c-commands the *in situ wh*-phrase. Intervention is thus characterized as a constraint that bans a scope-taking element from c-commanding the *in situ wh*-phrase. In German, an *in-situ wh*-phrase in a scope-marking sentence cannot take wide scope when a negative word intervenes between the *wh*-phrase and its scope position. This is illustrated in the following (*was* is a place-holder *wh*-phrase that overtly marks the scope position) (Beck 1996, 1):

(11) #*Was glaubt Hans nicht, wer da war?*

What believes Hans not, who there was

‘Who does Hans believe was not there?’

This phenomenon is also analyzed as an intervention effect, given that it can be characterized by the same structural constraint mentioned above. Similarly, it has been argued that English multiple *wh*-questions exhibit intervention, such as the following examples given by Pesetsky (2000):²

² For many English speakers, sentences such as (12) are not as unacceptable as Pesetsky reported. Moreover, under the right contexts, the so-called intervention effects would go away, as in the following (due to Rui Chaves):

- (12) a. ??Which diplomat should I not discuss which issue with ___?
 b. ??Which student did no one give which book to ___?
 c. ??Which teacher did very few children want to show which picture to ___?

Here in this case, similar to German, negative quantifiers such as *not*, *no one* or *very few* seem to prevent the *in situ wh*-phrase from taking wide scope. Both Beck (1996) and Pesetsky (2000) endorse a covert movement approach to intervention effects, namely, *in situ wh*-phrases undergo LF movement, and an intervening scopal element blocks such movement.

In sharp contrast to the pattern we have just seen in strong islands, where no *in situ wh*-phrases other than reason adverbs seem to induce islands, intervention effects have been found to be stable in clear natural classes (focus-sensitive expressions and quantificational elements, etc.) and to be crosslinguistically robust. Indeed, intervention effects have been documented in a wide range of genetically and typologically distinct languages: Asante Twi, Bangla, Dutch, English, French, German, Hindi-Urdu, Japanese, Korean, Malayalam, Mandarin, Passamaquaddy, Persian, Thai, and Turkish (Eilam 2008). While this could lend an extremely strong support to the covert movement approach, the exceptional robustness might also suggest that intervention effects are related to some universal features of natural language that belongs to the basic interpretational component of grammar. Indeed, Beck switches to this view, and later comes up with a semantic account (Beck 2006; Beck & Kim 2006) that supersedes the covert movement theory in Beck (1996).

(i) [Some cakes are sugar-free because some children are diabetic]
 Which kid should I not give which cake to?

(ii) [Some jokes are too inappropriate to be well-received as show-openers in some locations]
 Which jokes should I not open which shows with?

These impressionistic observations have inspired alternative theories to explain intervention effects with semantic and pragmatic mechanisms (*e.g.* Beck 2006 and Tomioka 2007). I turn to this issue in Chapter 3.

Beck explains the intervention data in German and English above by showing that both the *wh*-phrase and the focus phrase compete for the same focus value at LF. Tomioka (2007) also presents a pragmatic account with a similar spirit. He argues that since both the focus phrase and the *wh*-phrase are associated with a focus reading, they can be seen as encoding sentence-new information. As such, Tomioka argues that a sentence with two foci violates the basic information structural dichotomy of focus and background. Finally, Mayr (2013) argues that Beck is essentially right about focus expressions, except that we need not associate quantifier meaning with additivity, instead of focus value.

All these accounts converge in locating the explanation of intervention in the interpretational component of grammar. In these accounts, the scope of the *wh*-phrase is captured by a Q operator or particle. As such, there is no convincing motivation for covert movement to take place.

So far the recent developments in intervention theories do not bode well for covert movement. Yet such accounts have said nothing about the Chinese data. Notably, if we compare Chinese with German or English, we see that Chinese intervention revolves around the reason adverb *why* again, as (10) illustrates. This is reminiscent of island effects. Furthermore, as (13) shows, non-*why wh*-phrases do not cause intervention, showing that the connection between intervention and islands is warranted.

(13) ?*Daduoshu ren jie-guo nei-ben shu?*

Most person borrow-EXP which-CLF book

‘Which book has most people borrowed?’

In other words, *why* contrasts with other *wh*-phrases in strong island contexts. *Why* also contrasts with other *wh*-phrases in intervention contexts. Much is at stake here: we need to determine whether islands and intervention in Chinese *why*-questions must be explained in terms

of covert movement, given that other *wh*-phrases do not induce these two effects. If covert movement is the only way to address the locality constraints in *why*-questions, this would constitute one of the strongest arguments for the existence of covert movement. On the other hand, if we are able to predict both locality constraints with no recourse to covert movement, then the Chinese *wh-in situ* data offer no evidence that covert movement is needed. Actually, the attractiveness of covert movement could be even more weakened, since other East Asian languages have been shown to exhibit similar patterns with Chinese, and most probably receive similar explanations (Miyagawa 1997; Kuwabara 1998).

1.2 Preview of the Proposals

This thesis presents a speech-act based account of strong island effects and intervention effects in *why*-questions. My central claim is that *why* modifies root proposition. In all environments, the *why*-clause receives a root clause reading. As such, *why* exhibits the main clause phenomena, and this is manifested as an island effect when *why* embeds in a strong island domain. Furthermore, because *why* is a proposition modifier, generalized quantifiers and focus-sensitive expressions must be interpreted within the scope of *why*, because they are operators that receive their value at the proposition level. However, in intervention contexts, quantifiers and focus expressions are forced to take wide scope over *why*. This leads to an incoherent explanation.

Based on my proposals, I claim that strong island effects and intervention effects in *why*-questions receive a semantic explanation. Since other *wh*-questions induce neither island nor intervention effects, we need not employ the machinery of covert movement for all *wh*-questions

Having investigated all the situations, my final conclusion is that Chinese provides no evidence that covert movement exists.

1.3 Outline

Chapter 2 examines strong islands. I first show that strong islands arise in *why*-questions, and propose that this question-specific island effect is epiphenomenal, following from the constructional constraint that requires *why*-questions to be root clauses. Chapter 3 looks at intervention effects created by *why*-questions, and argue that these facts can be captured by the same speech-act based approach to the semantics of *why*-questions. After discussing *why*-questions, I will briefly look at other intervention-sensitive *wh*-phrases such as *which-phrase* and *what*, and show that a similar approach to the one presented for *why*-questions cannot be extended to them.

Building on the results of the chapters on *why*-questions, Chapter 4 examines islands and intervention created by the alternative question construction, the A-not-A questions, in detail. I propose that the account of *why*-questions can be extended in a straightforward fashion to explain the oddness in A-not-A questions. In Chapter 5 I conclude the dissertation.

Finally, I would like to explain my terminology briefly. For the mainstream island and intervention literature, the low acceptability assigned to sentences with island and intervention violations have frequently been termed ‘ungrammaticality’. I consider ungrammaticality to presuppose that the low acceptability is caused by syntactic reasons. My central claim in the thesis, meanwhile, is to argue that none of these odd sentences are syntactically ill-formed. Instead, the unacceptability we are dealing with seems to be interpretational by nature, *i.e.* a native speaker cannot assign an interpretation to a *why*-question in embedded contexts. A related problem is the use of the term ‘island’ and ‘intervention’. By strong islands, the previous literature refers to the phenomenon of unacceptability induced in the contexts of an adjunct clause, a complex NP or a subject clause. The term itself suggests that the nature of such

unacceptability is syntactic. The coinage of the term dates back to Ross (1967), who proposes a structural approach to the phenomena, and believes that these clauses metaphorically constitute an island from which nothing gets out. Even in Ross' original paper, he notices some caveats to the purely structural view, albeit the caveats are so often ignored by later proponents of the island theories. In my theory, there is nothing special about each island environment that distinguishes it from other embedded clauses such as a complement clause. In this sense, there are no island effects in Chinese *in situ wh*-questions. Similarly, the term intervention assumes that something gets in the way of movement. My theory does not resort to movement nor competition, hence there is no real intervention involved. However, I still consistently use the terms 'strong islands' and 'intervention effects' to refer to the types of phenomena that are already well established in the tradition, without taking these terms in their literal sense.

The reported judgments of novel data are based on three monolingual native speakers of Mandarin Chinese and myself.

2 *Why*-questions and Strong Islands in Chinese

2.1 Introduction

2.1.1 The Problem

This chapter proposes that strong island effects in Chinese *wh*-interrogatives have a semantic explanation. Specifically, I show that there is a contrast in Chinese between the reason-denoting adverb *weishenme* ‘why’ and the other interrogative *wh*-phrases. *Why* causes island effects, the rest do not. This contrast is shown in the following Complex NP islands (CNPC) data:³

- (1) a. #Ni xiang mai [ta weishenme mai] de shu?
You want.to buy he why sell REL book
 #‘Why_i do you want to buy the book [that he sold t_i]?’
- b. Ni xiang mai [ta yinwei shenme mai] de shu?
You want.to buy he because.of what sell REL book
 #‘What is the reason_i such that you want to buy the book [that he sold for t_i]?’

³ In this thesis, I put a # sign before my non-English examples and also their English translations to indicate that the examples are unacceptable because their meanings are infelicitous. Such examples constitute a very large portion of the overall examples used in this thesis. This treatment might be confusing. This is especially so, since the same set of examples have been given acceptable English translations in the previous literature. However, I argue in this thesis that many translations in the previous literature are flawed. They often fail to convey what the unacceptable non-English examples intend to mean. This problem is due to the widely held belief by the majority of previous authors that unacceptable examples in Chinese island effects and intervention effects are all syntactically ill-formed. Where relevant examples are discussed, I will explain what the intended readings are, and how previous literature assigns a different reading that is not in accordance with native speakers’ intuition.

c. Ni xiang mai [ta wei-le shenme mai] de shu?

You want.to buy he for-ASP what buy REL book

#‘What is the reason_i such that you want to buy the book [that he sold for t_i]?’

d. Ni xiang mai [shei xie] de shu?

You want.to buy who write REL book

#‘Who_i do you want to buy the book [that t_i wrote]?’

2.1.2 My Account of Strong Island Effects

In a nutshell, I provide evidence that *why* is a proposition-level modifier, whereas other *wh*-adverbs are predicate-level modifiers. *Why* takes a proposition and maps it to a set of alternative propositions. This is an operation on propositions, rather than a proposition by itself. I suggest a preliminary analysis where proposition-level operations occur in main clauses, but not in embedded clauses. If we take this view, then it follows that sentential force necessarily associates with a *why*-clause.

As a root clause, the *why*-clause should not be embedded. I conclude that strong island effects arise because the requirement for the *why*-clause to be a root clause cannot be satisfied in island contexts. However, there is nothing special about these island domains *per se*. Indeed, I provide evidence that a *why*-question cannot occur even in an embedded complement clause. In other words, the so-called strong island effects are epiphenomenal.

According to the previous approaches to Chinese strong island effects, *wh*-interrogatives may be licensed by either of two mechanisms: unselective binding (Pesetsky 1987; Reinhart 1998) and covert LF movement (Huang 1982; Chomsky 1986). Covert movement is subject to a

structural locality constraint and leads to island violations. An *in situ* unselective binding process is exempt from island violations. Under this view, *why*-questions are always licensed via covert movement. I take exception to this view, because there are no independently motivated grounds that explain the reason the syntactic licensing of *why* differs from that of other *wh*-phrases. Motivations have been proposed based on a distinction between arguments and adjuncts. Nevertheless, I argue that this distinction is contrary to fact, since *wh*-adjuncts, except for *why*, patterns with *wh*-arguments.

The rest of this chapter is structured as follows. Section 2.2 provides a critical review of Huang's assumption (Huang 1982) that the strong island effects in Chinese *in situ wh*-questions follow from a structural locality constraint. Section 2.3 discusses the idiosyncratic syntax and semantics of *weishenme* 'why'. Section 2.4 goes one step further and proposes that *why*-questions are necessarily root questions, and that island effects arise because *why*-clauses cannot be embedded. Section 2.5 concludes the chapter.

2.2 Rethinking the Argument-Adjunct Asymmetry

2.2.1 Previous Theories

Huang (1982) first draws attention to the fact that, in Chinese *in situ wh*-questions, certain *wh*-phrase cannot be embedded within a strong island domain. For example, (2a) illustrates a regular *in situ wh*-question in Chinese. The *wh*-adjunct *weishenme* 'why' does not front to the sentence-initial position as in many European languages, but stays *in situ*, occupying a sentential adverbial or subordinative clause position (the position for a *because*-clause in Chinese) that immediately precedes the main predicate of the sentence. As (2b) shows, *weishenme* fails to occupy the same position when it is part of a relative clause.

- (2) a. Ta zuotian weishenme qu shudian?
He yesterday why go bookstore
 ‘Why did he go to the bookstore yesterday?’
- b. #Ni xihuan [ta weishenme xie] de shu?
You like he why write REL book
 ‘Why_i do you like the books that he wrote t_i?’

Weishenme ‘why’ also induces unacceptability in other strong island domains. In (3a), the sentence is unacceptable with *weishenme* inside an adjunct. (3b) exemplifies the unacceptability of embedding *weishenme* in a subject clause.

- (3) a. #Ta [weishenme jiegu yuangong] yihou bei laoban piping-le?
He why sack employees after by boss criticize-ASP
 #‘Why_i was he criticized by the boss [after he sacked employees t_i]?’
- b. #[Ta weishenme cizhi] zui hao?
He why resign most be.good
 #‘Why_i will [that he resigned t_i] be the best?’

The infelicity of (2-3), according to Huang, is reminiscent of the canonical island effects in English, illustrated below.

- (4) a. #Who_i do you like the man [who talked to t_i]?
 b. #Who_i did you feel satisfied [after John talked to t_i]?
 c. #Who_i would [for John to talk to t_i] be nice?

Despite the fact that the *wh*-elements in (2b), (3a) and (3b) stay *in situ*, whereas those in (4) are fronted, Huang argues that we can explain the above Chinese data if the *in situ wh*-phrases in

Chinese are subject to the same island constraints as (4). This means (2b) is ruled out because the relative clause is impenetrable for movement. Similarly, (3a-b) are subject to the adjunct island constraint and the subject island constraint. According to Huang, a *covert* movement is occurring in these examples. The *wh*-element is located inside an island domain at surface syntax, but moves out of that domain to take its scope at LF. That is, in Chinese, *wh*-phrases do move, the difference being that movement does not take place at a surface level so it does not get reflected in phonology or linear order. One could easily imagine that languages are parametrized over the options of in which module (LF or surface syntax) to move their *wh*-phrases.

Importantly, however, covert movement has to apply selectively, because the island sensitivity in Chinese depends on the choice of *wh*-phrases. In (5), the *wh*-elements *shei* ‘who’ or *yinwei shenme* ‘because of what’ does not cause complex NP island effects, in contrast to (2b).

(5) a. Ni xihuan [shei xie] de shu?

You like who write REL book

‘Who_i do you like the book(s) that (s)he_i wrote?’

b. Ni xihuan [ta yinwei shenme xie] de shu?

You like he because.of what write REL book

‘Which reason_i do you like the book(s) that he wrote for that reason_i?’

A plethora of theories (Nishigauchi 1990; Watanabe 1992; Aoun and Li 1993; Tsai 1994) suggest that not all *wh*-phrases in Chinese move at LF. For example, Tsai (1994) argues that Chinese *wh*-arguments do not carry their quantificational force inherently, but function as variables to be bound by a separate interrogative operator, in a mechanism called unselective binding (Pesetsky 1987; Reinhart 1998). In unselective binding, the interrogative operator merges directly at the matrix scope position and, when merged, marks up the scope of the

wh-argument that it binds so that the *wh*-argument itself need not move. Tsai further claims that there are parametric differences among languages in terms of the locus of the operator-variable binding. In English, in contrast to Chinese, the interrogative operator binds its variable at the morphological component, before the *wh*-phrase enters syntactic derivation. As a result, at the syntactic level, the interrogative operator needs to move in order to take scope.⁴

According to the above assumption, all English *wh*-phrases induce island effects because their interrogative operators must move at surface syntax. In Chinese, if a *wh*-phrase may be bound by an operator at a distance, it need not move. Presumably, *weishenme* ‘why’ cannot be bound in this way, and therefore must move to take scope. This would explain the inducing of island effects.

One way to derive the difference between *weishenme* and other *wh*-phrases is to let the interrogative operator quantify over a choice function, which applies to a non-empty nominal set and picks out an individual from the set. According to Reinhart, non-nominal *wh*-adverbials differ from nominal *wh*-adjuncts (*i.e.* adjuncts that take nominal *wh*-phrases as arguments) in that the former do not have an individualizable, referential nominal set. This difference explains the contrast in (6), which Reinhart treats as involving a nominal vs. non-nominal asymmetry (Reinhart 1998, 42).

⁴ According to one standard assumption within the minimalist literature (Chomsky 1995), *wh*-phrases are not pied-piped to the scope position as a whole. Instead, it is the bundle of a *wh*-phrase’s formal features that is attracted to C at LF. Hence, Tsai’s proposal needs to be understood as a LF-constraint on *wh*-feature movement, rather than on phrasal movement (see Pesetsky 2000 for a detailed discussion). For presentational purposes, however, this chapter abstracts away from the distinction between feature and phrasal movement, since it does not bear directly upon the issue of island effects in *why*-questions.

- (6) a. #Who fainted when you behaved *how*?
 b. Who fainted when you behaved *in what way*?

By the same token, one can say that *weishenme* is a non-nominal *wh*-adjunct and does not lend itself to a choice function interpretation. This is the position taken by Tsai (2008) and Stepanov & Tsai (2008), among others. In support of this claim, Tsai points out that *weishenme* is distinct from another reason *wh*-adjunct *yinwei shenme* ‘because of what’. Tsai believes that the two phrases mean the same thing. They only differ structurally. *Weishenme* does not take a *wh*-argument, whereas *yinwei shenme* is a nominal *wh*-adjunct. In (2b) we already see that *weishenme* induces CNPC islands, and in (5b) we see that *yinwei shenme* does not induce CNPC island effects. In (7), the two examples are repeated in juxtaposition to one another, so that we can see the contrast more clearly:

- (7) a. #Ni xihuan [ta weishenme xie] de shu?
You like he why write REL book
 #‘Why_i do you like the book(s) [that he wrote t_i]?’
- b. Ni xihuan [ta yinwei shenme xie] de shu?
You like he because.of what write REL book
 #‘Which reason_i do you like the book(s) [that he wrote for t_i]?’

This contrast is taken by Tsai to substantiate Reinhart’s theory. Because it is a nominal *wh*-adjunct, *yinwei shenme* can be restricted via a choice function. In contrast, *weishenme* is non-nominal and fails to lend itself to a choice-functional interpretation.

Tsai (1994, 1999) further notes a second contrast, between *weishenme* and the purpose adverbial *wei-le shenme* ‘for what’. For the latter, an aspectual suffix *-le* is attached to the

prepositional head *wei* ‘for’. In Chinese, prepositions often come from co-verbs and may receive aspectual marking (Zhu 1982). Tsai contends that the aspectual marking is a sign that *wei-le shenme* is still formally transparent, unlike the fossilized, non-decomposable *weishenme*. Accordingly, although *wei-le shenme* is formally very similar to *weishenme*, it is assigned a different structure (analyzed as a nominal *wh*-adjunct) by Tsai. The prediction would be that *wei-le shenme* does not induce island effects, and this prediction is borne out as in (8):

- (8) Ni xihuan [ta wei-le shenme xie] de shu?
 You like he for-PRF what write REL book
 #‘What reason_i do you like the book [that he wrote for t_i]?’

Again, this is taken to strengthen the plausibility of an argument-adjunct asymmetry. Finally, in Japanese, another East Asian *wh-in situ* language, we find a very similar pattern. Japanese exhibits all three strong island effects associated with the non-nominal reason adverbial *naze* ‘why’.⁵ Additionally, in Japanese, *naze* ‘why’ contrasts with *doo yuu riyuu-de* ‘for what reason’, another *wh*-argument-taking reason adjunct. The latter violates the three island constraints, exactly as is the case in Chinese. The following example from Nishigauchi exemplifies the *naze* vs. *doo yuu riyuu-de* contrast (Nishigauchi 1990):

⁵ I here discuss island effects in terms of an areal type, because not every *in situ* language exhibits the same pattern. For example, in Sinhala and Bengalese, another areal type of *wh-in situ* languages, the island patterns are different (Bayer 2006; Kishimoto 2005). At present, I do not attempt to cover these languages.

- (9) a. #Kimi-wa [[kare-ga naze kai-ta] hon-o] yomi masi-ta ka?
You-TOP he-NOM why buy-PST book-ACC read HON-PST Q
 ‘Why_i did you read the book [that he bought t_i]?’
- b. Kimi-wa [[kare-ga doo yuu riyuu-de kai-ta] hon-o] yomi masi-ta ka?
You-TOP he-NOM what reason-OBL buy-PST book-ACC read HON-PST Q
 ‘What reason_i did you read the book [that he bought for t_i]?’

Furthermore, there is a third *wh*-adverbial in Japanese, *nan-de*, which is able to express a reason reading. According to the Japanese literature (Watanabe 2001, Fujii & Takita 2007, Fujii et al. 2014), *nan-de* can receive not only a reason reading but also a manner reading in non-island environments. Nevertheless, when it is embedded in a strong island domain (*e.g.* a complex NP), *nan-de*’s reason reading is not available and the manner reading is obligatory. The meaning ambiguity of *nan-de* has been analyzed as having arisen from structural ambiguities, such that *nan-de* is a contracted PP (*nani-de* ‘what-with’) when expressing a manner reading, but an undecomposable adverb when expressing a reason reading. In other words, the island sensitivity of *nan-de* is purported to follow from the argument-adjunct asymmetry.

2.2.2 Problems

By characterizing the unruly behaviors of *weishenme* ‘why’ as following from syntactic categorial asymmetry, the structural theories as laid out above predict that all non-nominal *wh*-adverbials exhibit island effects. However, a look beyond *weishenme* quickly shows that this prediction is not borne out.

In Chinese, temporal and locative *wh*-adverbials are adjuncts that do not take *wh*-arguments. Structurally, *shenmeshihou* ‘when’ and *na’er* ‘where’ fail to be decomposable into an adjunct

head taking a nominal *wh*-part. Based on the prediction above, they should behave like *weishenme* ‘why’. However, both *wh*-phrases are island-free (Cheng 2009), similar to *wh*-arguments and nominal *wh*-adjuncts, not to *weishenme*. We can see this in (10).

(10) a. Ni xihuan [ta shenmeshihou xie] de shu?

You like he when write REL book

‘When_i do you need the book(s) that he wrote t_i?’

b. Ni xuyao [na'er neng mai-dao] de shu?

You need where can buy-RES RELbook

‘Where_i do you need the book(s) that one can buy at that place_i?’

In (10a), *shenmeshihou* ‘when’ expresses a set of (domain-restricted) time slots, one of which is the time for a book-writing event. Similarly, in (10b), *na'er* ‘where’ ranges over a set of places, one of which is the location of a book-buying event in the actual world. This means that, although they are syntactically adjuncts, they are able to express referential set in the same way as argumental *wh*-phrases.

To explain (10) away, one can imagine revising Reinhart’s original proposal. For instance, the choice function interpretation can be made sensitive to semantic referentiality, instead of to whether the choice function operates on a domain of first-order sets or a domain of second-order sets (cf. Cinque 1990 and Rizzi 1990). Nevertheless, it is not easy to determine which adjuncts *cannot* denote referential meaning. We have already seen that temporal and locative adjuncts can clearly be referential. When it comes to amount adverbials or manner adverbials, the situation is similar. As Kroch (1989) notes, the amount phrase in the following sentence must be interpreted as denoting individualized amounts:

- (11) The amount that I paid for the book was enough to cover two meals in a good restaurant.

Correspondingly, it would be reasonable to say that the amount *wh*-adjunct *how much* (*duoshaoqian* in Chinese) can be referential. By the same measure we can also show that the manner *wh*-adjunct *how* (*zenme* in Chinese) is referential. It seems that, in general, it is not the case that *wh*-adjuncts cannot be referential. *Wh*-adjuncts differ from *wh*-arguments in the *readiness* by which a contextually constrained, explicitly enumerable set of individuals can be anchored. All *wh*-adjuncts may admit an explicit referential set reading, given proper contextualization. However, nominal *wh*-phrases more easily induce a clearly defined set. Such differences are often described in terms of D-linking effects (cf. Pesetsky 1987; Kroch 1989). Note that D-linking effects do not just involve the distinction between adjuncts and arguments. In addition to the contrast between *how* and *in what manner*, which Reinhart discusses in the multiple *wh*-construction, there is also the contrast between a regular argumental *what* and a *which*-phrase. Therefore, such effects are more a matter of degree, instead of a distinction inherently built in the syntax.

Returning to the Chinese *in situ* island example, a *which*-phrase invites better judgments than non-D-linked phrases, since the former clearly denotes an enumerable set of individuals. However, when a more clearly structured set can be anchored by contextualization, judgments for a non-D-linked *wh*-phrase also improve. Therefore, even *zenme* ‘how’ and *duoshaoqian* ‘how much’ are significantly ameliorated given proper contextualization. For instance, in (12)-(13) such contexts are provided, and no island effects appear.⁶

⁶ Similar to Chinese, *how* in Japanese may occur in island environments when the context is appropriate (Nishigauchi 1990, 99):

(i) [Kare-ga doo-yatte kai-ta]-ga itiban suki-desu ka?
He-NOM how draw-PST-NOM most be.favorable Q
 ‘You like the picture that he drew how?’

(12) A: Wo gangcai zai shudian kan-dao ji-ben xiang mai de shu.

I right.now LOC bookstore see-RES one-CLF want.to buy REL book.

Wo cha-le yixia mei-ben shu mai duoshaoqian.

I check-PRF once each-CLF book sell how.much.

‘I saw several books that I want to buy at the bookstore. I checked for each book, how much it costs.’

B: Ni hui mai [mai duoshaoqian] de shu?

You will buy sell how.much REL book

‘How much_i will you buy the book(s) [that was sold for t_i (amount of money)]?’

(13) A : Shangdian de heiban shang xie-zhe mei-zhong nailao chushi shi zenme zuo de.

Store REL blackboard top write-IMPF each-CLF cheese cook FOC how make PRT.

‘On the blackboard of the store reads the instruction of how the cook make each type of cheese.’

B: Guke jueding mai [chushi zenme zuo] de nailao

Customer decide buy cook how make REL cheese

‘How_i did the customer decide to buy the (type of) cheese that the cooks made t_i?’

This means D-linking effects in Chinese *in situ wh*-questions are very context-sensitive. Out of the blue, judgments of an *in situ how much*-question or a *how*-question in island environments are marginal in Chinese. However, amelioration is witnessed once we obtain a reading where

how much/how denotes an explicit set of degrees or manners (Bayer 2006).⁷

If *weishenme* ‘why’ in Chinese is subject to the same contextual manipulation as *zenme* or *duoshaoqian*, the Chinese strong island effects should be able to be reduced to D-linking effects. This claim is seldom entertained, because the judgment pattern of *weishenme* ‘why’ is fundamentally different. As with other non-D-linked *wh*-phrases, *why* also allows an explicit set reading under the right contexts. For example, in (14), the universal quantifier is interpreted as taking wide scope over *weishenme* in the embedded *weishenme*-question. Hence, a pair-list reading arises such that for each of the books under discussion, there exists a corresponding reason that accounts for the writing of that book.

(14) Wo yijing zhidao-le mei-ben shu ta shi weishenme xie de.

I already know-ASP every-CLF book he FOC why write PRT

‘I already knew that for each book, why he wrote that book.’

If the island effect that arises in an *in situ weishenme*-question is really the D-linking effect, the context in (14), which allows for an explicit set reading of *weishenme*, should also allow for significant amelioration of the island effect. Nevertheless, no such rescue happens. If we look at example (15), we see that the context (represented by A’s utterance) is constructed in line with (14), creating a set of explicit reasons, each one corresponding to one particular book-writing event. Even so, the question asked by B still remains utterly impossible to understand.

⁷ Most native speakers I consulted rated the questions in (12) and (13) as no worse than questions with an argumental *wh*-phrase. Other subjects still rated the argumental *wh*-questions higher. The important fact, nevertheless, is that everyone reported that manner *wh*-questions and degree *wh*-questions are better than *why*-questions. Indeed, even those speakers who were less comfortable with (12) and (13) understood immediately what the sentences were intended to mean and were able to provide relevant answers, whereas in the cases of *why*-islands no proper interpretation arose at all.

(15) A : Wo yijing zhidao-le mei-ben shu Lisi shi weishenme xie de.

I already know-ASP every-CLF book Lisi FOC why write PRT

Mei-ben shu, Lisi xie de shihou dou shi wei-le yi-ge

Every-CLF book, Lisi write REL time all COP due.to-PRF one-CLF

butong de yuanyin.

different REL reason.

‘I already knew that for each book, why Lisi wrote it. Actually, for every single book, Lisi would write it for a different reason.’

B : #[Na Lisi zui manyi [ta weishenme xie] de shu?

Then Lisi most be.satisfied he why write REL book

#‘In that case, why_i is Lisi_i most satisfied with the book [that he_i wrote t_i]?’

Therefore, (15) illustrates a very clear contrast between *why* and other non-D-linked *wh*-adjuncts. The unique phenomenon of *weishenme*-induced infelicity needs a unique explanation. The Chinese syntactic literature has rightfully noticed that the island effects observed in Chinese *weishenme*-questions are severe and not modulated by contextual factors. However, the syntactic solutions they come up with all involve other *wh*-adjuncts along with *weishenme*. Hence, previous theories have failed to tie the explanation of the strong island effects to the idiosyncrasies of *weishenme*.⁸ By looking for natural classes that are too broad, there is

⁸ Another related proposal (Tsai 2008) points out that the argument-adjunct asymmetry is only sensitive to the surface form of the *wh*-phrases. *Yinwei shenme* ‘because of what’ is morphologically transparent. It contains the morphologically decomposable *wh*-argument *shenme* ‘what’. *Weishenme* is argued to be opaque. Note *weishenme* can receive the morpheme-by-morpheme gloss of ‘for-what’. Tsai contends that this compositionality is only apparent. *Weishenme* is indeed grammaticalized, as when compared with the phrasal *wei-le shenme* ‘for-PRF what’, which takes an aspectual marker *-le* and is therefore truly compositional. This argument is hardly convincing to me. If this argument holds, we can similarly argue that manner phrase and degree phrase are all opaque and grammaticalized. For example, *duo-gui* ‘how-expensive’ is used to question price. An answer in the form of *Amount Phrase-gui* ‘XX amount expensive’ is impossible.

the tendency to ignore the inconvenient fact that *weishenme*-questions alone must be dealt with.

In the rest of this chapter, I develop a semantic explanation of the strong island effects in *weishenme*-questions. This is done by exploring the semantic idiosyncrasies of *weishenme*, and investigating how they contribute to an impossible reading for *weishenme*-questions. I will show that this account offers a unified solution to all three main strong island types: the CNPC effects, the Subject Island and the Adjunct Island effects. As such, this account stands as an alternative to the prevailing covert movement approach to the island phenomena in East Asian languages.

2.3 The Syntax and Semantics of *Why*

At least since Bromberger (Bromberger 1992), people have noticed that the adjunct *why* behaves in a different way from other *wh*-adjuncts. When we look at a mono-clausal sentence such as the following (Villata et al. 2014), one gets the feeling that *why* does not bind a trace that links to the VP *leave*.

- (16) Why did John leave early?

More generally, in a *why*-question, the fronted *why* does not seem to associate with any variables in the clause that it attaches to. We ask question (16) when we know that John left early, and wonder what *causes* this event to occur (This interpretation is first mentioned in the literature by Lawler 1971). This is different from a scenario where there is one particular reason

-
- (i) a. Ni xiang mai [mai duo-gui] de shu?
 You want buy sell how-expensive REL book
 ‘How much_i do you want to buy books that sells t_i?’
 b. Sanshi-kuai qian. / #Sanshi-kuai-gui. / #Sanshi-kuai qian gui.
 Thirty-CLF money. / Thirty-CLF-expensive./ Thirty-CLF money expensive.

Therefore, this morphological explanation still fails to address the issue of what causes *why*, but not others, to induce island effects.

for which John left, and we want to find out what that reason is. This distinction is, for some speakers, extremely hard to tease apart. For many speakers, though, this distinction becomes clearer in a scopal context. Bromberger (1992) shows that only one reading is available in the following quantificational environment:

(17) Why did three men leave?

Reading A: ‘Why did three (rather than, say, two) men leave?’

Reading B: #‘What reason_i did three men have t_i for leaving?’

In reading A, an event, *three men left*, is presupposed. By wondering why this event occurs, we are committed to a situation in which the total number of people that left has to be three. In reading B, it is also the case that a group of three individuals left. Yet there is no requirement that, in this situation, *altogether* three people left. There could be other individuals who left, but for some reason the speaker is only concerned with a specific group of three people. When it happens that only three people left in the context, the two readings are not distinguishable. Crucially, however, when the context contains more than three individuals having left, the *why*-question in (17) cannot be uttered, at least according to the speakers Bromberger consulted.

Bromberger further notices that a similar situation happens in embedded contexts. This can be exemplified by the examples in (18) (Cattell 1978; Oshima 2007).⁹

⁹ Not everyone agrees with Bromberger and Cattell’s observations. For some speakers, reading B in (18a) is available. At present I do not know how to account for such discrepancies in judgments. It is worth pointing out that, in many cases, *why* can have an embedded construal when the matrix clause encodes backgrounded information and does not carry sentential force. This observation is due to Van Valin (1996). In Section 4.5, I return to the interaction between an embedded construal and information structural configuration. However, it is not clear to me whether this interaction has anything to do with reading B here.

- (18) a. Why did you want me to quit?

Reading A: ‘What reason makes you want me to quit?’

Reading B: # ‘What reason_i did you want me to have t_i for quitting?’

- b. Why did you regret that Dr. Graff left the academia?

Reading A: ‘What reason caused you to regret the fact that Dr. Graff
left the academia?’

Reading B: # ‘What reason_i did you regret that Dr. Graff have t_i for
leaving the academia?’

In both (18a) and (18b), *why* cannot be associated with the embedded clause (or, using the generative syntax term, the long-distance construal), and can only be associated with the matrix clause (or the short-distance construal).

Related to Bromberger’s observations, Tomioka (2009) notes that, in downward entailing environments, *why* triggers one presupposition, but not another.

- (19) Why did no one leave?

a. Presupposed: No one left.

b. Not Presupposed: There is a reason that no one left for.

In Japanese, where both *naze* ‘*why*’ and another reason adverbial *dooyuu riyuu* ‘for what reason’ stay *in situ*, the presupposition patterns are the opposite (Tomioka 2009). That is, a *naze*-question has the same presuppositional pattern as the English *why*-question:

- (20) Daremo naze ko-nak-atta-no?

Anyone why come-NEG-PAST-Q

‘Why did no one come?’

- a. Presupposed: No one came.
- b. Not Presupposed: There is a reason such that no one came for that reason.

By contrast, when in Japanese *naze* ‘why’ is replaced by *dooyuu riyuu* ‘for what reason’, a different reading arises.

(21) ?? Daremo doo yuu riyuu-de ko-nak-atta-no?

Anyone for what reason-OBL come-NEG-PAST-Q

‘For what reason_i did no one come t_i?’

- a. Presupposed: There is a reason such that no one came for that reason.
- b. Not Presupposed: No one came.

Based on these downward entailing data, Tomioka states a constraint for *why*, which is similar in spirit to Bromberger’s view. This is formulated as follows:

(22) Tomioka’s constraint:

In a why-question and only in a why-question, the proposition that corresponds to the non-wh portion of the question must be presupposed.

As I will show later in the dissertation, there are differences between Tomioka and Bromberger’s characterizations of *why*’s idiosyncrasies. However, this discrepancy need not bother us here. A further issue worth noting is that, if we consider *why* as unique among *wh*-phrases, it would lend insights into one interesting finding in child acquisition data. That is, infants tend to provide non-inverted *why*-questions long after they learned to invert other *wh*-questions (Brown, Cazden, and Bellugi 1969; Bellugi 1971; Labov and Labov 1978; Van Valin 2002; Thornton 2007). Many pilot studies converge on the findings that children seem to

analyze *why* as belonging to a separate category from other *wh*-phrases, since it can be shown that at one point they already know to generalize the subject-auxiliary inversion rule to all fronted *wh*-questions in a consistent manner, but almost never do so with *why*-questions. Van Valin suggests that this might be because children infer from the caregivers' inputs that *why* is adsentential by nature. When caregivers answer a *why*-question, the structure of the previous/original sentence always remains intact, inviting the impression that *why* is the place-holder for a separate sentence that gets 'appended' to the previous sentence. Van Valin provides a typical interaction involving the asking and answering of a *why*-question as follows (Van Valin 2002, 169):

(23) Adult caregiver: Mommy went to the store.

Child: Why? (Interpretation = why [Mommy went to the store]?)

Adult: Mommy went to the store, because she needs to get some food for dinner.

Another likely scenario is that children might have noticed that a *why*-question is frequently answered by a *because*-clause that is separated from the previous sentence. Depending on whether a *because*-clause is structurally and prosodically integrated with the main clause or not, the meaning of the entire sentence is different. For example, (24a) differs from (24b), and (24c) differs from (24d) (Tomioka 2009, citing Lawler 1971 and Linebarger 1987).

- (24) a. No one left because it's too late.
 b. No one left, because it's too late.
 c. He didn't do it because he couldn't do it.
 d. He didn't do it, because he couldn't do it.

In German, these two *because*-clauses are realized differently. As Scheffler (2013, 67–68)

shows, the VP-modifying *because*-clause can only be expressed by a *weil*-clause (with no V₂ order and exhibiting canonical subordinate clause properties), whereas the proposition-modifying, prosodically separate *because*-clause must correspond to a *denn*-clause (with V₂ order and non-subordinative, see Pasch et al. 2003 for a thorough discussion), as shown in (25).

(25) a. Paul ist nicht zu spät gekommen, weil er den Bus verpasst hat.

Paul is not too late come, because he the bus missed has

‘Paul wasn’t late because he missed the bus (but rather, because he still got work to do).’

b. #Paul ist nicht zu spät gekommen, denn er hat den Bus verpasst.

Paul is not too late come, because he has the bus missed

#Reading A: ‘Paul wasn’t late because he missed the bus (but rather, because he still got work to do).’

Reading B: ‘Paul wasn’t late, because he missed the bus.’

Therefore, it seems that since a *why*-question always corresponds to an outer *because*-clause, children might be further cued to acknowledge the distinctiveness of *why*. Other *wh*-phrases do not exhibit a comparable meaning difference that depends on whether an adverbial-headed subordinate clause is integrated to the matrix clause or not. We can see this from (26a-b). Furthermore, in a typical caretaker scenario, we don’t expect to encounter such exchanges as the one in (26c). For a sentence bearing sentential negation, it is quite rare to find a follow-up question containing a single-word *when*, where *when* scopes above the sentential negation operator.

- (26) a. No one left last year. = Last year, no one resigned.
 b. Mommy didn't go to the store yesterday. = Yesterday, Mommy didn't go to the store.
 c. A: Mommy didn't go to the store. B: ??When?

In general, Van Valin believes that a caretaker's (non-*why*) *wh*-question is most commonly a request for the children to answer by replacing the *wh*-part with a corresponding referential entity that resolves the question (*e.g.* replacing *when* with a specific time). In this sense, other *wh*-adjuncts tend to be more integrated with the previous sentence than *why* is.

If *why* is seen as the odd one out, it comes as no surprise that children mistakenly infer that the inversion rule does not apply to *why*. That is, the meaning differences and distributional patterns in everyday use make it clear to children that *why* falls within a separate class that differs from the other non-*why wh*-interrogatives. It is only when children reach adulthood that they redress their initial analysis. In the adult syntactic rules, *why* gets classified into the class of *wh*-phrases, and inversion targets *why* along with others. Possible explanations for this redress process vary (see Thornton 2007 for a detailed discussion). Quite possibly, this process of conflating *why* with other *wh*-phrases is aided by the typographic traditions in major European languages (*why* is a *wh*-form in English, a W-form in German, a P-form in French and Spanish, and so forth).¹⁰

The idiosyncrasies of *why* that I have discussed so far are compatible with a syntactic proposal given by Ko (2005). Ko (2005) puts forward a late merge approach where, in *wh-in situ* languages (*e.g.* Japanese, Korean and Chinese), *why* is merged at [Spec, CP] directly, rather than

¹⁰ Van Valin's finding is echoed by Thornton (2007) in a detailed longitudinal study of one infant's diary. Also, as first pointed out by Zwicky & Zwicky (1973), even in adult English, inversion is not necessary for all *why*-questions, as the following suggests:

(i) *How come you left the party so early?*

moved to [Spec, CP] from a lower position. This means *why* in these languages has a higher initial position than the other *wh*-phrases do.

For Ko, the direct merge option is parametrized across languages, such that in other languages, counterparts of *why* might still opt for low initial merge and subsequently move to a CP modifier position (Ko 2005, 900). This is due to the observation that in languages such as adult English, auxiliary inversion is still needed for *why*-questions, just as it is needed for other *wh*-questions. Here Ko is subscribing to the standard minimalist assumptions of the mechanism of auxiliary inversion, in which the auxiliary verb's fronting is a movement process from the head of InflP to the head of FocusP. When the auxiliary verb is fronted to the head of FocusP, this head is in a Spec-Head agreement relation with a *wh*-operator occupying [Spec, FocusP]. This satisfies the *wh*-criterion (Rizzi 1990), which states that a legal derivation for a *wh*-question is one where the *wh*-operator checks its feature by participating in the aforementioned agreement relation. The minimalist literature also leaves some leeway by allowing other strategies to satisfy the *wh*-criterion. Rizzi (2001) draws on Italian data and argues that *perché* 'why' in Italian does not trigger auxiliary inversion, because it merges directly at [Spec, IntP], and the head of IntP carries a [+wh] feature inherently (IntP is higher than FocP at the left periphery, according to Rizzi). Given that there is no motivation within the cartographic literature for there to be a structural distinction between [Spec, CP] and [Spec, IntP] in East Asian languages, we can essentially consider Rizzi's high attachment analysis of *perché* the same as Ko's proposal for East Asian *whys*. Therefore, the Spec-Head agreement relation necessary for *wh*-criterion is satisfied automatically, so the auxiliary verb is exempt from the need to move across the subject to fulfill the *wh*-criterion requirement. The point is that inversion is assumed to provide evidence that the relevant *wh*-operator initially merges at the relatively low position of [Spec, FocusP].

Therefore, languages exhibiting no inversion (*e.g.* Italian and Chinese) attach *why* directly at [Spec, CP], whereas languages exhibiting inversion (*e.g.* English) do not realize the UG option of a high-attached *why*.

This chapter does not attempt a discussion of the technicalities of cartographic syntax and parametrization. I am, however, skeptical about Ko's claim that *why*'s high attachment is parametrized, given Bromberger and Tomioka's data showing that the English *why* behaves similarly with Chinese or Japanese in scopal contexts. Additionally, if the English *why* occupies a high syntactic position, it would also explain the child acquisition data discussed above, in which children consistently treat *why* (as well as *how come*) differently in inversion, when they have unambiguously learned to invert other *wh*-questions.

Elsewhere, Rizzi (2009) notes many similarities between English *why*-questions and Italian *perché*-questions. For instance, in Italian, an intruding topic phrase may intervene between *perché* and the tensed auxiliary verb, as seen below.

(27) Perchè quando va a Milano Gianni compra il panettone?

Why when goes to Milan Gianni buys the panettone

'Why, when he goes to Milan, does Gianni buy panettone?'

In English, *why*-questions with intruding topic phrase are acceptable to some speakers (reported in Thornton 2007):

(28) a. Why, when he orders pizza, does John always choose pepperoni?

b. Why, in 2007, did he buy a 4-wheel drive vehicle?

In short, although I endorse the view that there are some universal semantic properties of *why* in all languages, my theory of islands would be valid if the Chinese *weishenme* exhibits the

proposition-taking, high attaching trait. For this reason, I will leave the unresolved issues of *why*'s parametrization across languages for future research. It suffices to say that evidence abounds that *why* and its equivalents across languages differ in their behaviors from the class of *wh*-interrogative phrases. This difference is not inherently interrogative, as the same behavioral differences are witnessed between *because*-clauses and the non-interrogative analogs of other *wh*-phrases. To go one step further, it is worth noting that the current discussions on *because*-clauses as proposition-level operators and event-level (or situation-level) operators are not exhaustive. For example, Sweetser (1990) famously observed that *because*-clauses exhibit other wide scope-taking properties at the epistemic level and the speech act level, illustrated by the following:

- (29) a. He loved her, because he came back.
 b. When will you be back tonight, because I got two tickets for the Dodgers' game.

Neither (29a) nor (29b) encodes a real-world causation relation. Instead, the *because*-clause in (29a) provides an explanation for the speaker's inference (hence this is called an epistemic level *because*), and the *because*-clause in (29b) provides an explanation for the speaker's performance of a speech act of questioning (hence a speech-act level *because*). Furthermore, the phenomenon noticed by Sweetser is not limited to *because*-clauses, but finds counterparts in conditional *if*, adversative adverbial *although*, among others (Sweetser 1990; Scheffler 2013). Theories on how to make sense of these different levels of meanings for reason/explanation differ, with Sweetser endorsing a pragmatic view and many others arguing for a semantic explanation (e.g. von Stechow 2011; Ebert et al. 2014). In this paper, I hold the view that the many levels of meanings for reason are lexically encoded by two separate Chinese *wh*-interrogatives, *weishenme* and *yinwei shenme*, in a division of labor. *Weishenme* encodes the proposition-level,

epistemic-level as well as speech-act level reason, while *yinwei shenme* encodes the situation-level reason. That is, regardless of the exact nature of this distinction between various types of reasons, I argue that the distinction is formally coded/conventionalized, following Horn's (1984) R-principle. In what follows, I lay out a theory of strong island effects in Chinese based on the properties of Chinese *weishenme* 'why'. In doing so, I am content with adopting Ko's treatment where Chinese *weishenme* (and its counterparts in Japanese and Korean) is directly interpreted at the scope position of [Spec, CP]^{11,12}.

¹¹ Ko's theory is motivated by data from intervention effects in Japanese and Korean. (i) shows that a Japanese *wh*-phrase normally cannot remain *in situ* if linearly preceded by a quantificational or focus-sensitive subject. As (ii) shows, *why* does not exhibit such constraint (adapted from Ko 2005):

- (i) a. #Taroo-sika nani-o yoma-nakat-ta no?
Taroo-only what-acc read-not-past Q
 'What did only Taroo read?'
 b. Nani-o Taroo-sika yoma-nakat-ta no?
- (ii) a. Taroo-sika naze sono hon-o yoma-nakat-ta no?
Taroo-only why that book-acc read-not-past Q
 'Why did only Taroo read that book?'
 b. Naze Taroo-sika sono hon-o yoma-nakat-ta no?

The fact that *naze* 'why' differs from other *wh*-phrases can be accounted for if other *wh*-phrases, but not *naze*, needs to undergo further LF movement across the scopal subjects in order to check their interrogative feature. Ko assumes Rizzi's relativized minimality. Based on relativized minimality, such movement is banned. If *naze* directly merges at the feature-checking [Spec, CP] position, then the preceding scopal element actually scrambles to a position above [Spec,CP] (According to Ko 2005), hence no LF movement takes place, and no intervention arises. Ko's analysis of intervention effects will be discussed in greater detail in Chapter 3, where I apply my semantic analysis of the *why*-adjunct to explain the intervention data.

¹² It follows from the high merge position of *weishenme* that in a *why*-question such as (i), the NP preceding *weishenme* is in a topic position, instead of in a subject position.

- (i) Ta weishenme xie shu?
He why write book
 'Why does he write books?'

In Chapter 3, I provide motivation for this claim.

2.4 The Root Constraint and Strong Islands

2.4.1 Deriving Strong Island Effects

In terms of compositional semantics, I propose to expand the original treatment, briefly suggested by Tsai (2008), that *weishenme* takes a presupposed proposition as its internal argument and takes another external argument that serves as the cause of said proposition. In this sense, *weishenme* expresses a two-place relation between two propositions. Here I am still adopting a Reinhart-style choice-functional approach to *wh*-phrase in *in situ* questions. I propose (30) as a semantic representation of *why*:

$$(30) \quad \llbracket why \rrbracket = \lambda q_{\langle s, t \rangle} \lambda p. \exists f [CH(f) \wedge p = \lambda w [CAUSE (f(R), q)(w)]]$$

Where f is a choice function, and a salient set of reasons $R = \{r_1, r_2, \dots\}$ is provided by context.

Implemented in the Minimalist Program framework, the semantic idiosyncrasies of *why*-questions are captured by assuming the high merge of *why* in syntax (Ko 2005). (31a) presents a *weishenme*-question. I formulate its syntactic structure in accordance with Ko's analysis in (31b). Its semantics is provided in (31c).¹³

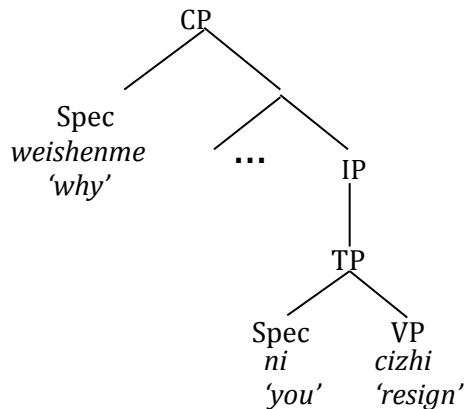
¹³ Ellipsis ... indicates intervening levels of projections between [Spec, CP] and IP.

(31) a. Weishenme ni cizhi?

Why you resign

‘Why did you resign?’

b.



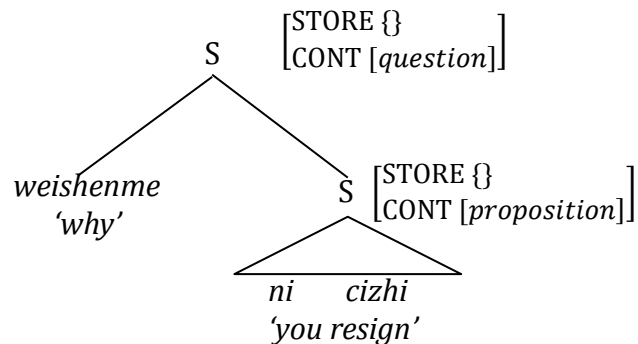
c. $\lambda p. \exists f[\text{CH}(f) \wedge p = \lambda w. [\text{CAUSE}(f(\mathbf{R}), \lambda w' \mathbf{resign}(you)(w'))(w)]]$

As *weishenme* ‘why’ merges directly at the [Spec, CP] position (which is *why*’s purported scope position), it does not interact with other scopal operators within CP. Ko assumes that scope-taking elements such as quantifiers or focused constituents raise at LF to take scope. However, they are believed to raise to structural positions that fall below [Spec, CP]. For example, quantifiers are believed to raise to either the FocusP position or a specialized QuantP position under Rizzi’s (2001) formulation of left periphery configurations. Rizzi further assumes that [Spec, CP] hosts IntP where interrogative phrases/features take scope. Both FocusP and QuantP, under Rizzi’s framework, either stay within IP or fall between IntP and IP. Thereby, the structural configurations at the left periphery would give rise to the prediction that *why* does not take scope at all: it directly merges above the positions where scopal interactions take place.

The idiosyncrasies of *why* can also be implemented in the HPSG framework. In HPSG, the rich inventory of projections in the left periphery is both undesirable and unnecessary. Instead, I

argue that the scopal behavior of *why* follows from the fact that it combines directly with a scope-resolved propositional argument. In the following, I implement this idea by resorting to the property of quantifier storage (Cooper storage) (Cooper 1981; Pollard & Sag 1994). In (32), the sister of *why* is specified as [STORE {}]. The MOTHER S of *why* and its sister is further specified with an empty STORE value. In other words, the proposition that *why* combines with is required to be scope-resolved. More specifically, all scope-bearing operators have been discharged from STORE and are located in the semantic representation of S. After taking the proposition as its argument, *why* is directly interpreted in its own scope position locally, yielding a *why*-question that is again fully scope-resolved.

(32)



In contrast, non-*why* *wh*-interrogative phrases, take scope in a way similar to a quantificational phrase. I again assume with Tsai (2008) that the reason adverbial *yinwei shenme* ‘because of what’ behaves on a par with *who* or *what* (except that *yinwei shenme* is a VP adverbial rather than an argument). The denotation of *yinwei shenme* is shown as follows:

(33) $[[\textit{For what reason}]] = \lambda P_{\langle e, t \rangle} \lambda x \lambda w. \exists f [\text{CH}(f) \wedge \text{because-of}(f(R), P)(x)(w)]$

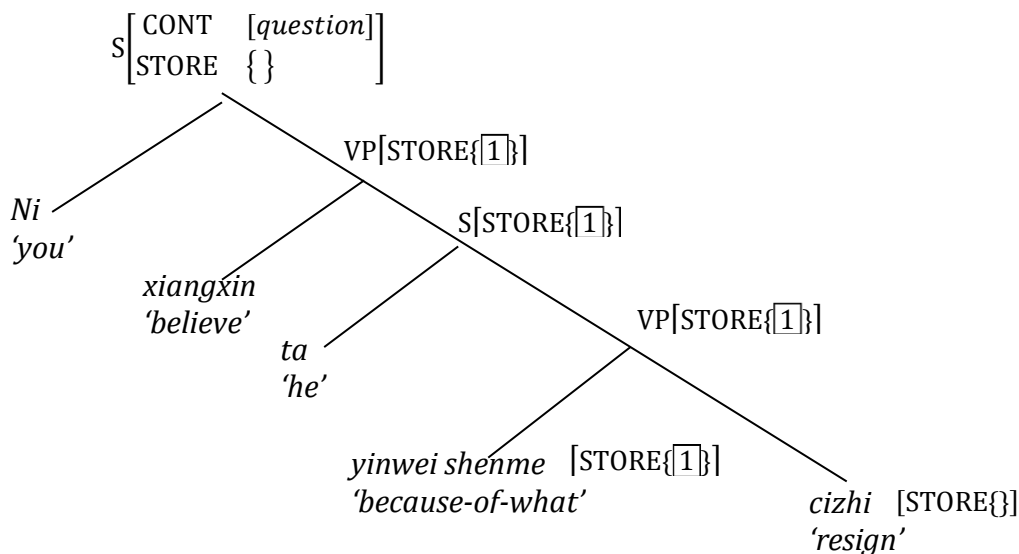
Using Cooper storage, the scopal behavior of *yinwei shenme* is illustrated by the following complex sentence in (34a). The syntactic structure of (34a) is given in (34b) and its semantics in

(34c).¹⁴

(34) a. Ni xiangxin ta yinwei shenme cizhi?

You believe he because.of what resign‘For what reason_i do you believe that he resigned t_i?’

b.



c. $\lambda p.\exists f[\text{CH}(f) \wedge p = \lambda w.[\mathbf{believe}(\text{you})(w)(q)] \wedge q = \lambda w'. [\mathbf{because-of}(f(R), P)(\text{he})(w') \wedge \mathbf{resign}(e, P)]]]$

In other words, in complex sentences the embedded *for what reason* takes matrix scope. Here the percolation of the STORE feature guarantees that the quantifier part of *for what reason* participates in scope interaction such that its scope is resolved at the matrix clause level.

If a complex sentence contains an embedded *why*-clause, we would arrive at a different

¹⁴ Here *believe* (you)(w)(q) means that *you believe that q in world w*. More precisely, when used as an intensional predicate, *believe* should have the following denotation (Hintikka 1962):

(i) $[[\mathbf{believe}]]^w = \lambda p_{\langle s, t \rangle} \lambda x_e. [DOX_x^w \subseteq p]$
 (DOX_x^w = the set of worlds compatible with x's beliefs in w.)

interpretation because *why* does not enter STORE and therefore cannot percolate. Specifically, since *why* takes a scope-resolved proposition (with [STORE {}]) as its input, and outputs a scope-resolved set of propositions (again with [STORE {}]), the complex sentence in (35a) would yield a semantic representation as in (35b):

(35) a. # Ni xiangxin ta weishenme cizhi?

You believe he why resign

b. $\lambda w. [\mathbf{believe}(\text{you})(w)(\lambda p. \exists f[\text{CH}(f) \wedge p = \lambda w'. [\text{CAUSE}(f(\mathbf{R}), \lambda w'' \mathbf{resign}(\text{he})(w''))(w')]])]$

The problem with this representation is illustrated by considering the interpretation of the possible answerhood that is necessary for deriving the correct semantics for a question. Here I follow Oshima (2007) and many others in assuming that a question computes a set of possible answers and requires that one unique (true) resolving answer (also called true resolution) be found. I posit the following interpretation rule that is general to all questions:

(36) $[[q_{i,j}(\varphi)]] = \{\varphi(x) : x \in \text{Domain}\}$ where the speaker (utterer) *i* assumes that there is one value for *x* that $[[\varphi(x)]] = 1$ and the hearer *j* knows what that value is.

Here *q* applies to the question and constructs an answer set. This interpretation rule states that the construction of answers is felicitous only if we are able to assign a value to the variable in the question (from context) such that *q*(φ) yields a true resolution.

In an embedded *why*-question, unlike an embedded *because of what*-question, the formula of the question does not express a widest scope λ -abstraction over propositions (*i.e.* λp). Rather, the formula in (35b) expresses a λ -abstraction over possible worlds (*i.e.* λw), with λp scoping under λw . As a result, the formula denotes a single proposition, rather than a question (a set of propositions with one true resolution). The interpretation rule in (36) requires that *q* takes a set of

propositions in order to construct an answer set. Consequently, (36) correctly predicts that embedded *why*-questions have no possible interpretations, hence their unacceptability.

This discussion demonstrates that a *why*-question disallows embedding altogether. In other words, it predicts that *why*-clauses, when interpreted as interrogative, are always root clauses. In the following, I propose a constructional rule that introduces the illocutionary operator over *wh*-interrogatives:

(37)

$$S \left[\begin{array}{l} \text{CONT} \left[\text{NUCL} \left[\begin{array}{l} \textit{illoc-rel} \\ \text{UTTERER} \quad i \\ \text{ADDRESSEE} \quad j \\ \text{MESSAGE} \quad q_{i,j}(\phi) \end{array} \right] \right] \\ \text{C-INDICES} \left[\begin{array}{l} \text{C-SPKR} \quad i \\ \text{C-ADDR} \quad j \end{array} \right] \end{array} \right] \rightarrow S \left[\begin{array}{l} \textit{wh-question} \\ \text{CONT} \quad \phi \end{array} \right]$$

Rule (37) guarantees that a root question carries its illocutionary force (*i.e.* its speech act). In Ginzburg & Sag's (2000, 267) term, an illocutionary force is captured by positing a type *illoc-rel*, which expresses a relation in which the utterer conveys a message to the addressee relative to the utterance context. In rule (36), we already see that when *q* applies to a root question, an answer set is being constructed. Uttering a question thus can be seen as a move from the utterer to the addressee that allows the latter to construct an answer set and find the true resolution answer. (37) characterizes this move by providing $q_{i,j}(\phi)$ as the value for the message that is embedded as the argument of the illocutionary relation. Once the message is conveyed, the illocutionary force of the root question is released.

Rule (37) is not specific to *why*-questions. Instead, it attaches a question force to any root

wh-questions as a result of the process of constructing answer sets. As for *why*-questions, I have already hypothesized that *why* modifies a root proposition. As such, the combination of *why* and its propositional argument is subsumed by another very general rule, the Head-Adjunct rule that is well-established in the HPSG literature (*e.g.* Pollard & Sag 1994). (38a) gives a simple version of the Head-Adjunct rule. (38b) provides the part of information to be specified in the lexical entry of *why* that characterizes the property where *why* modifies a [ROOT +] proposition:

- (38) a. $H \rightarrow [\text{MOD } \boxed{1}] H \boxed{1}$
- b.
- $$\left[\begin{array}{l} \text{PHON} \quad \langle \textit{why} \rangle \\ \text{SYNSEM} \quad \left[\begin{array}{l} \text{HEAD} \quad \textit{adv} \\ \text{MOD} \quad S [\text{ROOT } +] \\ \text{CONT} \quad \lambda q_{(s,t)}. \lambda p. \exists f (\text{CH}(f) \wedge p = \lambda w. (f(R) \text{ CAUSE } q \text{ in } w)) \end{array} \right] \end{array} \right]$$

My claim that a *why*-question is always a root question follows from the interaction of the independently motivated Head-Adjunct rule and the illocutionary force rule in (37). As *why* combines with the head S it modifies, the resulting mother S will be specified as a root clause. Consequently, (37) will apply, causing the root S to perform the speech act of a question in the form of denoting an illocutionary relation. I conclude from the above discussion that, in a *why*-question, *why* always perform illocutionary acts locally. Therefore, once *why* combines with its proposition argument denoted by the local clause, at the utterance level a speech act of request is understood to take place.

Such a conclusion immediately explains Bromberger's observation in English in which *why* in a *why*-question always takes matrix construal, as the root constraint rules out the embedded construal reading.

(39) Why did you want me to quit?

Reading A: ‘What reason makes you want me to quit?’

#Reading B: ‘What reason_i did you want me to have t_i for quitting?’

While this thesis cannot offer many details, it is possible that proposition modifiers must occur in root clauses. In the previous section, I showed that the German *denn* ‘because’-clauses seem to correspond to *why*-questions, functioning as a sentential modifier rather than a VP-level modifier. It is well known in the literature of main clause phenomena that *denn*-clauses cannot be embedded (Heycock 2006). Moreover, the Chinese question particle *ma* is traditionally analyzed as a yes-no function over propositions: it takes a proposition as its argument and returns binary truth values. Similar to *why*-clauses and *denn*-clauses, *ma*-questions never occur in embedded clauses:

(40) #Zhangsan gaosu Lisi [Xiaowang likai-le ma]?

Zhangsan tell Lisi Xiaowang leave-PRF Q

‘Zhangsan told Lisi that [did Xiaowang leave or not]?’

In addition, adverbs that denote a speaker’s epistemic attitude towards a propositional content are also a class of propositional modifiers. In Chinese, this category includes the adverb *yiding* ‘definitely’, which exhibits the main clause phenomenon as predicted:

(41) #Zhangsan gaosu Lisi [Xiaowang yiding likai-le].

Zhangsan tell Lisi Xiaowang definitely leave-PRF

‘Zhangsan told Lisi that [definitely, Xiaowang has left].’

Therefore, the root constraint I propose here for *why* may well be a part of a broad

generalization.¹⁵ Though the nature of this generalization is beyond the scope of this thesis, it clearly lends further support to the claim that the idiosyncrasies of *why* are universal.

If *why*-questions are always root propositions, strong island effects follow for free. Below, I repeat examples illustrating the CNPC effects, the Adjunct island effects and the Subject Clause effects.

(42) #Ni xihuan [ta weishenme xie] de shu?

You like he why write REL book

‘Why_i do you like the books that [he wrote t_i]?’

(43) #[Ta weishenme jiegou yuangong] yihou bei lingdao piping-le?

He why sack employee after by boss criticize-PRF

‘Why_i was he criticized by the boss [after he sacked the employee(s) t_i]?’

(44) #[Ta weishenme cizhi] zui hao?

He why resign most be.good

‘Why_i did [that he resigns t_i] be the best?’

In all of these environments, the *why*-clause is embedded. The embedded status directly conflicts with the constraint for the *why*-clause to be a root clause. Island effects manifest themselves due to the failure of the relevant sentences to be interpreted as matrix *why*-questions.

¹⁵ In an inquisitive semantics framework (Groenendijk and Roelofsen 2009; Ciardelli 2009; Ciardelli and Roelofsen 2011; Roelofsen 2013; Ciardelli et al. 2013), both the inquisitive content expressed by a question and the informative content expressed by a declarative are statements about the relation between states of affairs (SOAs) to the actual world. Under this framework, we might consider proposition-level modifiers as mapping propositions to a statement about the actual world. As such, they express issues (*i.e.* enhancements of information states/possible worlds), not possibilities (*i.e.* sets of possible worlds). I thank Floris Roelofson and Donka Farkas for discussing this issue with me.

2.4.2 *Wh*-Complements

The above account states that whenever *weishenme* causes interrogative feature propagation to fail, island effects should arise. This predicts that *weishenme* cannot be embedded *at all*, regardless of whether the embedded clause is an island clause (such as a relative clause) or a complement clause. For example, (45) is predicted to be unacceptable.

- (45) Ni juede/renwei [ta weishenme cizhi]?
You feel/think he why resign
 ‘Why_i do you feel/think [that he resigned t_i]?’

Most of the authors in previous literature believe that the sentence in (45) is acceptable. This judgment contrasts with the strong unacceptability induced in the previously mentioned island examples such as (42-44). For a structural theory, in which island and non-island domains are distinguished and only the former induces island effects, this is a welcome fact: because a complement clause is a non-island domain, it should be a transparent domain for movement. Thereby (45)’s acceptability is unsurprising and expected (Huang 1982; Hagstrom 2006).

Although more work needs to be done in the future, I present tentative evidence demonstrating that the acceptable extraction from the complement in (45) is only apparent. I argue instead that the reason that *why* can take matrix scope in (45) is because there is no embedding in this clause. The *weishenme*-clause is indeed the matrix clause, and the purported matrix part is actually a parenthetical expression. As such, the fact that extraction is possible here does not undermine my theory.

This argument revives McCawley’s (1994) original insights, in which he points out that certain extractions from complements should be more plausibly analyzed as extractions from a matrix clause with a parenthetical expression attached to it. Although McCawley did not explicitly

talk about *why*-questions, his argument is nevertheless applicable in our case.¹⁶ To paraphrase McCawley, the gloss of (45) would be:

(46) ‘Why did he resign, you think/feel?’

McCawley argues that just as in English where *you think/feel* often functions as a parenthetical clause, the corresponding Chinese clauses *ni renwei/ni juede* also receive a parenthetical reading. First of all, the string *ni juede/renwei* ‘you feel/think’ and the following *weishenme*-clause are commonly separated by a prosodic break in oral speech. This is similar to the case in English, where a parenthetical is often set apart from the main clause by a pause. McCawley goes on to reason that if we really want to distinguish a parenthetical expression from a matrix clause, we need to select a matrix predicate that does not easily lend itself to a parenthetical interpretation. This turns out, in general, to be a matter of how frequently a predicate is used parenthetically. For example, it is natural to use *do you think* parenthetically, but it is much less common to use *do you suspect*, or *do you like* parenthetically, unless a specialized context provides explicit evidence for such use. Importantly, McCawley argues that if we choose the Chinese verb *huaiyi* ‘doubt, suspect’ or *xihuan* ‘like’ instead of the verb *renwei* ‘think’ or *juede* ‘feel’ to precede a *weishenme*-clause, the acceptability is significantly reduced. This can be seen by comparing (47) with (45).

¹⁶ McCawley discussed A-not-A questions in Chinese instead. In Chapter 4, I introduce the basic properties of A-not-A questions and focus on the distributional similarities between A-not-A questions and *why*-questions. In essence, both question types take propositional arguments and likewise cause propagation to fail when embedded in subordinate clauses. No island effects occur when an A-not-A question is embedded as a *wh*-complement. McCawley proposes several tests similar to (47) in support of a parenthetical reanalysis. Therefore, my analysis of the *why*-complement is in the spirit of McCawley and largely duplicates his arguments for the case in A-not-A questions.

(47) a. ??Ni xihuan [ta weishenme cizhi]?

You like he why resign

‘Why_i do you like [that he resigned t_i]?’

(According to my analysis, the most likely reading is: ‘Why did he resign, do you like?’)

b. ??Zhangsan huaiyi Lisi weishenme cizhi?

Zhangsan suspect Lisi why resign

‘Why_i does Zhangsan suspect [that Lisi resigned t_i]?’

(Intended Reading: ??‘Why did he resign, do you suspect?’)

Other *wh*-clauses can follow these verbs without a decrease in acceptability:

(48) a. Ni huaiyi [ta zuo-cuo-le shenme]?

You suspect he do-wrong-PRF what

‘What_i did you suspect [that he had done wrong t_i]?’

b. Ni huaiyi ta yinwei shenme ba zhei-jian shi gaosu ni?

You doubt he because.of what BA DEM-CLF affair tell you

‘What reason_i do you suspect [that he revealed this secret to you for t_i]?’

Independently, Tsai (1994) also notes that verbs such as *yihan* ‘regret’, *jide* ‘remember’, *tongyi* ‘agree’ cannot be followed by a *weishenme*-clause.

(49) a. #Ni hen yihan [Lisi weishenme qu Meiguo]?

You DEGREE regret Lisi why go America

‘Why did Lisi go to America, do you much regret?’

b. #Ni jide [Lisi weishenme qu Meiguo]?

You remember Lisi why go America

‘Why did Lisi go to America, do you recall?’

Tsai takes this fact as evidence that the nominal complement of this class of verbs constitutes another island domain (in Tsai’s term, ‘nominal islands’, see Tsai 1994) that renders covert movement impossible. However, in light of McCawley’s data, an alternative theory would be that this class of verbs typically does not permit a parenthetical reading. If these verbs can only be matrix predicates, the *weishenme*-clause must be embedded as a complement. Since a *weishenme*-clause can never be embedded, a unified explanation accounts for the unacceptability of (49a) and (49b).¹⁷

Finally, many authors have postulated that although an overt tensed/tenseless distinction is not found in Chinese, verbs such as *shitu* ‘try’ or *shefa* ‘manage’ are control verbs that take infinitival complements (Grano 2012). These verbs cannot stand alone, and obligatorily take complement arguments. In this sense, it is not possible to analyze an expression such as *ni shitu* ‘you try’ as a parenthetical supplement, as they must be integrated with the following complements. As (50) shows, although a *yinwei shenme*-complement can be controlled by *shitu* ‘try to’, a

¹⁷ My theory would also predict that when predicates such as *renwei* ‘think’ and *juede* ‘feel’ bear a third person subject, the corresponding sentences with an apparent *weishenme*-complement would be less acceptable. This is because presumably it would be harder to switch perspective and interpret *does (s)he think/feel* as parenthetical expressions. This prediction seems to be borne out. The speakers I consulted report that the following sentence indeed worsened:

(i) Ta juede/renwei [Zhangsan weishenme cizhi]?
He feel/think Zhangsan why resign
 ‘Why did Zhangsan resign, does he feel/think?’

weishenme-clause co-occurring with *shitu* is judged to be very unacceptable by native speakers:

- (50) a. Nei-ge gemingzhe shitu shenqing yinwei shenme binan?
DEM-CLF revolutionary try seek because.of what asylum
 ‘What reason did that revolutionary try to seek asylum for?’
- b. ???Nei-ge gemingzhe shitu shenqing weishenme binan?
DEM-CLF revolutionary try seek why asylum
 ‘Why_i did that revolutionary try [to seek asylum t_i]?’

In sum, I propose that *weishenme* cannot occur in an embedded complement clause. Instead of contradicting my account, the complement data further validate my claim.

As I mentioned above (in example 18), an embedded construal of *why* is not available in sentences such as *Why do you want me to quit?*. However, there are authors who dispute the ban on the association with embedded clauses (Collins 1990; Prince 1990). Shlonsky (2011) points out that the following *why*-question is acceptable for some speakers under an embedded construal reading:

- (51) Why did you say (that) John left?

Meanwhile, speakers’ judgments converge when the matrix predicate is factive (Cattell 1978) or irrealis (Iatridou and Kroch 1992). For example, an embedded construal for *why* is not possible in the following questions:

- (52) a. Why do you wish that the company would hire her?
 b. Why do you desire that the company should hire her?

In general, the embedded construal is only acceptable to some speakers in limited cases that

involve ‘light’ predicates such as *say*, *think*, etc. In this sense, English behaves very similarly to Chinese. Note again that since other *wh*-phrases in English do not disallow an embedded construal to the same extent, this phenomenon cannot be simply analyzed as a general ban on the association of an embedded scope. As Hegarty (2011) observes, although *how* tends to associate with matrix clauses, an embedded construal reading is not impossible to get, even under irrealis matrix predicates:

(53) How_i does he wish [that they stack the boxes t_i]?

Oshima (2007) notices a similar contrast between *how* and *why* in Japanese. For example, *doo* ‘how’ can be associated with the embedded clause in the presence of a matrix factive predicate (e.g. *know*, *regret*), as in (54).¹⁸

(54) Taro-wa Hanako-ga doo Tokyo-made it-ta koto-o sitte-i-ru-no?

Taro-TOP Hanako-NOM how Tokyo-to go-PAST fact-ACC know-ASP-PRS-Q

‘What is the means/manner_i such that Taro knows that Hanaoko went to

Tokyo by t_i?’

However, in Japanese, when *doo* is replaced by *naze* ‘why’, an embedded construal is downright unacceptable. It thus seems that the ban on *why* appearing in embedded contexts is maintained in all cases other than the case with a ‘light’, idiomatic matrix clause (e.g. *did you say*). In more relative terms, the ‘heaviness’ of matrix predicates correlates strongly with the

¹⁸ *How* has been shown to independently favor a matrix construal, which causes the question in (54) to be less acceptable than a *what*- or *when*- or *where*-question. However, Oshima reports that Japanese speakers rate (54) as relatively acceptable, presumably because in Japanese *in situ wh*-interrogatives there is no additional processing load associated with long-distance dependencies. It is not clear to me how to evaluate Oshima’s claim regarding the higher acceptability of Japanese *how*-questions compared to their English counterparts, given that two distinct populations are involved. But Oshima’s main point, *i.e.* Japanese exhibits a contrast between *how*-questions and *why*-questions, are verified by my consultations with native Japanese speakers. I thank Natsuko Nakagawa and Yoshi Asao for providing their judgments.

matrix readings of *why*, so that the ‘heavier’ a matrix predicate is, the less reluctant speakers are to allow a matrix construal reading for *why*. Importantly, light matrix clauses take a backgrounded status in terms of information structure (Van Valin 1998; Goldberg 2013), leaving it to the embedded clauses to carry the sentence forces of questions. In contrast, heavy matrix predicates contribute new information to sentences and can be seen as carrying sentential forces. If *why* does not attach to a matrix clause to fulfill the sentential force, propagation failures do not arise.¹⁹

2.5 Summary

This chapter presents a semantic explanation of the Chinese *in situ* island effects. I dispute the widely held assumption in the previous island literature that the Chinese island effects exhibit an argument-adjunct asymmetry. I show that this belief is misguided. Island effects do not appear in all Chinese *wh*-adjuncts. Instead, only *why*-questions induce them. I then show that island effects in *why*-questions arise because *weishenme*-clauses are always root clauses. By contrast, other *wh*-phrases readily occur in embedded environments. Once this distinction is made explicit, we are able to characterize the judgment contrasts between *why* and other *wh*-phrases in terms of the meaning component of grammar.

This analysis makes for a simpler grammar: there is no need to propose structural constraints on *in situ wh*-questions (such as in Huang 1982). Another theoretical consequence is that the removal of structural stipulations renders void the grounds for positing covert movement at the LF level.

My theory has implications on the evaluation of competing island theories. As various

¹⁹ Van Valin (1998) presents data from Lakhota where sentence force is marked at the embedded clause when the matrix clause is ‘light’.

generative syntacticians point out, if we assume that island effects in *in situ* questions are treated in the same way as island effects in overtly displaced questions, then island theories that critically hinge upon overt displacement would suffer from an empirical disadvantage since they cannot be extended to the *in situ* cases (Lasnik 1999; Sprouse, Wagers, and Phillips 2012; Boeckx 2012). For example, in processing-based theories, overt displacement is crucial, because the overt dependencies it creates impose taxing burdens on the processing resources of a cognitive agent (Deane 1991; Kluender 1998a; Hofmeister and Sag 2010). As such, the processing approach doesn't have an explanation for the *in situ* Chinese island effects.

According to my theory, the empirical disadvantage of processing theories would disappear, because the island effects in displaced and *in situ wh*-questions are distinct and do not form one natural class. Hence, we don't need to extend theories of processing overt dependencies to *in situ* constructions. In other words, although my current claim doesn't in principle favor nonstructural theories over structural ones when it comes to dealing with overt island effects, it enables a level playing ground by rendering the evidence from *in situ* islands irrelevant. In Chapter 5 I come back to this issue.

Chapter 3 and Chapter 4 discuss two related issues. Chapter 3 focuses on a type of ungrammaticality phenomenon called intervention effects. In a way very similar to the *in situ* island effects, the phenomenon involves the impossibility for an *in situ wh*-phrase to be located in relation to a particular domain (*i.e.* the quantificational domain or a domain defined/valued by a focus-sensitive operator). Importantly, I show that there exists one type of self-contained and idiosyncratic intervention effects that occur in the *why*-phrase in East Asian languages only. Based on *why*'s semantics, I offer a semantic explanation of intervention effects in *why*-questions in Chapter 3. Chapter 4 turns to A-not-A questions, a

special construction type of alternative questions. While A-not-A questions differ from *why*-questions, the former exhibits interesting parallelism with the latter by exhibiting similar island effects as well as intervention effects. The analyses we develop so far encourage a new perspective for approaching these phenomena in A-not-A questions, which has been a long time puzzle for syntacticians and semanticists. In an approach similar to the one I take in Chapter 2 and 3, I explore whether the alternative question operator in an A-not-A question possesses an outscoping and proposition-taking property on a par with *why*, and whether this peculiar semantics might lead to incompatible interpretation and create unacceptability. I present arguments in chapter 4 to show that the answer is in the affirmative. In sum, the insights reaped from our semantic analysis in chapter 2 allow new frontiers to be opened. Identifying the idiosyncrasies of *why* opens the door for a uniform explanation of a whole class of related, island-like phenomena.

3 Intervention Effects

3.1 Introduction

3.1.1 Problem and Summary of My Proposal

This chapter argues that a distinction must be made between two types of intervention effects in Chinese: the intervention in *why*-questions and the intervention in non-*why wh*-questions. Recent proposals (*e.g.* Beck 2006) have argued that the intervention in non-*why* questions is a semantic phenomenon, rather than a syntactic one. While I concur with this position, I propose that the *why*-induced intervention receives a different semantic explanation, one that hinges upon the idiosyncrasies of *why*.

(1) schematizes the intervention induced in *in situ why*-questions.

(1) #_[Q] [*Quant why*]]

I show that, in *why*-questions, the intervention patterns depend on the type of quantifier: (i) only monotone decreasing quantificational phrases consistently induce intervention, which is shown in (2a); (ii) monotone increasing and non-monotonic quantificational phrases do not induce intervention, shown in (2b); (iii) the apparently intervention-inducing phenomena exhibited by the monotone increasing modified numerals and the non-monotonic bare numerals in (2c) are qualitatively different from the intervention witnessed in (2a). (2c) is judged to be marginal but still acceptable, and can be improved under certain contexts.

- (2) a. #*{Meiyou ren / henshao ren} weishenme mei lai?*
 {No person/ few person} why neg come
 #‘For {nobody/few people}, why they didn't come?’
- b. *Daduoshu ren weishenme mei lai?*
 Most person why neg come
 ‘For a certain plurality of individuals that is the majority of all the context-relevant individuals, why they didn't come?’
- c. ?? *{Zhishao wu-ge ren / wu-ge ren} weishenme mei lai?*
 {At least five-CLF person /five-CLF person} why neg come
 ‘For a certain plurality of individuals with the cardinality of (at least) five, why they didn't come?’

I propose to account for the full array of data by adopting a novel analysis of the semantic idiosyncrasies of *why*-adjunct, and by endorsing the view that topicality correlates with quantifier types. More specifically, only certain types of quantifier can be topical, and hence, only those can be fronted.

3.1.2 Account of Intervention Effects

Based on Chapter 2, I assume that *why* doesn't bind any variable and modifies a root proposition. As a consequence, *why* does not take part in scopal interaction of the root proposition (in other words, the scopal elements within the root proposition are fully resolved at the scope positions below the position of *why*). Meanwhile, I assume that topic is interpreted at the widest possible scope in a sentence (Krifka 2001, Ko 2005, Ebert et al 2014). Topic performs its own speech act of initiating a referent. When topic occurs in a question, the speech act of the topic is conjoined with the question's speech act. Therefore, the scope position of a topic resides outside the

illocutionary force of questions. Consequently, if a quantifier is construed as topical, it may scope above *weishenme*. On the other hand, if a quantifier cannot be construed as topical, it cannot take wide scope, and intervention effects in *why*-questions arise in such cases.

Following Reinhart (1997) and Constant (2012), I believe that the ability for a quantifier to be construed as topical corresponds to the ability for that quantifier to express type-e (individual) meaning. No monotonic decreasing quantifiers are able to express type-e meaning, whereas other types of quantifiers are able to do so. In that case, the latter directly denote their witness set, rather than denoting a (Barwise-Cooper style) relation between sets. The fact that topicality depends on type-e meaning explains why the intervention effects in Chinese *why*-questions are split with regards to quantifier monotonicity.

Recent literature on Chinese (Aoun and Li 1993; Stepanov and Tsai 2008; Cheng 2009; Yang 2012) proposes that Chinese intervention effects are a minimality effect (Rizzi 1990; Rizzi 2001), caused by *wh*-phrases moving across a quantifier at LF. Empirically, a covert movement approach does not make a fine-grained distinction within quantifier types to allow for only a subset of quantifiers to block LF movement of the question operator. Furthermore, even assuming that the quantifier types can be fine-tuned to accommodate the correlation between monotonicity and topicality, there is no independent motivation to incorporate monotonicity as a feature of interveners, as no other related minimality effects are known to be sensitive to monotonicity.

The rest of the chapter is structured as follows. Section 3.2 first presents the intervention data and provides a critical review of the previous minimalist-based theories of the Chinese intervention effects. I then develop a semantic account with reference to *why*'s semantic idiosyncrasies in line with my proposal in Chapter 2. Section 3.3 provides evidence that some

quantifiers can be topical, whereas others cannot. Section 3.4 extends my account to cover the intervention patterns in Japanese and Korean *why*-questions. Section 3.5 compares the intervention patterns in Chinese *why*-questions and non-*why* questions. Based on the comparison, I suggest some revisions to the current semantic theories of intervention effects in non-*why* questions (e.g. Beck 2006). Section 3.6 concludes the chapter.

3.2 Intervention Effects in Chinese *Why*-questions

3.2.1 Data

In this section, I present new data showing that intervention effects are sensitive to the type of quantifier. As (3) shows, when *weishenme* is preceded by a monotone decreasing quantificational DP, oddness ensues.

- (3) # {*Meiyou ren / Henshao ren*} *weishenme du-guo shu?*
 {No person/few person} why read-EXP book
 # ‘ {For nobody/For few people}, why have they read books?’

By contrast, a quantificational nominal phrase with a simplex monotone increasing determiner, such as *most people*, or *a few people*, does not induce intervention effects.²⁰

²⁰ A monotone increasing quantifier, such as *most*, is ‘monotone increasing’ because when the predicate in the body of the quantified expression is made less restrictive, the truth value is preserved. Thus,

(i) *Most men work hard.*
 entails

(ii) *Most men work.*

Alternatively, this is called ‘right upward monotone’ in the literature. By contrast, for monotone decreasing quantifiers, when the predicate in the body of the quantified expression is made less restrictive, the truth value is not necessarily preserved. Quite the opposite, it is preserved when the body is made *more* restrictive.

(iii) *Few men work.*

entails

(iv) *Few men work hard.*

- (4) {*Daduoshu ren*/*Shaoshu ren*} *weishenme cizhi?*
 {Most person/A.few person} why resign
 ‘{For a majority group of people/for a minority group of people}, why did they resign?’

To make things more complex, one class of monotone increasing quantificational phrases with morphosyntactically complex determiners induce *weak* intervention. This class includes modified numerals such as *at least three people*, *more than three people*, etc.. The non-monotonic bare numerals, such as *three people*, also exhibit the same pattern. An example is given in (5). When uttered out of the blue, members of this class often trigger rather low judgments of grammaticality for some speakers, while for other speakers the oddness is less severe than that which is induced in monotone decreasing contexts.

- (5) ??{*San-ge ren*/*zhishao san-ge ren*/*chaoguo san-ge ren*} *weishenme cizhi?*
 {Three-CLF person/at.least three-CLF person/more.than three-CLF person} why resign
 ‘{For three people/at least three people/more than three people}, tell me why they resigned?’

So far, I have only discussed matrix *why*-questions. In an embedded *why*-question, morphosyntactically simplex monotone increasing quantifiers still induce no intervention, as shown by the perfectly acceptable sentence as follows:

- (6) *Wo yijing zhidao-le* {*daduoshu ren*/*shaoshu ren*} *weishenme cizhi.*
 I already know-PRF {most person/a.few person} why resign
 ‘I already knew why {a majority/a minority group of people} resigned.’

More noteworthy is the fact that the *weak* intervention we witness in (5) is circumvented in

certain embedded *why*-questions. This is demonstrated by the acceptability of (7) .

- (7) *Wo yijing zhidao-le {san-ge ren/zhishao san-ge ren/chaoguo san-ge ren} weishenme cizhi.*
 I already know-PRF {three-CLF person/at.least three-CLF person/more.than three-CLF person} why resign
 ‘I already knew for a group of (at least/more than) three people, why they resigned.’

By comparison, no circumvention arises in embedded contexts for monotone decreasing quantifiers. As (8) illustrates, the unacceptability in an embedded *why*-question is as strong as it is in a matrix one.

- (8) *#Wo yijing zhidao-le {meiyou ren/henshao ren} weishenme cizhi.*
 I already know-PRF {no person/few person} why resign
 #‘I already knew for {nobody/few people}, why they resigned.’

In sum, intervention effects in Chinese *weishenme*-questions are sensitive to the quantifier monotonicity. In addition, they are sensitive to whether the question occurs in matrix or embedded contexts. The overall pattern can be summarized as follows:

- (9) In matrix and embedded *weishenme*-questions:
- (i) Monotone decreasing quantifiers consistently induce intervention effects;
 - (ii) Monotone increasing, non-numeral quantifiers do not induce intervention effects;
 - (ii) (Monotone increasing) modified numerals and (non-monotonic) bare numerals induce weak intervention in matrix *why*-questions, which is ameliorated under embedded contexts.

Apart from quantificational DPs, adverbs of quantification exhibit similar patterns. (10) illustrates the ban for monotone decreasing quantificational adverbs to linearly precede *weishenme*.²¹

- (10) a. #*Ta congbu weishenme cizhi?*
 He never why resign
 #‘On no occasions_i, why did he resign t_i?’
- b. #*Ta henshao weishenme cizhi?*
 He seldom why resign
 #‘On few occasions_i, why did he resign t_i?’

Furthermore, this ban on the linear precedence of quantificational adverbs is lifted if the adverbs are monotone increasing or non-monotonic:

²¹ Note that all of these adverbs are classified as adverbs of quantification in Lewis (1979).

(11) a. *Ni dabufen shijian weishenme juede kun?*

You most time why feel be.drowsy

‘For most of the occasions_i, why did you feel drowsy t_i?’

b. *Wo yijing zhidao ta zhishao liang-ci weishenme bu-gan zuo zhei-jian shi.*

I already know he at.least two-token why NEG-dare.to do DEM-CLF affair

‘I already knew why he wouldn’t dare to do that in at least two occasions.’

The following example demonstrates how focus can induce intervention effects in *weishenme*-questions. Sentence (12a) is unacceptable, because *weishenme* is preceded by the focus-sensitive *only*-NP. (12b) and (12c) are similarly unacceptable, when *weishenme* is preceded by the focus-sensitive particle *lian...ye* and the focus adverbial *zhi* ‘only’.²²

(12) a. *#Zhiyou Lisi weishenme cizhi?*

Only Lisi why resign

#‘For only Lisi, why did he resign?’

b. *#Lisi zhi weishenme cizhi?*

Lisi only why resign

#‘It is only the case that why Lisi resigned?’

c. *#Lian Lisi ye weishenme cizhi?*

LIAN Lisi also why resign

#‘For even Lisi, why did he resign?’

²² In Chinese, a *lian* + XP + *dou* construction marks the XP as the focussed constituent (Paris 1979; Shyu 1995; Hole 2004). *Lian* in this construction is often compared with the English *even*. *Dou* is the same maximality operator that licenses a monotone increasing quantifier, which I mention above. Its occurrence in this focus-sensitive construction is obligatory, although there are controversies whether it expresses the same maximality information in this construction.

3.2.2 The Minimality Approach

In this section, I review several recent minimalist approaches to the Chinese intervention effects in *why*-questions that resort to covert LF movement. I then show that this line of research holds out little promise in accommodating the full range of data as discussed in the previous section. In the next section, I move to a semantic account that achieves the desired empirical coverage.

In Tsai (2008) and Stepanov and Tsai (2008), the intervention induced by scopal elements is argued to follow from Relativized Minimality (Rizzi 1990; Rizzi 2001; Rizzi 2004).²³ In a nutshell, intervention is a minimality effect, in which the quantificational ‘likeness’ between a quantifier and the interrogative phrase *weishenme* means that *weishenme* is attracted to the left periphery scope position only if it is closer to the scope position than the quantifier is.

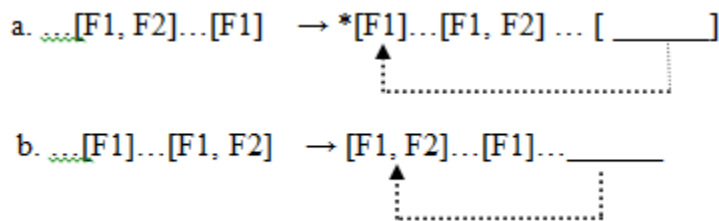
This idea is taken up in Yang (2012). Yang modifies Starke’s (2001) and Rizzi’s (2004) recent formulations of Relativized Minimality and provides the following condition, in which the minimality effect is captured in terms of a filter:

²³ Neither of the two papers explicitly spells out a theory of intervention effects, as their purpose is to propose a revised cartographic hierarchy of the left periphery that updates on Rizzi’s original formulation. A minimality-based approach has been suggested earlier in a paper by Aoun and Li (1993). Furthermore, Cheng (2009) echoes Aoun and Li’s solution, arguing that if intervention effects are a minimality effect, then this presents clear evidence of the existence of covert LF movement. Yang does not explicitly mention the intervention in *weishenme*-questions. Given his endorsement of unselective binding as licensing argumental *wh*-phrases, it would be reasonable to assume that he takes *in situ weishenme* in Chinese as a case of covert feature movement of the interrogative operator Q-Op. According to this opinion, *weishenme*, but not other *wh*-phrases in Chinese, should be ruled out by relativized minimality in quantifier-induced intervention.

(13) Maximal Matching Filter (Yang 2012, 63)

Let X and Y be bundles of features in a sequence of [... X ... Y ...]; Y cannot cross X when Y is maximally matched by X .

Figure 1 schematizes the Maximal Matching Filter:

Figure 1 The Maximal Matching Filter

If a scopal element A bears feature [F1] and moves to its left periphery scope position, and if another scopal element B has the feature geometry that includes the bundle [F1 F2], then the movement of A from its initial merge position to its scope position is blocked because the bundle [F1 F2] *maximally matches* [F1]. In other words, the filter condition rules out the scope-taking of an operator at the left periphery when a ‘like’ operator is closer to the scope position of the said operator.²⁴

²⁴ Conversely, if an operator bearing only [F1] intervenes along the movement route of a [F1 F2]-bearing operator, minimality effects won’t arise. This is so, because in such a case [F1] alone won’t suffice to maximally match [F1 F2]. Yang argues that this prediction is borne out by the covert phrasal movement in English. Drawing upon Pesetsky (2000), Yang treats the construction as in (i) as a case of covert phrasal movement, contrary to the covert feature movement (where only the interrogative feature *per se* moves to the probe).

- (i) a. Which issue_i should I not discuss t_i with which diplomat?
 b. Which book_i did no one give t_i to which student?
 c. Which picture_i did very few children want to show t_i to which teacher?
 d. Which girl_i did only Mary introduce t_i to which boy?

Under this situation, the intervening quantifier shares with the moved phrase the quantificational feature, but the phrase carries far more features than the mere quantificational feature, and the intervener cannot match all these features maximally. Yang takes this as evidence that covert phrasal movement induces no intervention, and argues that this prediction lends support to the validity of the filter condition in (14).

The criteria of operator type matching are determined as follows (Rizzi 2004, 19):

- (14) a. Argumental: person, number, gender, case
 b. Quantificational: Wh, Neg, measure, focus...
 c. Modifier: evaluative, epistemic, Neg, frequentative, celerative, measure, manner, ...
 d. Topic

Based on this classification, the focus-sensitive operator (focus) possesses the same quantificational feature as quantificational phrases and the interrogative operator (Wh). Apart from the quantificational feature, the focus operator also bears other features. In a [Focus < Wh] configuration, the maximal matching filter is violated during the covert feature movement, because the quantificational feature is maximally matched by the intervening focus operator.²⁵

However, the minimality approach is problematic when it comes to quantifier-induced intervention. The biggest issue is that the minimality approach treats *all* quantifiers (both quantificational nominal phrases and adverbs of quantification) as legitimate interveners that block the LF movement of an interrogative operator. Quantifiers are interveners, simply because they bear a quantificational feature. Therefore, such approach would not predict the Chinese intervention pattern, where the intervention is sensitive to the types of quantifiers. Instead, this approach, as it currently stands, should predict that a finer distinction within quantifier types won't make any difference in intervention. If quantifiers in general possess enough features to maximally match the interrogative operator, then by including monotonicity as a further

²⁵ Assuming unselective binding, Tsai also explains why other *wh*-phrases do not cause intervention in the same way as *weishenme* 'why'. Tsai's story is nondistinct from what has been proposed for the absence of the strong island effects in non-*why wh*-phrases (see discussions in chapter 2). Citing Cheng and Rooryck (2002), he endorses the view that *wh*-nominals are licensed at a distance by a Q particle that gets merged at [Spec, CP] directly. That is, an argument-adjunct asymmetry exists, to the effect that only *wh*-adverbs involve feature movement in LF. Because the *wh*-arguments are licensed by unselective binding and undergo no movement, the maximal matching filter is vacuously satisfied and no intervention arises.

dimension in the feature geometry we only increase the inventory of the feature set for the quantifiers. Therefore, both monotone increasing and decreasing quantifiers are supposed to maximally match the interrogative operator and block its covert movement. Furthermore, it is rather stipulative if we bring monotonicity, a semantic primitive, into our feature geometry, especially since we find no independent evidence that it plays a role in environments other than the intervention of *why*-questions. Given the lack of apparatus to allow only a subset of quantifiers to block covert LF movement, it seems that the validity of a minimality account is in question.

Finally, in embedded questions, a minimality account predicts that the covert interrogative operator still moves to take the embedded [Spec, CP] scope position (across the quantificational interveners along the way). Hence, even assuming that quantifier types can be fine-tuned to accommodate the intervention data in matrix questions that we have seen in (3)-(5), it is mysterious how a minimality account handles the selective amelioration phenomenon in the embedded questions of (6)-(8) in a principled manner.

3.2.3 A Theory of Intervention

In Chapter 2, I argue for a theory of *why* in which *why* denotes a propositional modifier that forces its local clause to carry sentential force. This theory immediately gives us an explanation of one subset of intervention effects previously discussed in the literature. For instance, the following sentence in Korean fails to receive a matrix *why*-question reading (Ko 2005):

(15) #*John-un [amwuto way ku chayk-ul ilk-ci-anh-ass-nunci] mwul-ess-ta?*

John-TOP anyone why that book-ACC read-CI-not-PAST-Q ask-PAST-DEC

#‘Why_i did John ask that no one read that book t_i?’

Ko argues that this unacceptability arises because the NPI *amwuto* ‘anyone’ in the embedded clause blocks *way*’s LF movement to the matrix scope position. However, if the presence of an intervener causes oddness, we would predict that this constraint disappears when there is no intervener along the movement route. Nevertheless, the failure for *why* to take matrix scope is independent of whether interveners exist or not. Below I repeat Bromberger’s (1992) observation that the English *why* fails to have an embedded construal:

(16) *Why did you want me to quit?*

‘What reason did you have for wanting me to quit?’

#‘Why_i did you want me to quit t_i?’

Assuming that *why* initially merges low, and subsequently moves to the left periphery of the matrix clause, then (16) has the underlying structure in (17) under a Ko-style analysis:

(17) *Why_i did you want me [PRO to quit ~~why_i]~~*?

The lower copy of *why* gets deleted in Spellout, but it in principle should allow the sentence to receive an embedded construal reading. This reading would be ruled out only if the overt movement at surface syntax is blocked. However, it seems that nothing in the matrix clause independently stands as an intervener (that is, the intervening materials that lie between the landing site of *why* and its trace are not known to block overt movement for other *wh*-phrases).

Similar things can be said for (18), where *why* fails to be associated with a VP-adverbial base

position.

(18) *Why did at least three men leave?*

‘Why is it the case that at least three men left?’

#‘What reason_i did at least three men have t_i for leaving?’

Again, if we assume the underlying structure is (19), we run into difficulties explaining what causes *at least three men* to be interveners in a fronted *why*-question, but not in any other fronted *wh*-questions.

(19) *Why_i did at least three men leave why_i?*

Therefore, Bromberger’s English data pose a problem for Ko’s approach, as the movement operation at surface syntax should not meet any interveners along the movement route, but the embedded construal reading is nevertheless unavailable.

Bromberger’s data would follow naturally if *why* occurs in a root clause carrying the sentential force, and cannot be incorporated into the rest of the sentence by means of a trace. The discussions on the embedded construal are particularly meaningful, because the ban on embedding cannot be predicted by simply assuming that *why* merges high. As Chapter 2 demonstrates, Ko (2005) allows *why* to merge at [Spec, CP] of an embedded clause and then undergo movement to the matrix scope from the embedded position. Hence, my theory and Ko’s both require that *why* directly occupies its scope position, but they critically differ in that Ko’s does not require *why* to be detached from the rest of the sentence, and as such her theory would allow for embedded construals, in which *why* directly merges at the [Spec, CP] of an embedded clause and thus is interpreted as a part of the proposition denoted by the matrix sentence.

Under my approach, *why* is a modifier that operates on a root proposition, henceforth *why* is

never interpreted as being embedded under another part of a sentence. Among other things, *why* can never be interpreted as within the restriction of a generalized quantifier. In the following, both orderings in (20a) and (20b) yield acceptable *why*-questions, yet each allows for only one possible interpretation, as the following illustrates.

(20) a. *Weishenme duoshu ren cizhi?*

Why most person resign

‘Why is it the case that most people resigned?’

b. *Duoshu ren weishenme cizhi?*

Most person why resign

‘For a certain plurality of individuals that is the majority of all the context-relevant

Individuals *who have resigned*, why did they resign?’

For (20a), an answer can be felicitously given in the form of (21):

(21) *Yinwei zhiyou shaoshu ren manyi gongsi de xinchou daiyu.*

Because only minority person be.satisfied.with company REL pay treatment

‘Since only a minority (of employees) were satisfied with the payroll of the company.’

In (20a), *most people* is interpreted as a generalized quantifier that takes narrow scope under *why*. That is, a question in the form of ‘*why most people resigned?*’ is equivalent to a question in the form of ‘*why (only) a minority of people did not resign?*’. Therefore, (21) is a felicitous answer that addresses the question in (20a). By contrast, (21) is not a felicitous answer for the question in (20b). I believe that this is because (20b) has a different interpretation from (20a). Crucially, *duoshu ren* ‘most people’ in (20b) is not a generalized quantifier. Rather, it is interpreted as an individual-denoting plural indefinite, such that (20b) asks for the reason that

causes a *particular plurality* of individuals to resign, and this plurality constitutes the majority of all the individuals that have resigned.

Moreover, I have shown that whereas *henshao ren* ‘few people’ induces intervention, *shaoshu ren* ‘a few people’ does not. For example, if the answer to the question in (20b) is in the negative, then the questioner may go on to ask the following:

(22) *Na shaoshu ren weishenme cizhi?*

Then a.few person why resign

‘Then, (as for) the minority plurality of individuals, will they go or not?’

That is, *shaoshu ren* ‘a few people’ is intended to refer to the plurality of individuals who are the complement of the majority plurality of individuals mentioned in (20b). Therefore, I believe that *shaoshu ren* in (22) is also individual-denoting. This is revealing, since the reference set of *henshao ren* and *shaoshu ren* may share the same cardinality information. Therefore, their differences further show that intervention correlates with monotonicity, rather than with the relation between sets as denoted by a quantifier.

Importantly, *most people* and *a few people* take the widest scope in (20b) and (22), as evidenced by their ability to outscope *why*. This exceptional wide scope is characteristic of plural indefinites. Therefore, the interpretation we get in (20b) and (22) would receive a natural explanation if the quantificational phrases are indeed plural indefinites. Formally, individual-denoting quantificational phrases denote choice function variables (Reinhart 1997; Winter 1997). Both Reinhart and Winter have proposed that quantificational determiners such as *some* or *many* need NOT denote a relation between predicates, in the traditional sense of Barwise and Cooper (1981). Rather, they may denote type-e meaning. This can be done by assuming that *some people* or *many people* denote a particular plurality of individuals (*i.e.* a witness set) in the

form of a choice function variable. That is, they are selected by a choice function of type $\langle\langle e,t\rangle,e\rangle$ that, given a property (type $\langle e,t\rangle$) as input, returns some plurality (type e) that has such property. I argue that here *most* receives the same analysis: *most people* is of type e , and denotes a particular plurality of individuals. To do this, Reinhart proposes that a choice function variable occupies the [Spec, DP] position. Hence, a DP such as *many students* would have the structure of $[_{\text{Spec, DP}} \mathbf{f} [_{\text{D}} \textit{many students}]]$.

An alternative way to incorporate the choice function variable is to adjoin the choice function variable f to the quantificational determiner, yielding the structure $[_{\text{DP}} [_{\text{D}} [\mathbf{f} \textit{most}]_{\text{F}} [_{\text{NP}} \textit{people}]]]$ (Constant 2012). This enables us to allow the quantificational determiner and the choice function variable to range over alternatives, but leave the restrictor of the quantifier *people* constant. This is captured by allowing the $[\mathbf{f} \textit{many}]_{\text{F}}$ part to be focus-marked (as I show in the subscript), whereas the restrictor (here *people*) is left out of the domain of the focused constituent.

On Constant's analysis, the quantifiers in individual-denoting nominal phrases are choice function modifiers that add a presuppositional restriction on the cardinality of the entity returned by the function. For example, *most* is represented as (23).

$$(23) \quad \llbracket \textit{most} \rrbracket = \lambda f_{\langle\langle e,t\rangle,e\rangle} \lambda P_{\langle e,t\rangle} [f(P) \text{ iff } |\text{SUM}(f(P))| > \frac{1}{2} |\{y: \text{atom}(y) \wedge P(y)\}|]$$

Here SUM is defined over pluralities that consist of atom individuals. Given a plurality, it outputs the set of all the atoms in the plurality. The alternatives generated by ' $[\mathbf{f} \textit{most}] \textit{people}$ ' are computed by substituting different choice function variable values in the position of $[\mathbf{f} \textit{most}]$. Combining these alternatives with the restrictor *people*, we produce contrasting pluralities of individuals, each of them containing a majority of all the context-relevant individuals. This thesis assumes the choice-functional analysis of quantifiers along the line of (23), although there is no need to tease apart Reinhart/Winter's and Constant's proposals for my purpose: it suffices to

show that a choice functional approach captures the wide scope of plural indefinites.

To go one step further, I argue that the plural indefinite *most people* is a topic when it takes wide scope over *weishenme*. That is, I believe that exceptional wide scope is a topic phenomenon (Endriss 2009). A topical reading is possible for quantifiers interpreted as plural indefinites, because all referring expressions that are individual-denoting may serve as topics under the right contextual conditions. Importantly, as a *weishenme*-question obligatorily carries the illocutionary force, for any subsentential expression to scope above *weishenme*, it has to scope above the speech act operator. Among individual-denoting expressions, only topics are able to do so.

Below I will provide motivations for the claim I just made. It is worth pointing out at this point that this claim explains what causes intervention effects: Due to *why*'s high scope, the subsentential expressions that may scope above *why* are limited. If a subsentential expression cannot scope above *why*, it cannot occur in a position that forces a wide scope reading. The so-called intervention effects arise when an expression that cannot scope above *why* nevertheless occupies a wide scope position. In other words, there is no 'real' intervention involved here; rather, the intervention in *why*-questions should be better characterized as a scope effect.

I will support my claim by putting forward a two-pronged argument. On one hand, I show that (only) two classes of expressions are able to take scope outside the illocutionary force. They are topics and speech-act level epistemic adverbials. On the other hand, I show that the ability for quantifiers to be topics depends on their monotonicity.

Various authors have pointed out that if any part of a proposition is capable of scoping out of a speech act, it will have to be a topic (Krifka 2001; Ebert et al. 2014). This is because topic establishment is a separate speech act by itself (Krifka further points out that topics even have to scope out of speech acts, given that they function as a separate speech act). The idea that topics

are assigned illocutionary operators of their own was first raised in Jacobs (1984). Jacobs points out that introducing a topic is an act of frame setting. As such, it is an initiating speech act that selects an entity, and then requires a subsequent speech act, such as an assertion, question, or command about the entity being selected. Krifka (2001) notes that, in English, overt devices are used to mark topics as scoping out of questions, commands and curses, such as the following:

- (24) a. *As for Al, Bill and Carl, which dishes did they make?*
 b. *The hamburger, please hand it to me.*
 c. *This guy, he should go to hell!*

Reinhart (1981) echoes Jacobs' view and further elaborates that frame setting establishes an address for a new discourse referent *x*, such that a proposition can be made in which the referent *x* serves as the argument within the propositional content (see also Heim 1982). Crucially, this would require the topic establishment to be interpreted before the propositional act.²⁶

In my earlier discussion, I claimed that the illocutionary force of a *weishenme*-question is directly attached to *weishenme*. Under this claim, topics have to scope above *weishenme*, because they must scope out of the *weishenme*-question's illocutionary force. This would be just another way of linguistically realizing conjoined speech acts within one sentence. As Krifka (2001) also notes, sentential conjunction operator *and* can connect two conjoined speech acts. In Chinese, we can also conjoin two *weishenme*-clauses by *bingqie* 'and':

²⁶ The wide scope readings of topic fit in well with Chinese, which exhibits prototypical discourse-configurationality (Kiss 1995) and imposes a topic-comment bipartite structure for any sentences. Virtually all constituents, regardless of their grammatical function, can undergo fronting to be topicalized. The structural topic position is obligatory, so that in the default case where the subject precedes other constituents in a canonical SVO order, the subject is assumed to take the topic position.

(25) *Ni weishenme yao zou, bingqie ni weishenme yao xianzai zou?*

You why want.to leave, AND you why want.to now leave

‘Why are you leaving, and why are you leaving now?’

The conjoined speech acts of a topic and a question would be similar. Based on the proposal that topic act conjoins with a subsequent speech act performed by a *weishenme*-question, we would predict that all the expressions that may serve as topics in Chinese may occur outside the scope of *weishenme* without causing intervention. This prediction is borne out. As (26) demonstrates, proper names, pronouns and temporal/locative adverbs can legitimately precede *weishenme*. These are expressions that have long been known to allow for a topic reading (Ernst 1994; Law 2006).²⁷

(26) a. *Zuotian weishenme Lisi mei qu paobu?*

Yesterday why Lisi NEG go jogging

‘Yesterday, speaking of Lisi, why did he not go jogging?’

b. *Zai na'er weishenme dajia xihuan chi kaorou?*

LOC there why folks enjoy eat barbecued.meat

‘There, why do the folks love to eat barbecue?’

Example (27) additionally shows that when multiple topics are co-occurring, they can all precede *weishenme*. There seems to be a functionally based cognitive constraint preventing more

²⁷ In Ernst’s scope isomorphism approach, temporal and locative adverbs raise at LF. In his treatment, the Q operator of *weishenme* raises too. The lack of intervention is then explained by a stipulation, where interpretation can be rescued if the raised Q operator c-commands the trace left behind by an adverb, even if that adverb itself occupies a higher structural position than the Q operator (Ernst 1994, 252).

In my theory, such *ad hoc* assumptions are not needed. Instead, a simple explanation can be achieved by the interaction between the attachment of force and the topicality of adverbs. Temporal or locative adverbs are simply treated as topical adverbs that scope above the force domain.

than three topics from co-occurring in the same sentence in Chinese. But a sentence with three topics is marginally acceptable (Xu 2006). In such case, we also find a *weishenme*-question with three preceding topics:

(27) ?*Zhe-chang yinyuehui ni mingtian weishenme yao qu?*

This-CLF concert you tomorrow why will go

‘(As for) This concert, (talking about) tomorrow, why you will go?’

Apart from topics, the second class of subsentential expressions that scopes out of illocution are the epistemic attitude adverbs such as *daodi* ‘on earth’ and *jiujing* ‘frankly/honestly’.²⁸ Importantly, this class of adverbs express epistemic attitude towards speech acts (Jackendoff 1972; Ernst 1994; Ernst 2001). As such, they are speech act-level modifiers and take the illocutionary operator as their argument. Hence, they fall outside the scope of illocution. In (28), I show that both a speech-act adverb and a topic may precede *weishenme*:

(28) *Ta jiujing/daodi weishenme cizhi?*

He in.the.hell/honestly why resign

‘As for him, why the hell did he resign?’/‘As for him, honestly, why did he resign?’

A contrast exists between this class of speech act-level adverbs and proposition-level attitude adverbs such as *yiding* ‘definitely’ and *kongpa* ‘probably/most likely’, as we can see below:

²⁸ Ernst (1994) is the first to observe this phenomenon, but he only gives examples for A-not-A questions. Please refer to my discussion about the adverb effects in A-not-A questions in the next chapter.

- (29) #*Ta yiding/kongpa* *weishenme cizhi?*
 He definitely/probably why resign
 #‘Definitely/Probably, why did he resign?’

Unlike *daodi/jiujing*, adverbs such as *yiding* ‘definitely’ indicate the speaker’s attitude towards the propositional content or contents of smaller units, rather than the speaker’s attitude towards the speech act. According to Ernst, *yiding* and *kongpa* are not compatible with taking a question illocutionary operator as its argument. Interpreting the question operator within their scope creates a semantic anomaly.²⁹ For example, Ernst shows that the following *why*-question in English in (30) receives the paraphrase in (31):

- (30) *Briefly/Honestly/Come on, why did she object so much?*
 (31) Paraphrase: ‘Tell me honestly why...’

Here Ernst posits a question feature [+Qu] as representing the interrogative force. In a *why*-question, the interrogative force expresses itself as a request to match a presupposed proposition to its unique reason, in the form of:

- (32) [+Qu] *weishenme p* = Given *p*, tell me a *q*, such that *q* is the unique reason *q* CAUSE *p*.

This speech act operator attaches to the left of *why*, taking *why* and its propositional argument in its scope.

²⁹ Ernst assumes the Huang-style LF movement in deriving the semantics of A-not-A questions. Accordingly, both the adverb and the interrogative morpheme NQ needs to move to the left periphery at the LF. He also argues that the interpretation needs to follow the scope principle (Li 2007) (while I do not agree that scope principle is needed), which stipulates that operator scope at LF should match their linear order at the overt syntax.

(33) *daodi* [+Qu] *weishenme* *p*

On the other hand, if other epistemic adverbs such as *yiding* ‘definitely’ precedes *weishenme*, they also need to take the speech act operator as their argument, creating the representation and interpretation as follows:

(34) *yiding* [+Qu] *weishenme* *p*

#‘Definitely, tell me why *p*.’

Interpreting the question operator within the scope of *yiding* creates a semantic anomaly, because such adverb is not compatible with taking question operators as arguments. In other words, an expression is able to precede *weishenme* if and only if they are able to take the *weishenme*-question’s illocutionary operator in their scope. A speech-act level adverb does so by modifying the speech act itself. As such, it patterns with topics and does not cause intervention.

The above discussion about what may scope above *why* should also offer a natural explanation for the well-known fact that certain conditionals do not allow *why* to occur within one of their clauses. For instance, in Chinese, donkey (or bare) conditionals are conditionals without overt conditional markers *if* and look like correlatives (Cheng & Huang 1996; Lin 1996). The consequent contains a (donkey) anaphor in the form of a *wh*-word that refers back to an identical *wh*-word in the antecedent. A peculiar aspect of Chinese *wh*-conditionals is that they are not compatible with *weishenme*, as opposed to *yinwei shenme* ‘because of what’:

(35) a. *Ni yinwei shenme cizhi, wo (jiu) yinwei shenme cizhi.*

You because.of what resign, I then because.of what resign

‘For whatever reason that you resign, I will resign for that reason.’

b. *#Ni weishenme cizhi, wo (jiu) weishenme cizhi.*

You why resign, I then why resign

#‘You why resign, I will then why resign.’

I argue that the reason for the oddness in (35b) is that, unlike *yinweishenme*, both the *weishenme*-antecedent and the *weishenme*-consequent in (35b) have an independent illocutionary force.³⁰ Importantly, in donkey conditionals, the assertion illocutionary force is associated with the entire sentence. The antecedent cannot take up independent illocutionary marking, as seen in (36).

(36) *Wo yinwei shenme cizhi (#ma), ni (jiu) yinwei shenme cizhi ma?*

I because.of what resign, you then because.of what resign MA

‘Is it true that for whatever reason that I resigned, you will resign for that reason?’

Ma is a yes-no operator that turns a declarative into a root yes-no question and overtly marks the yes-no question’s speech act (Cheng 1992). As such, it cannot be appended to the antecedent of a donkey conditional. For the same reason, because *why* must be associated with the expression of a speech act on its local clause, the antecedent and the consequent in a *why*-donkey conditional must receive their own illocutionary operators. Therefore, my theory of *why* explains

³⁰ More research is needed before we can spell out a comprehensive theory of the illocutionary force attachment in donkey conditionals. As it stands, my explanation for the infelicity of (35b) crucially relies on the assumption that the *weishenme*-antecedent and the *weishenme*-consequent in a donkey conditional sentence are obligatorily associated with their own illocutionary forces in the same way as a *weishenme*-question. However, in lack of further research, I will remain silent on why this is the case (that is, is it justified to treat the two *weishenme*-clauses in a donkey conditional as implicit questions?). For the current purpose, it is important to notice that non-*why* analogs to (35b) are felicitous.

the oddness of (35b) as a conflict of competing requirements.

On the other hand, *weishenme* may legitimately occur inside the consequent of a speech-act conditional, illustrated as follows:

(37) *Ruguo ni bu-jiayi wo wen dehua, ni weishenme cizhi?*

If you NEG-mind I ask PRT you why resign

‘If you wouldn’t mind me asking you, why did you resign?’

Importantly, the antecedent of a speech-act conditional scopes out of the speech act that is performed on the consequent. Various proposals have suggested that this antecedent is an aboutness topic, and as topic it would naturally scope out (Endriss & Hinterwimmer 2008; Ebert et al. 2014). If this is valid, then it comes as no surprise that the antecedent is able to occur outside the scope of a *weishenme*-clause.

With a theory of topic scope in place, I now recapitulate my account of intervention effects in *why*-questions: *weishenme* selects for a propositional argument. It is detached from the propositional argument that it modifies, such that scope-taking elements within that propositional argument must take scope below *why*. The speech act operator (represented by an imperative operator) scopes immediately above *why* and takes the combination of *why* and *why*’s propositional argument as its sentence radical. According to this configuration, if any element is able to occur outside the imperative operator, it may precede *weishenme*. This element may be a speech act-level modifier. Alternatively, it may be a scope-taking element that takes wide scope over the imperative operator. If a scopal element is capable of doing so, it must be a topic.

The reason linear precedence relation correlates with scopal relation is because long-distance scrambling is impossible in Chinese (Ko 2005). As I already show, proposition-level operators do not take part in quantifier scope. When two scopal elements at the proposition level exhibit a

scope-linear ordering mismatch, it has to be the case that one element scrambles across the other. As is already noticed by Ko, unlike Japanese and Korean, Chinese does not allow scrambling of subjects and hence no quantifiers may scramble across the directly merged *weishenme*. Importantly, scrambled operators reconstruct their scopes at LF. In Japanese and Korean, when generalized quantifiers scramble across the *why*-adjunct at surface syntax, they reconstruct their scope at the trace position (subject position) (Kitagawa 1990). Because reconstruction is not available in Chinese, when quantifiers such as *meiyou ren* ‘no one’ precedes *weishenme*, we cannot receive an interpretation in which *meiyou ren* is reconstructed below the scope of *weishenme*.³¹

In this view, if a quantificational element takes wide scope over *weishenme*, it has to be a topic that scopes outside the *weishenme*-question’s illocutionary force. Consequently, if a quantifier is construed as topical and hence is able to undergo topicalization, it may scope above *weishenme*. On the other hand, if a quantifier cannot be construed as topical, outscoping would be impossible, and intervention effects arise in such cases, because for the non-topicalizable quantifier, the ordering of the quantifier preceding *weishenme* is impossible, hence semantically anomalous.

In the next section, I present evidence that the topicality of quantifiers makes good predictions about the intervention data in Chinese. The notion that there exists a component of the sentence that determines the use of the sentence radical dates back to as early as Wittgenstein (1945). As mentioned above, Ernst treats this component semantically in the form of an imperative operator, by which the speaker takes the utterance of the sentence radical as its argument and performs a request of information from the listener. As such, question is

³¹ For further discussions on Japanese and Korean’s scrambling and reconstruction, see (Saito 1992; Choe 1994; Grewendorf and Sabel 1999). For the argument that Chinese does not allow scrambling, see also Soh (1998).

considered one of the basic speech act (assertion, request, etc.) (Åqvist 1975; Vanderveken 1990). The sentence radical can be seen as unsaturated unless attached to an operator expressing speech act (Åqvist 1975; Belnap 1969; Lang and Steinitz 1978; Wachowicz 1978; Chierchia 1993). This idea allows us to model speech acts as semantic objects. More specifically, Krifka (2001) proposes a semantic compositional analysis of the combination between the propositional radical and the speech act operator as follows:

- (38) a. A Speech Act is one of the basic types (type *a*).
 b. A Speech Act operator is a function from the type of the sentence radical it selects to type *a*. For instance, the Assertion Operator ASSERT is type $\langle st, a \rangle$.

Such a theory of speech acts enables us to represent how topic initiates its own act and how the topic act interacts with the rest of the sentence it occurs with. Before that, we need a syntactic rule of topicalization. Krifka already hints at a way to implement the syntax of topicalization in the minimalism framework. Krifka (1999; 2001) espouses a treatment that incorporates the speech act into syntax and makes use of speech acts as semantic objects within the sentence grammar. He proposes that the speech act operator is within the boundary of sentence grammar, occupying a Speech Act Phrase (SAP) projection that is headed by a speech act operator which takes the sentence core (CP) as its complement.

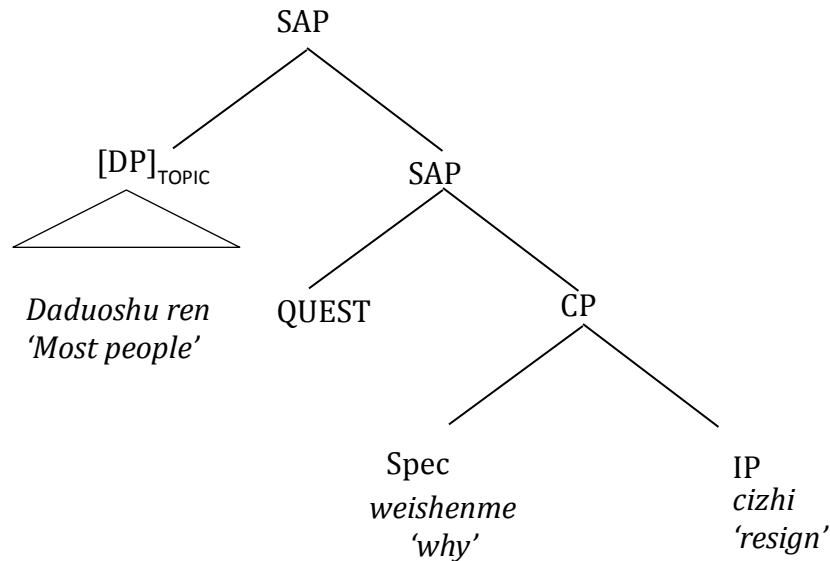
Accordingly, Krifka proposes to recursively define two SAPs in the case of topicalization. The topic merges to the specifier of the first SAP, the head of which is occupied by another SAP, which is in turn headed by a basic speech act operator taking a CP complement. For instance, in the *why*-question (39a), I analyze the DP *duoshu ren* ‘most people’ as a topical quantifier. Under the Minimalist Program analysis, this sentence can be represented as (39b).

(39) a. *Duoshuren weishenme cizhi?*

Most person why resign

‘For most people, why did they resign?’

b.



It is also possible to formulate such an account in HPSG. Although my account is in principle compatible with any HPSG theory of information structure (*e.g.* Vallduví 1992 and Engdahl and Vallduví 1996), for expository purposes I follow Bildhauer (2007) in my formulation, in which topic and comment (as well as other information-structural categories such as focus) are introduced as set-valued features TOPIC and COMMENT, bundled under the feature IS (information structure) as in (40):

(40)

$$\left[\begin{array}{ll} \text{PHON} & \textit{list} \\ \text{SYNSEM} & \textit{synsem} \\ \text{IS} & \left[\begin{array}{ll} \text{TOPIC} & \textit{set} \\ \text{COMMENT} & \textit{set} \end{array} \right] \end{array} \right]$$

A sentence S with a topic NP extracted from it is specified as [SLASH {NP}]. Once this slashed S combines with the topic, the resulting S will have an empty SLASH value. In (41), I provide the topicalization rule for Chinese, which is basically identical to the topicalization rule for English in Pollard and Sag (1994:162).

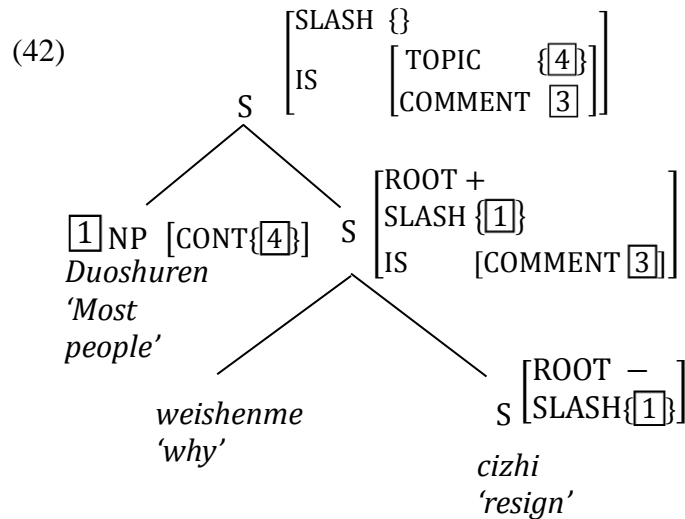
(41)

$$\left[\begin{array}{ll} \text{SYNSEM} & \left[\text{SLASH } \boxed{1} \right] \\ \text{IS} & \left[\begin{array}{ll} \text{TOPIC} & \boxed{2} \cup \{\boxed{3}\} \\ \text{COMMENT} & \boxed{4} \end{array} \right] \end{array} \right] \rightarrow$$

$$\boxed{0} \text{NP} \left[\begin{array}{ll} \text{SYNSEM} & \left[\text{CONT } \boxed{3} \right] \end{array} \right] \quad \left[\begin{array}{ll} \text{SYNSEM} & \left[\text{SLASH } \{\boxed{0}\} \cup \boxed{1} \right] \\ \text{IS} & \left[\begin{array}{ll} \text{TOPIC} & \boxed{2} \\ \text{COMMENT} & \boxed{4} \end{array} \right] \end{array} \right]$$

I define the SLASH value of the S that has yet to combine with any topics in terms of set union. This is meant to capture the fact, as we have noted above in this section, that Chinese allows for multiple topics (indeed, any topicalized constituents are able to occur to the left of a *why*-clause).

When there is only one topicalized subject NP, the resulting topicalized *why*-question will be [SLASH {}]. The *why*-specific topicalization rule enables us to capture sentences such as (39a), represented as (42).



With topicalization properly characterized, I now present a theory-neutral, semantic characterization of how two speech acts interact. Again, I follow the position adopted by Krifka that natural language allows speech acts to conjoin. A topic-comment structure expresses two sequential, conjoined speech acts, comprising the referring act of a topic, to be followed by a basic speech act (assertion, request, command, etc.) that is performed against the referent as established by the topic.

Krifka (2001) treats speech acts as semantic objects with the basic type *a*. Correspondingly, we can define the type of a basic speech act operator. For example, the assertion operator ASSERT is of type $\langle st, a \rangle$, taking a proposition $\langle st \rangle$ and returning a basic speech act of assertion. To capture the referring act of a topic, Krifka also posits a referring speech act operator REF of type $\langle e, a \rangle$. Finally, & is a conjunction operator that conjoins speech acts (type $\langle a, \langle a, a \rangle \rangle$).

To capture the topic-comment structure in terms of conjoined speech acts, I will introduce

some additions to the standard higher-order typed logic I have used in my semantic representation. Essentially, I follow Krifka (1992) and von Stechow (1991) and make use of structured meaning $\langle \phi, \psi \rangle$ as a means to keep track of two meaning contributions in parallel, in particular the meaning contributions of topic-comment expressions. This is done by introducing a dotted type:

- (43) a. e, s, t, a are basic types (for individuals, worlds, truth-values, speech acts, respectively).
 b. If σ, τ are types, $(\sigma \circ \tau)$ is a type.
 c. $D_{(\sigma \circ \tau)} = D_\sigma \times D_\tau$ is the domain of σ - τ pairs.

Second, the $\langle \phi, \psi \rangle$ structure is interpreted as pairs of denotations of the corresponding domain:

- (44) $\llbracket \langle \phi, \psi \rangle_{(\sigma \circ \tau)} \rrbracket = \langle \llbracket \phi \rrbracket, \llbracket \psi \rrbracket \rangle$

Crucially, the dotted type assigned to the $\langle \phi, \psi \rangle$ structure does not belong to any of the basic types. As speech act operators are defined on basic types, this presents a type mismatch during interpretation. I propose to resolve this type mismatch by the following interpretation rule, the result of which gets us conjoined speech act:³²

- (45) If the utterance of a sentence S with meaning $\llbracket S \rrbracket = \llbracket \langle \phi, \psi \rangle \rrbracket$ cannot be interpreted as SA $\langle \phi, \psi \rangle$ where $(SA \in \{\text{ASSERT, REQUEST, ...}\})$, then this utterance is interpreted as a conjunction of speech acts as follows:

$$\text{REF}_X(\phi) \ \& \ \text{SA}(\psi(X))$$

³² I thank Stefan Hinterwimmer for suggesting to me that the topic-comment structure can be represented using structured meaning.

We can see that this interpretation rule applies to the structured meaning of a topic-comment structure. This is because SA ($\langle \phi_{topic}, \psi_{comment} \rangle$) cannot be interpreted due to a type mismatch. For example, if SA = REQUEST, the request speech act operator is of type $\langle stt, a \rangle$, requiring a question of type $\langle stt \rangle$ as its argument. According to our interpretation rule using dotted type, $\langle \phi_{topic}, \psi_{comment} \rangle$ is of type $(e \circ stt)$. As a result, the topic-comment structure always gets interpreted as a conjoined speech act instead.

In the case where a sentence performs an assertion, the assertion is structured into a topic and a comment, represented as the following schema:³³

$$(46) \quad \text{ASSERT} (\langle \phi_{topic}, \psi_{comment} \rangle) \rightarrow \text{REF}_X (\phi_{topic}) \ \& \ \text{ASSERT} (\psi_{comment} (X))$$

Similarly, where a sentence performs a question act of request, the request is structured as follows:

$$(47) \quad \text{REQUEST} (\langle \phi_{topic}, \psi_{comment} \rangle \rightarrow \text{REF}_X (\phi_{topic}) \ \& \ \text{REQUEST} (\psi_{comment} (X)))$$

Finally, I adopt Reinhart's (1997) definition and define a quantifier as witnessable if and only if the quantifier receives a plural indefinite reading, denoting its witness set. The witness set is selected via a choice function.³⁴ Reinhart's witnessability definition is given as follows:

³³ Krifka credits Vanderveken (1990) with first drawing attention to the phenomenon of conjoining speech acts in natural languages. Drawing on Wittgenstein's (1956) theory of speech acts as conversational moves, Krifka suggests that speech acts may conjoin because one conversational move may change the conversational states (states where social commitments hold) into a state that expects another move/speech act. For example, a question-answer pair is viewed as one initiating act followed by a responding act. The first act makes the move to introduce a state where social convention commits the other interlocutor to making a counter-move as a response, thereby triggering the responding act.

³⁴ Witness set refers to the plurality individual set determined by the intersection of the restrictor and the nuclear scope. That is, given a quantificational determiner D, one predicate P and another predicate Q, D(P)(Q) gives rise to the witness set $W = P \cap Q$ (Barwise & Cooper 1981, Szabolcsi 2010).

- (48) A quantifier is *witnessable* iff it entails the existence of a plurality individual set that satisfies both the quantifier's restrictor and its nuclear scope, *i.e.* it entails the existence of its witness set.

Crucially, I claim that whereas monotone increasing and non-monotonic quantifiers are witnessable, monotone decreasing quantifiers are not witnessable. This means that, when used as a topic, the witnessable quantifier *most people* denotes the plurality returned by the choice function f when applied to the property of being a majority of all the context-relevant individuals, such as the following:

- (49) $\llbracket \textit{most people} \rrbracket = \llbracket [f \textit{ most}] \textit{ people} \rrbracket = f(\lambda x_e [\textit{people}(x) \wedge |\text{SUM}(x)| > \frac{1}{2} \{y: \textit{atom}(y) \wedge \textit{person}(y)\}])$

A non-witnessable quantifier, such as *few people*, may have a verifiable, non-empty witness set. But it does not make reference to its witness set by denoting any choice-function selected pluralities. The following denotation only works for the monotone increasing quantifier *a few people*, whereas *few people* cannot have such denotation:

- (50) $\llbracket \textit{A few people} \rrbracket = \llbracket [f \textit{ a few}] \textit{ people} \rrbracket = f(\lambda x_e [\textit{people}(x) \wedge |\text{SUM}(x)| < \frac{1}{2} \{y: \textit{atom}(y) \wedge \textit{person}(y)\}])$

Now we can derive intervention effects from the interaction of topicalization, conjoined speech acts and witnessability. In (51a), the *why*-question with the quantifier *daduoshu ren* 'most people' is acceptable as it is interpreted with the semantics in (51b). I also provide a less formal paraphrase of the question's meaning in (51c):

(51) a. *Daduoshu ren weishenme qu?*

Most person why go

b. Semantics:

$REF_y (y = f(\lambda x_e [people(x) \wedge |SUM(x)| > \frac{1}{2} \{y: atom(y) \wedge person(y)\}])) \&$

$REQUEST (\lambda q \exists r [q = \lambda w [r CAUSE p \text{ in } w \wedge p = \lambda w' go(y)(w')]])$

c. Paraphrase:

‘(Speaking of/As for) the plurality returned by the choice function f when applied to the property of being a majority of all the context-relevant individuals, why are they going?’

On the contrary, the *why*-question with the quantifier *henshao ren* ‘few people’ is unacceptable because *henshao ren* cannot be a topic. That is, (52a) does not have the interpretation in (52b). Also, the paraphrase in (52c) is an impossible one:

(52) a. *#Henshao ren weishenme qu?*

Few person why go

b. Not compatible with the semantics:

$REF_y (y = f(\lambda x_e [people(x) \wedge |SUM(x)| < \frac{1}{2} \{y: atom(y) \wedge person(y)\}])) \&$

$REQUEST (\lambda q \exists r [q = \lambda w [r CAUSE p \text{ in } w \wedge p = \lambda w' go(y)(w')]])$

c. Paraphrase:

#‘(Speaking of/As for) the plurality returned by the choice function f when applied to the property of being few of all the context-relevant individuals, why are they going?’

3.3 Evidence for Topicality

In the previous sections I argued that quantifiers can receive a choice function reading and

denote individuals, deviating from the Barwise-Cooper analysis where a generalized quantifier denotes a relation between predicates. Conceptually, there are doubts about treating a relation between sets (a second-order predication) as a semantic primitive (*e.g.* Krifka 1999; Szabolcsi 2010). This thesis makes no attempt at addressing the deeper concern of whether GQs should denote second-order predication at all. It suffices for my purpose to show that a choice functional approach readily allows GQs to have a type-*e* denotation. Importantly, I want to claim that not all quantifiers can be of type *e*.

Independently, experimental results show that the monotonicity of a quantifier affects its ability to entail a witness set due to processing reasons (Geurts and van der Slik 2005; Bott et al. 2013). To verify a quantified sentence containing *many* or *most* or *more than two*, one needs to find positive instances that members within the restrictor set satisfy the *many*-relation, the *most*-relation, etc.. In other words, one needs to verify the existence of a witness set. In contrast, for quantified sentences with *no*, *few*, or *less than two*, the verification procedure more often requires drawing a negative inference based on the absence of positive instances (in which case the witness set is empty). Although there is still a paucity of relevant work on this topic, the intuition is that monotone decreasing quantifiers are not an informative way to denote a witness set.

The notion of topical quantifiers has been a relatively recent one. It was touched upon in Frey (2001; 2004) and dealt with in detail by Endriss (2008). According to Endriss, the clearest indication that certain types of quantifiers can be topics comes from overt syntactic and morphological marking. Syntactically, Frey (2004) argues that there is a position in the German *Mittelfeld* (middle field) that can only and must be targeted by constituents that are interpreted as

aboutness topics: the one directly above the base position of a sentence adverbial. Frey (2004: 157) formulates the following principle:

(53) Frey's Topic Principle

In the middle field of the German clause, directly above the base position of sentential adverbials, there is a designated position for topics: all topical phrases occurring in the middle field, and only these, occur in this position.

Under the assumption that Frey's topic principle is correct, it can be used as a test to determine which quantifiers can be interpreted as topics. In example (54), the sentence adverbial *interessanterweise* (interestingly) marks the position to its left as a topic position.

(54) *Während des Vortrags haben {#kein/#wenig/die meisten/?mehr als drei/? drei*

During the talk have {no/few/the most/more than three/three}
Studenten} *interessanterweise* geschlafen.

students interestingly slept.

‘{#No/#Few/Most/?More than three/? Three} students have slept during the talk,
interestingly.’

The above sentence shows that among quantificational plural indefinites, monotonic increasing indefinites (*die meisten*, *mehr als drei*) and bare numeral indefinites (*drei Studenten*) are well suited in Frey's topic position, whereas monotone decreasing quantificational indefinites (*kein Studenten*, *wenig Studenten*) cannot occur in Frey's position.³⁵

³⁵ Judgments regarding increasing modified numerals are much less clear-cut. Frey reported the quantificational indefinite *mehr als drei* ‘more than three’ to be marginal when occurring in the topic middle field position, as opposed to monotone increasing quantifiers with no numeral components, such as *die meisten* ‘the most’, which are reported to be quite OK. In the following, we see that modified numerals in Japanese/Korean are also subject to significant variation. It seems that such variation can be found both

This semantic distinction between decreasing and non-decreasing quantifiers also has firm backing from the morphological marking. For example, Kuno (1972) argues that in Japanese main clauses, the morphological marker *wa* can mark both aboutness topics and contrastive topics. Furthermore, Korean has a very similar *nun* (and its variant *un*) marker that can be suffixed to topic constituents (Lee 1987; Tomioka 2007). Although the issue of topical quantifiers is seldom mentioned in the previous literature, one can find a few comments on the possible *wa*-markings of quantifiers in Tomioka (2007). It is shown that *wa*-marking in Japanese and *nun/un*-marking in Korean are possible with *hotondo-no gakusee-wa/taypwupwun-un-uy haksayng-un* ‘most students’, respectively. Furthermore, in Japanese *wa*-marking is also possible for bare numeral indefinites, as in *3-biki-no neko-wa* ‘three cats’, but only marginal for modified numerals such as *3-biki-yori ooku-no neko-wa* ‘more than three cats’ (Endriss 2008, reported by Shinichiro Ishihara).

Finally, in Shanghainese (a Chinese language belonging to the Sinitic branch of the Sino-Tibetan family), monotone decreasing quantifiers resist the suffixation of topic marker *-məʔ*, while monotone increasing quantifiers (including *more than three*) and non-monotonic bare numeral indefinites allow the attachment of *-məʔ* with mildly good to good acceptability (Xu & Shao 1998; Qian 2002). That is, (a subset of) monotone increasing quantificational indefinites are among the topicable quantifiers, which is similar to what we found in German.

The strongest evidence for the distinction between decreasing and non-decreasing quantifiers so far comes from Constant (2013), who provides a series of English diagnostics to support partitioning quantifiers in terms of their witnessability. The first is that witnessable quantifiers may serve as contrastive topics. In English, contrastive topics can be identified by a particular

inter-personally and across languages (Chinese more readily allows for topical increasing modified numerals, compared to German and Japanese/Korean). The cause for such variation will be left to future investigation.

intonational pattern.³⁶ Crucially, Constant points out that the distinct contrastive topic pattern is at play in the following:³⁷

- (55) A: Where do the grads live?
 B: [___]_{CT} (of the) grads. . . live [in AMHERST]_F.
 {Most/Ten/More than Ten/Exactly Ten/
 #Few/#None/#At Most Ten/#Less than Ten }

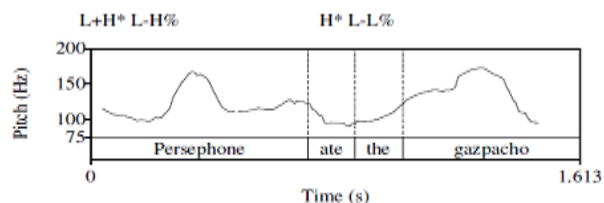
If CT-marked quantifiers such as *most* only have a standard GQ reading, they would be construed as answering one of the subquestions of question A. These subquestions would be the alternatives in {*Where did most grads live? Where did a few grads live? Where did no grads live? ...*} (see Rooth 2005 for a discussion of how a contrastive topic-marked answer is answering a subquestion of a preceding overall question). This does not accord with our intuition, in which B's answer means that B has information about where a majority subset of individuals live, as opposed to the rest of the individuals about whom B has no information. If *most grads* denotes a specific plurality of individuals, then the contrasting alternatives will be between

³⁶ As Büring (2003) points out, in English contrastive topics are realized with a distinctive intonational pattern. (i) illustrates a typical CT contour, given in Constant (2012). In this sentence, the subject is pronounced with a rising accent and a rising boundary. This is accompanied by the object of the sentence with a falling focus contour (falling accent and falling boundary). In (ii), the intonational pattern is marked:

(i) A: What about Persephone and Antonio? What did THEY eat?

B: PERSEPHONE...ate the GAZPACHO.

(ii)



³⁷ Again, both the reported judgments by Constant and the judgments provided by the native speakers I consulted suggested that the patterns of acceptability for modified numerals are hardly homogeneous. Monotone increasing modified numerals are not uniformly acceptable for every speaker, nor are monotone decreasing modified numerals uniformly unacceptable. Judgments for *few* and *none* are converging: speakers agree that they lead to uninterpretable sentences.

different individual grads. This seems to be exactly what (55) does. Furthermore, if CT-marked quantifiers are standard GQs, it would be mysterious why quantifiers such as *few* cannot form an answer. If we subscribe to a choice functional approach, the reason is obvious, as *few* does not denote a choice function-selected plurality. Furthermore, if quantifiers such as *few* lack choice-functional interpretations, then an answer in (55B) with *few* only has the standard GQ reading. If we assume that CT is simply unable to contrast quantifiers of this type, then the sentence will be ruled out.

Having shown that the CT data in English provides evidence for quantifiers to denote individual meaning, I next show that Chinese echoes the English CT pattern. The Chinese equivalent to Constant's English example is illustrated below:

(56) A: *Yanjiusheng-men zhu zai naer?*

Graduate.student-PLURAL live LOC where?

'Where do the grads live?'

B: $\{ \{ \text{Daduoshu/Wu-ge/\#Henshao yanjiusheng} \}^{\text{CT}} \text{ zhu zai } [\text{anhesite}]^{\text{F}} \}$.

Most /Five-CLF/#Few graduate.student live LOC Amherst

' $\{ \{ \text{Most of/Five of/#Few of the graduate students} \}^{\text{CT}} \text{ live at } [\text{Amherst}]^{\text{F}} \}$.'

Furthermore, early on I already pointed out a clearly contrastive use, repeated as below. In this utterance, the minority of people is used contrastively against a prior mentioned majority plurality of individuals. The *minority of people* part also receives primary stress typical of Chinese contrastive topics.

- (57) *Ni gaosu wo de shi daduoshu ren weishenme cizhi. Na [shaoshu ren]_{CT} weishenme cizhi?*
 You tell me *REL COP* most person why resign. Then minority person why resign
 ‘What you’ve told me is why the majority resigned. Now, for the minority, why did they resign then?’

Constant’s second diagnostics involves the use of quantifiers in apposition. For example, he shows that quantifiers differ in the ability to be modified by supplements such as the following:

- (58) ___ *congressmen, who incidentally are very junior, admire Kennedy.*
 {Most/Ten/More than Ten/Exactly Ten/At least ten/
 #Few/#None/#At Most Ten/#Less than Ten}

Following Potts (2005), I use the term ANCHOR to refer to the phrase that the supplement attaches to and adds information about. Semantically, Potts proposes that the supplement composes with its anchor and takes wider scope over the semantic content of the anchor composing with the predicate in the main clause, so that the main clause (or any other part of the sentence) does not have access to the semantics of the supplement. If a quantifier phrase is the anchor and has a standard generalized quantifier meaning, Constant points out that the supplement and the main clause would simply denote two unrelated quantified statements. The quantifier anchor would sequentially apply the quantificational force of its determiner to the supplement as its argument (assuming that the supplement type-shifts to a predicate) and then quantify again over the predicate of the main clause (with the appositive content taking a wide scope). Crucially, Constant argues that this doesn’t get the right interpretation. Consider an unacceptable sentence *Two boys, John and Bill, got weird names*. If the anchor, *two boys*, has a GQ reading, then by applying Potts’ semantics we would conclude that the sentence is true if two

separate quantified statements, *Two boys are John and Bill* as well as *Two boys got weird names*, are both true. In other words, the truth condition is satisfied in a world where there are two boys with the names John and Bill, and there are (another) two boys with weird names. The fact that this reading contradicts our intuition is taken by Constant to mean that the quantifier anchor *two boys* actually denotes a choice-function selected plurality. As a particular choice function variable, the same plurality has to simultaneously satisfy the properties as denoted by the supplement and the main predicate, thereby correctly capturing the oddness of the sentence.

Therefore, evidence from supplement can also be employed to determine the witnessability of quantifiers. As (59) shows, the quantifiers in Chinese parallel their distribution in English.

(59) a. *Shaoshu ren zuo-wan-le. Mei zuo-wan de duoshu ren qing zhuajin.*

Minority person do-finish-PRF. Neg do-finish REL majority person please hurry.up
 ‘Less than half of the people have done already. The majority, who have not done yet, please do speed up.’

b. *Yinwei tong yi-ge yuanyin cizhi de duoshu yuangong jintian yiqi likai-le gongsi.*

Because.of same one-CLF reason resign REL majority staff today together leave-PRF company
 ‘Most of the staff, who have resigned for the very same reason, left the company together today.’

Therefore, it seems that evidence from supplemental information also yields robust supporting results. To avoid controversy with appositive relative clauses,³⁸ I also try with

³⁸ Many believe that Chinese does not have non-restrictive relative clauses. However, I believe this is not the case (see Sproat & Shih 1988 for more arguments that non-restrictive relative clauses exist in Chinese). Without dwelling upon this subject, I list the following two overheard utterances, which are more plausibly analyzed as nonrestrictive:

nominal supplements, which Potts (2015, 13) claims is another type of appositive supplement to the anchor. Chinese allows nominal supplements such as in (60):

(60) *Liang-ge xuesheng---XiaoZhang he XiaoLi---chongming.*

Two-CLF student---XiaoZhang and XiaoLi—share.name.

‘Two students, Little Zhang and Little Li, have a common first name.’

The patterns of quantifier we find in appositive relative clauses are replicated here. Parallel to Constant’s findings in (61), quantifiers in Chinese fall along the monotonicity demarcation line regarding the availability of nominal supplements as in (62).

(61) { $_$ } of my students, (namely) the ones who wanted to pass, came on time.

{Most /More than ten/Ten /#None /??Few/??Less than 20}

(62) a. {*Daduoshu xuesheng/wu-ge xuesheng/chaoguo wu-ge xuesheng*}, *yejiushi xiang*

{Most student/five-CLF student/more.than five-CLF student}, namely want.to

kaoshi tongguo de nei-xie, zhunshi lai-le.

take.exam pass REL DEM-CLF, on.time come-PRF

(i) a. (in a Hongkong bus)

Nin gangcai kandao de zidong gongjiao baozhan xitong

You just.now see REL automatic public.transit notice system

‘The automatic public transit notification system, which you have just seen’

b. (A radio storytelling transcript)

Zuowei yi guo zhi jun de Liu Bang ziran bu hui bu kan zai yan li.

As one nation REL head REL Liu Bang for.sure neg will neg see LOC eye inside

‘Liu Bang, as the head of state, surely won’t fail to see these under his eyes.’

- b. {#Henshao xuesheng/#budao wu-ge xuesheng}, yejiushi pingshi zong kuangke de
 {Few student/less.than five-CLF student}, namely normally always miss.class REL
 nei-xie, zhunshi lai-le.
 DEM-CLF, on.time come-PRF

One further piece of evidence given by Constant is that quantifiers differ in their ability to appear in equative constructions:

- (63) *Those girls standing over there are _ of my best students.*
 {Some/20/ ??many / ?several/ ?a few/??most /??all /?more than 20 / ?exactly 20/
 #few/ #no / #not many / ??less than 20}

In an equative construction, the two-place copula *be* equates two individual-denoting expressions. On the left side, the first argument of the copula is a regular plurality DP. For the equative construction to be well-formed, the right argument needs also be an individual-denoting plurality DP. Therefore, the equative construction provides yet another diagnostic on which quantifier qualifies as type-e. As it turns out, the judgment patterns in (63) match well with the previous diagnostics. Below we see that Chinese again echoes the English pattern.

- (64) [Zhan zai naer de ren] shi [wo de xuesheng li de {daduoshu/ wu-ge/#henshao}].
 Stand LOC there REL person COP I REL student inside REL {most/five-CLF/#few}
 ‘[Those standing over there] are [{most/five/#few} of my students].’

Finally, we can add to Constant’s evidence the observation that the set of quantifiers that are topicalizable are also those that may appear outside overt illocutionary markers. (65) features an overheard utterance, in which the quantifier *shaoshu ren* ‘a few people’ is separated from the rest

of the sentence by a clear prosodic break/pause, and the rest of the sentence bears the imperative particle *qing* ‘please’ and is uttered with a emphatic and falling intonational pattern characteristic of imperative constructions in Chinese.³⁹

(65) [Context: the ward of a raucous college dorm exhorting a group of noise-making undergrads]

Shaoshu ren, qing buyao yingxiang dajia xiuxi!

Minority person, please don’t affect crowd take.rest

‘For those a few people, please don’t affect others’ rest!’

Since the speech act directly attaches to the imperative sentence form, outscoping expressions has to constitute a conjoined speech act. This is further corroborated by the fact that uncontroversially topical expressions can form conjoined speech acts with imperatives by preceding the imperative form.

(66) a. *Mingtian wanshang, qing zai zheli jihe!*

Tomorrow evening, please LOC here assemble

‘At tomorrow morning, please assemble here!’

b. *Xiaoli, qing zhan chu-lai!*

Xiaoli, please step out-DIR

‘Xiaoli, step out!’

Therefore, the parallelism between (65) and (66) shows that monotone increasing quantifiers in Chinese are able to form conjoined speech acts. By contrast, decreasing quantifiers fail to

³⁹ The English translation turns out to be very awkward. Here *shaoshu ren* ‘a few people’ is used as an indefinite, referring to a minority group of people that are identifiable via context,

precede the imperative form.

(67) #*Henshao ren, qing buyao yingxiang daduoshu ren!*

Few person, please don't affect majority.of person

#'For few people, please don't you affect the majority of us!'

In sum, when we consider quantifiers in terms of topicality, we immediately explain why monotone decreasing quantifiers induce intervention effects in the *weishenme*-question: they cannot be topical, hence they cannot give rise to coherent readings in *weishenme*-questions. Non-decreasing quantifiers are unproblematic, because they denote individuals that serve as the topic.

Furthermore, this theory claims that bare numerals and monotone increasing modified numerals can be topics. We still need to explain why these numeral quantifiers induce weak intervention, as seen in (68) (repeated from (5)):

(68) ??{*San-ge ren/zhishao san-ge ren/chaoguo san-ge ren*} *weishenme cizhi?*

{Three-CLF person/t.least three-CLF person/more.than three-CLF person} why resign

'{For three people/at least three people/more than three people}, tell me why

they resigned?'

I believe the weak acceptability in (68) has a pragmatic reason. Following Kratzer (1998; 2003), I assume that choice function variables receive their values directly from the context of utterance. If context does not readily offer a particular plurality as the value for a choice function variable, the speaker won't know which plurality to pick out with the quantifier, and oddness arises. In the case of numeral quantifiers, we are required to pick out a particular plurality bearing a specific cardinal number, which would leave the hearers with no clues if there is no

further information from the context.⁴⁰ Krifka (2001, 193) observes the same problem for the English example in (69):

(69) *Which dishes did two boys make?*

‘For two boys that you select: Which dish did each of these boys make?’

The acceptability is claimed by Krifka to be marginal. This low acceptability, compared to a definite description, simply follows from the fact that it places a higher requirement on the discourse structure and on hearers’ efforts to infer which particular set of two boys are under discussion. This similarly explains why the topical use of quantifiers containing a numeral component is harder. Without explicit context providing supporting information, it is not plausible for a naïve hearer to make a partition of the relevant individuals such that one particular individual set of a given cardinality should be distinguished against other individuals. However, intervention effects are still weaker than in monotone decreasing quantifiers, in the sense that anchoring one such cardinal set is *logically* possible.

For the same reason, one can explain the phenomenon pointed out by Szabolcsi (2006), where a pair-list reading can be induced for a monotone increasing quantifier when it scopes above a *wh*-phrase, yet the same reading cannot be induced for the wide scope-taking negative quantifier:

⁴⁰ This ability to talk about individuals that are only inferred to exist, based on other individuals salient from discourse, is independently shown to be common in natural language (Clark & Haviland 1973):

(i) *A plane flew there. The pilot went back.*

(70) a. *Which book did you read twice?*

Intended reading: #‘For two occasions, tell me which book you read then.’

b. #*How did fewer than five boys behave?*

Finally, embedded questions may offer the contextual information to anchor a particular plurality (Szabolcsi 2010). I will illustrate with the example in (71):

(71) (In a report investigating employee’s resignation)

Wo yijing zhidaole {chaoguo san-ge ren/zhishao san-ge ren/san-ge ren}

I already know {more.than three-CLF person/at.least three-CLF person/three-CLF person}

weishenme cizhi.

why resign

‘I already found out for {more than three people/at least three people/three people}, why they resigned.’

The indirect question that serves as the complement of *found out* does not denote a question type, but rather a fact derived from a question. Specifically, the indirect question is construed as a true answer (true resolution) to the corresponding direct question (Ginzburg and Sag 2000; Lahiri 2002). So (71) is paraphrased as follows: ‘I already found out (the answer to the question of) for three people, why they resigned.’ Following Rooth (2005), this indirect question intuitively answers one subquestion of the overall question: ‘Why did a contextually-salient set of individuals resign?’ In order to answer this overall question based on the knowledge of the speaker, the question is partitioned into two contrasting subquestions. The first asks about a plurality consisting of five people, of whom the speaker has knowledge about. The other asks about ‘the rest of the individuals’ of whom the speaker does not provide an answer due to lack of

knowledge.

By contrast, monotone decreasing quantifiers cannot be ameliorated in embedded contexts.

(72) repeats an example from (8):

(72) #*Wo yijing zhidao henshao ren weishenme cizhi.*

I already know few person why resign

#‘I already knew that for few people, why they resigned.’

There is still no way to answer the question of “Why did few people resign?” by providing a choice function-selected plurality based on the knowledge state, since there exists no witness set corresponding to the quantifier *few*. As such, we can explain why monotone decreasing quantifiers consistently induce intervention.

Furthermore, if previous literature (Kripke 1963, Kamp 1971, Partee 1973) is right about the parallelism drawn between quantificational adverbs and quantificational nominal phrases in that the former quantify over times or possible worlds the same way as the latter quantify over individual sets, then we should expect that adverbs that are monotone increasing are witnessable. In contrast, we should also expect that monotone decreasing ones are non-witnessable and shall never scope above *weishenme* (see also Constant 2012, 294). As we already see, the quantificational adverb *jingchang* ‘often’ may take wide scope over *weishenme* when contexts allow speakers to infer a plurality of situations, such that they cover the majority of all the relevant. On the other end, contextualization fails to rescue the intervention created by the quantificational adverb *henshao* ‘seldom’.

(73) a. *Ta jingchang weishenme bei xia-dao?*

He often why PASS scare-RES

‘For a majority of situations, why was he scared?’

b. *#Ta henshao weishenme bei xia-dao?*

He seldom why PASS scare-RES

#‘For few occasions, why was he scared?’

If the adverbials in (73) quantify over times (Kamp 1971; Partee 1973) or situations (Heim 1990; von Stechow 1994), then we can imagine treatments of *often* as witnessable, in the sense of entailing the existence of a time or situation where the nuclear scope holds. *Seldom* would be non-witnessable, since it doesn’t entail the existence of its witness set.

Thus far, my sole concern has been quantifier-induced intervention effects in *why*-questions. Equally robust in *why*-questions are intervention effects induced by focus-sensitive expressions. The intervention created by an *only*-NP is illustrated again as follows:

(74) a. *#Zhiyou Lisi weishenme cizhi?*

Only Lisi why resign

#‘(As for) only Lisi, why he resigned?’

b. *#Lisi zhi weishenme cizhi?*

Lisi only why resign

#‘It is only the case that why Lisi resigned?’

c. *#Lian Lisi ye weishenme cizhi?*

LIAN Lisi also why resign

#‘For even Lisi, why did he resign?’

My current account would predict that if an element is by nature not topical, it will never precede *weishenme*. This would readily explain the fact that focus-sensitive expressions, such as the *only*-NP or the *even*-NP, cause intervention in *weishenme*-questions, since they are known to be strongly anti-topical (Tomioka 2007).

In what follows I will only discuss the focus expression *only*-NP. I argue that the intervention arises because the *only*-NP is negative by nature. As a result, it is to be interpreted more on a par with *few people*, *nobody*, or *other than NP*. As such, the previous reason for why decreasing quantifiers cannot induce coherent readings carries over.

Previous research on *only* has converged on its exhaustive reading (Horn 1996; Ippolito 2008). Without going over the vast literature on this topic, it suffices to point out that when an NP is focus-marked by *only*, a set of semantic alternatives to the given constituent also enters interpretation. The utterance of an *only*-NP sentence carries a two-fold meaning, asserting the proposition containing the NP constituent while negating the other propositions containing the alternatives (Horn 1969). For example, the two-fold meaning components of the sentence *Only Lisi resigned* are as follows:

(75) *Zhiyou Lisi cizhi.*

Only Lisi resign

a. ‘Lisi resigned.’

b. ‘No one else resigned = The other individuals that are not Lisi did not resign.’

The negative component of *only*-NPs accounts for its strong anti-topicality. Just as a monotone decreasing quantifier cannot be used to anchor its witness set, expressions such as *only Lisi* cannot be used to anchor the individual in *only*'s scope. Note that when *only*-NP stays *in situ* below the scope of *weishenme*, the *weishenme*-question receives a coherent interpretation.

However, the interpretation does not concern the NP bound by *only*, rather it concerns the complement set that is ruled out by the use of the *only* expression. This can be seen in the following question-answer pair:

(76) A: *Weishenme zhiyou Lisi cizhi?*

Why only Lisi resign

‘Why only Lisi resigned?’

B: *Yinwei gongsi de huanjing haishi bijiao hao de.*

Because company *REL* environment still relatively be.good PART

‘Because the environments of the company is actually quite good.’

Intuitively, mentioning *only Lisi* requires an exceptive component of *no one else*. Asserting *only Lisi resigned*, for example, amounts to asserting that *no one else (other than Lisi) resigned*.

Since *only*-NPs pattern with decreasing quantifiers, we naturally expect that embedded contexts fail to rescue the intervention, therefore the following is explained:

(77) #*Wo yijing zhidao-le zhiyou Lisi weishenme cizhi.*

I already know-PRF only Lisi why resign

‘I already knew for only Lisi, why he resigned.’

Finally, it is worth noting that the topicality of quantifiers might be related to the complement anaphora phenomena noticed in the psycholinguistic (Sanford, Williams, and Fay 2001) as well as the semantics literature (Nouwen 2001). As shown in (78), a quantificational sentence may bind cross-sentential anaphora. Interestingly, in (78a), the reference set of the monotone increasing quantifier is subject to subsequent plural anaphoric reference. In (78b), however, it is the complement set of the monotone decreasing quantifier that binds the plural anaphora

(Nouwen 2001, 76).⁴¹

- (78) a. *Most people went to the meeting. They were too busy.*
 b. *Few people went to the meeting. They were watching the football game at home.*

In experiments conducted by Sanford et al. (2001), Nouwen's observation is further supported, as English speakers prefer the reference set of a monotone increasing quantifier as the potential antecedent for anaphora, and prefer the complement set for a monotone decreasing quantifier. For Sanford et al., the fact that different quantifiers project different sets as candidates for antecedents can be explained in terms of the focus patterns each quantifier triggers with regard to the maximum set. An increasing quantifier directs attentional focus to the reference set within the maximum set. Given a suitable context, the witness set lies within attentional focus and stays salient, triggering the use of a quantificational determiner. Conversely, a decreasing quantifier tends to direct attentional focus to the complement set. The use of decreasing quantificational determiner is triggered when a complement set is salient (lies within attentional focus): when the set of individuals that do not fall within a property is salient, the quantificational relation is used to characterize this relation. The differing attentional frame explains the preference for complement anaphora.

Decreasing quantifiers sometimes allow a complement set to be bound by anaphora, as shown in the following example (Evans 1980).

- (79) *Few congressmen admire Kennedy, and they are very junior.*

I argue that in (79), the monotone decreasing quantifier *few* generates the scalar implicature

⁴¹ In uttering a quantificational sentence, three sets are candidates for antecedents that may take part in cross-sentential anaphora with the subsequent sentences (Nouwen 2001). They are (i) the maximum set, coreferential to the restriction set; (ii) The reference set as well as (iii) the complement set (defined as the difference between the maximum set and the reference set).

that at least one individual satisfies its nuclear scope (Horn 1972). For instance, upon hearing ‘Few people went to the meeting’, we infer that at least one person went. If these quantifiers are witnessable, this ‘more than none’ component should be part of the truth-conditional meaning. Importantly, however, this extra meaning is cancelable. One can say a sequence of sentences such as the following without contradicting oneself.

(80) *Few people went to the meeting. In fact, no one went there.*

Furthermore, if the above explanation is on the right track, it also allows us to understand why comparatives involving downward entailing quantifiers are ruled out (von Stechow 1984; Gajewski 2009), shown in (81).

- (81) a. *John weighs more than most people weigh.*
 b. *John weighs more than many people weigh.*
 c. *John weighs more than at least five people weigh.*
 d. *John weighs more than Bill often/always weighs.*
 e. *#John weighs more than nobody weighs.*
 f. *#John weighs more than few people weigh.*
 g. *#John weighs more than fewer than five people weigh.*
 h. *#John weighs more than at most five people weigh.*
 i. *#John weighs more than Bill never/seldom weighs.*

If monotone decreasing quantifiers trigger salient reference to the complement set, the proposition *few people weigh (d-heavy)* would be another way to state that ‘for almost all the individuals that we have evidence for, they do not weigh d-heavy’.

I follow Gajewski (2009) and assume that the argument of the predicate *weigh* denotes the

scale of degrees that is upper bounded by the individual argument's weight. That is, $\{d: \text{Mary is } d\text{-heavy}\} = [0, \text{Mary's weight}]$. It follows that $\{d: \text{Few people are } d\text{-heavy}\} = \{d: \text{The people that we know of are not } d\text{-heavy}\} = (\text{The weight of the heaviest person we know of}, \infty)$

We thus see that comparatives involving *few people* should not work, given that it would be incoherent to claim that John's weight and the above scale overlap (*i.e.* $[0, \text{John's weight}] \cap (\text{The weight of the heaviest person we know of}, \infty) = \emptyset$).

The phenomenon of complement anaphora is closely linked to the witnessability of quantifiers. If increasing quantifiers are triggered when the witness set is salient, but decreasing quantifiers are triggered when the complement set is salient, it goes a long way towards explaining why the association of increasing quantifiers with the witness set might cause the former to directly denote the witness set, and why the dissociation between decreasing quantifiers and the witness set might ban the decreasing quantifiers from expressing type-e meaning. This might link to the processing load of quantifiers with different monotonicity. Downward monotonic quantifiers require more processing efforts to verify, and are in general not an informative way to locate their witness sets (see the discussions by Geurts & van der Silk (2005) and Bott et al. (2013) mentioned in the beginning of this subsection).

In principle, monotone increasing modified numerals and non-monotonic quantifiers behave in the same way as *most* or *a few*, and should also be topical. Sanford et al.'s psycholinguistic experiments also reveal that these quantifiers containing numerals pattern with *most* rather than with decreasing quantifiers in terms of cross-sentential anaphora, illustrated in (82).

(82) *At most ten people attended the meeting. They were not too busy.*

3.4 A Comparison with Japanese and Korean

3.4.1 Intervention Effects in Japanese and Korean *Why*-questions

In this section, I look into intervention effects in Korean and Japanese *why*-questions. Both languages allow *in situ wh*-questions. This makes possible a direct comparison with Chinese as regards the intervention patterns in *why*-questions. A comparison is also theoretically interesting, since I take the semantics of *why* to be the same in Japanese, Korean and Chinese. Therefore, a theory couched in the scopal interactions between a topical element and *why* should make predictions on other languages. The point of variation is how languages reflect scopal relations in terms of linear structural relations.

Korean and Japanese exhibit an interesting phenomenon in that intervention effects are circumvented in *why*-questions. A non-*why in situ wh*-question induces intervention, as illustrated in the Korean example (83).

(83) #*Amwuto mwues-ul ilk-ci-anh-ass-ni?*

Anyone what-ACC read-CI-not-PST-Q

‘What did no one read?’

When the *in situ wh*-phrase in a Korean single *wh*-question is the reason adverb *way* ‘why’, intervention effects we have seen previously disappear (Miyagawa 1997; Kuwabara 1998). This is illustrated in (84).

- (84) a. *Amwuto way ku chayk-ul ilk-ci-anh-ass-ni?*
 Anyone why DEM book-ACC read-CI-not-PAST-Q
 ‘Why did no one read that book?’
- b. {*Nwukwunka-ka/nwukwuna-ka*} *way Boston-ul tenass-ni*
 Someone-NOM /everyone-NOM why Boston-ACC left-Q
 ‘Why did {someone/everyone} leave Boston?’
- c. {*John-man/John-to*} *way Boston-ul tenass-ni*
 {John-only /John-also} why Boston-ACC left-Q
 ‘Why did {only John/John also} leave Boston?’

When the reason adverb *way* is scrambled over the quantifiers or the focus-sensitive operators, the sentence is judged good as would be expected.

- (85) *Way {nwukwunka-ka/nwukwuna-ka /John-man/John-to} Boston-ul tenass-ni?*
 Why {someone-NOM /everyone-NOM/John-only/John-also} Boston-ACC left-Q
 ‘Why {someone/everyone/only John/John also} left Boston?’

Therefore, we come across a contrast between the *why*-adjunct and other *wh*-phrases in Korean. All other conditions being equal, Korean *why*-questions *circumvent* intervention effects. Japanese exhibits a very similar pattern. In Japanese single *wh*-questions, intervention is also induced when a quantifier linearly precedes the *in situ wh*-phrase, illustrated in (86).

- (86) a. #*Daremo nani-o yom-ana-katta-no?*
 Anyone what-ACC read-NEG-PST-Q
 ‘What did no one read?’

b. ??? *Ken-dake-ga nani-o yon-da-no?*

Ken-only-NOM what-ACC read-PST-Q

‘What did only Ken read?’

c. #*Ken-sika nani-o yom-ana-katta-no?*

Ken-except what-ACC read-NEG-PST-Q

‘What did no one but Ken read?’

However, in an *in situ why*-question, no intervention shows up, regardless of the ordering between the quantifier and the reason adverb *naze* ‘why’. These patterns are shown in (87), taken from Tomioka (2007).⁴²

(87) a. *Daremo naze ko-nak-atta-no?*

Anyone why come-NEG-PST-Q

‘Why did no one come?’

b. *Taroo-sika naze sono hon-o yoma-nakat-ta-no?*

Taroo-only why that book-ACC read-not-PST-Q

‘Why did only Taroo read that book?’

c. *Ken-sika naze ko-nak-atta-no?*

Ken-except why come-NEG-PST-Q

‘Why did no one but Ken come?’

⁴² Understandably, the judgment patterns for Korean and Japanese are similar, but they are not identical (Ko 2005; Tomioka 2009). Ko (2005) reports that Korean speakers have more stable and uniform judgments about the phenomenon that *why* circumvents intervention than Japanese speakers. In terms of Japanese, Tomioka has claimed that Japanese speakers are less in agreement in accepting *why*-questions such as (87). Yet in an informal experiment by Miyagawa and Endo (2004), 116 out of the 122 speakers find a sentence similar to (87) acceptable. All the Japanese speakers I personally consulted also agreed that (86a) is good. In this thesis, I will assume that *why*-circumvention is robust in both languages.

As we can see, while Japanese and Korean have a shared pattern, the pattern differs from that in Chinese. I argue that the circumvention facts in Japanese and Korean *why*-questions can be accounted for in my framework, once we consider the mismatch between surface order and scopal relations in Japanese as well as Korean. In the next two subsections, I summarize two analyses of *why*-circumvention. In subsection 3.4.4, I draw from previous analyses and provide an account of *why*-circumvention that is consistent with my theory of Chinese intervention.

3.4.2 The High Attachment Analysis (Ko 2005)

A relativized minimality approach does not capture the Korean and Japanese data, since by defining relativized minimality in terms of the structural c-command relation, there is no way to predict why intervention is induced in Chinese *why*-questions with a preceding quantifier, but not in Korean *why*-questions that similarly have a preceding quantifier.

To account for the case where a scopal operator precedes *why* in Korean and Japanese, Ko (2005) concurs with Beck & Kim (1997) that the scopal operator has undergone A'-scrambling. As such, the scopal operator simply scrambles over the initially merged *why*-adjunct and the resulting configuration, illustrated below, induces no intervention effects.

(88) [CP *amwuto*₁ [CP *way* [~~uWH~~] C_[+Q] [IP t₁...]]]

However, to say that Ko's theory is compatible with relativized minimality is missing the real point of the minimality-based account. The minimality theory, to the extent that it is meaningful, serves as the critical evidence that covert LF movement exists. Under Ko-style implementation, the vacuous application of relativized minimality would not provide motivation for establishing any quantifier as an intervener. When there is no intervener, there is no independent evidence for

believing that covert LF movement does occur.⁴³

Apart from handling the data in matrix *why*-questions, Ko presents further evidence from embedded contexts. Importantly, Ko highlights the fact that an embedded interrogative *why*-question in Japanese as well as Korean is similarly exempt from intervention. However, intervention arises in embedded declarative *why*-questions. Comparisons are drawn in (89)-(90).

(89) *Embedded interrogative*

John-un [amwuto way ku chayk-ul ilk-ci-anh-ass-nunci] mwul-ess-ta.

John-TOP anyone why that book-ACC read-CI-not-PST-Q ask-PST-DEC

‘John asked [why no one read that book].’

(90) a. *Embedded declarative with matrix scope-bearing elements (SBE):*

#Amwuto [John-i way saimha-yess-ta-ko] malha-ci-anh-ass-ni?

Anyone John-NOM why resign-PAST-DEC-C say-not-PAST-Q

‘Why_i nobody said that [John resigned t_i]?’

b. *Embedded declarative with clause-mate SBE:*

#John-un [amwuto way ku chayk-ul ilk-ci-anh-ass-ta-ko] malhayss-ni?

John-TOP anyone why that book-ACC read-CI-not-PAST-DEC-C said-Q

‘Why_i did John say that [nobody read that book t_i]?’

To understand this further complexity, Ko states that the types of movement involved in

⁴³ Tsai explicitly endorses the view that quantifiers serve as interveners, as an effort to warrant the mechanism of covert movement. Although he partly concurs with Ko in assuming that certain quantifiers such as universal quantifier *mei-ge ren* ‘everyone’ undergo topicalization, he still maintains that *weishenme* is merged low and has to move to take its scope. As such, when downward monotonic quantifiers fail to undergo topicalization, they would stay *in situ*. Hence, *weishenme* still needs to move across these quantifiers in order to take scope, creating intervention. In general, Tsai clearly realizes that quantifiers need to serve as interveners for the minimality theory to bear any substance. Consequently, there is no real way to incorporate Ko’s direct merge theory within a truly minimalist-based theory.

embedded interrogative and declarative questions need to be distinguished. The distinction is illustrated with the following schema (Ko 2005, 871).

- (91) a. [_{CP} *way/naze/weishenme* C _[+Q] [_{IP} XP YP...]] when the reason adverb modifies an matrix/embedded interrogative clause;
- b. [_{CP} *way/naze/weishenme* C _[-Q] [_{IP} XP YP...]] when the reason adverb modifies a declarative clause.

That is to say, in an embedded interrogative clause, the base merge position (position of Initial Merge) of the reason adverb is also the site where it checks off the interrogative clause feature [+Q] of the head C⁰. This is the case because the interrogative operator takes narrow scope locally, and the matrix clause is attached with a declarative force (and is specified with [-Q]). The situation gets reversed in an embedded declarative clause. Here the base merge position of the reason adverb (*i.e.* the declarative clause it modifies) cannot be the site for the feature checking-off. It is the matrix clause that is specified with a [+Q] feature, and the embedded declarative clause bears a [-Q] feature. To check off the interrogative feature, the reason adverb needs to undergo LF movement to the higher clause and enters an agreement relation with the matrix C⁰.

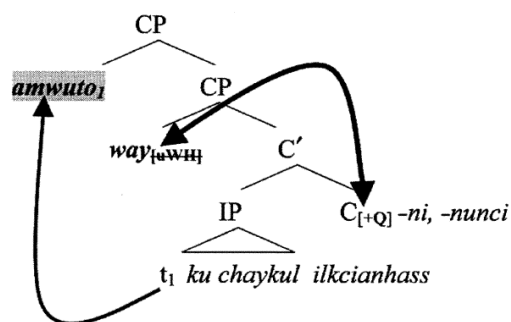
Because no movement is warranted in an embedded interrogative clause, Ko concludes that the lack of intervention follows from the same reason as in matrix interrogative clause. For (89), the quantifier *amwuto* may scramble over *way* after the External Merge of *way*. The resulting configuration is represented as follows, with proper feature checking and no movement:

(92) Scopal element precedes *why* (subject-scrambling)

[_{CP} *amwuto*₁ [_{CP} *way* [_{uWH}] C_[+Q] [_{IP} t₁...]]]

The scrambled quantifier does not induce intervention effects, because *way* will not cross it. Thus the absence of intervention effects in matrix and embedded interrogatives are accounted for in an uniform way, as the following figure shows (Ko 2005, 879).

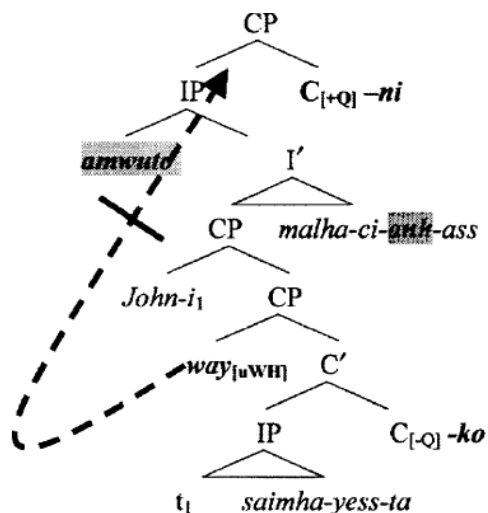
Figure 2 The Absence of Intervention in Way-interrogatives



In the declarative contexts in (90a) and (90b), however, *way* moves from its base merge position to the matrix [Spec, CP] and checks off the [+Q] feature in the matrix C⁰. *Amwuto* stands in between the initial merge site of *way* and the matrix [Spec, CP]. Citing minimality, Ko proposes that *amwuto* blocks LF movement. The configuration of (90a) is as follows:

(93) # [_{CP} *way*₁ [_{uWH}] C_[+Q] [_{IP} *amwuto* ... [_{CP} t₁ C_[-Q]]]]_{LF}

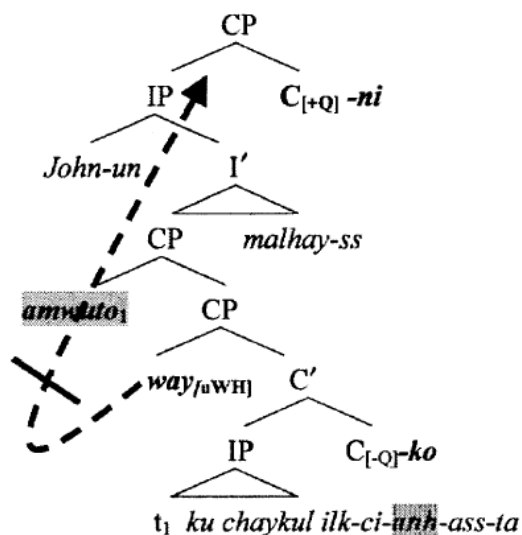
Figure 3 Intervention Effects in Embedded Declaratives with Matrix Scopal Elements



Similarly, the configuration of (90b) is as follows:

(94) $\#[_{CP} way_2 [uWH] C_{[+Q]} \dots [_{CP} amwuto_1 [_{CP} t_2 C_{[-Q]} [_{IP} t_1 \dots]]]]_{LF}$

Figure 4 Intervention Effects in Embedded Declaratives with Embedded Scopal Elements



For Chinese, Ko briefly suggests a treatment of the intervention patterns in matrix *why*-questions, with no mention of the Chinese phenomena in embedded contexts. As mentioned

above, intervention in Chinese matrix *why*-questions is sensitive to the type of quantifier.⁴⁴ Ko observes this pattern and presents the following data to exemplify the contrast between quantifiers:⁴⁵

⁴⁴ Ko follows Tsai in assuming that *wh*-arguments are subject to unselective binding, thus accounting for their lack of strong intervention.

⁴⁵ Ko's data are of dubious nature, since a *dou*-quantified sentence may not involve real topicalization. As has been discussed in the previous literature (Cheng 1995; Xiang 2008), *dou* is a maximality operator that binds a subject quantifier and causes it to reconstruct its scope at the *dou* position. This is, among other things, substantiated by the fact that we get the same reading regardless of whether the universal quantifier precedes or follows *weishenme*:

- (i) a. *Mei-ge ren weishenme dou hui-qu?*
 Every-CLF person why DOU will-go
 'Why everyone will go?'
 b. *Weishenme mei-ge ren dou hui-qu?*
 Why every-CLF person DOU will-go
 'Why everyone will go?'

This is not the case if there is no *dou* binding a quantifier. For example, the following two orderings give rise to distinct readings:

- (ii) a. *Daduoshu ren weishenme hui-qu?*
 Most person why will-go
 'For most people, why they will go?'
 b. *Weishenme daduoshu ren hui-qu?*
 Why most person will-go
 'Why is it the case that most people will go?'

Furthermore, *dou*-sentences differ from quantificational sentences without *dou* in forcing a collective reading and disallowing a pair-list reading:

- (iii) a. *Ta xiang zhidao mei-ge ren weishenme hui-qu.*
 He want.to know every-CLF person why will-go
 'He want to know for everyone, why (s)he will go.'
 b. *Ta xiang zhidao mei-ge ren weishenme dou hui-qu.*
 He want.to know every-CLF why DOU will-go
 'He wants to know why it is the case that everyone will go.'

Finally, *dou*-binding is sensitive to quantity (it binds *many*, but not *a few*). In this thesis, we are concerned with the distinction among quantifiers based on monotonicity.

(95) a. Universal Quantifier

{*Mei-ge ren/mei-ge xiaohair*} *weishenme dou hui qu?*

Everyone/every child why DOU will go

‘Why will {everyone/every child} go?’

b. Negative Quantifier

#*Meiyou ren weishenme cizhi?*

No person why resign

#‘For nobody, why they resigned?’

Although quantifiers in Ko’s examples do not fall along the line of monotonicity, her solution for the split among quantifiers in Chinese *weishenme*-questions is still important and insightful. Ko suggests that the reason why Chinese has such split, whereas Japanese and Korean do not, can be attributed to a key parametric difference between Chinese on one hand and Japanese/Korean on the other hand. The following encapsulates Ko’s solution in a nutshell:

(96) Ko's topicalization solution:

- (i) If *Why* is externally merged at [Spec, CP], elements may precede *why* by being base-generated or by undergoing A'-movement.
- (ii) Korean can undergo A'-scrambling or A'-topicalization quite freely.
- (iii) Chinese has more word order changing operations than Korean.
- (iv) Long-distance scrambling is disallowed in Chinese.
- (v) Chinese does allow long-distance topicalization over C, but only for certain limited items.

To recap, Ko argues that the A'-scrambling strategy available to Japanese and Korean is not an option for Chinese. However, Chinese alternatively employs a restricted long-distance topicalization strategy, which can get quantifiers across C^0 . Specifically, she assumes quantifiers that are intervention-free are those that can undergo A'-topicalization. The canonical topicalizable NPs are definite NPs, Ko shows that universal quantifiers pattern with definite NPs, presented below:

(97) *Lisi, Zhangsan shuo [(ta) hen congming]*.

Lisi Zhangsan said (she) MOD smart

'Lisi, Zhangsan said that (she) is very smart.'

(98) *Mei-ge ren, Zhangsan shuo [(ta) dou hui qu]*.

Every-CLF person Zhangsan say (he) DOU FUT go

'For everyone, Zhangsan says that (she) will go.'

These same set of SBEs precede *weishenme* in *why*-questions. As a result, definite NPs can precede *weishenme*, parallel to universal quantifiers.

- (99) *Lisi weishenme kan-le na-ben shu?*
 Lisi why read-PRF DEM-CLF book
 ‘Why did Lisi read that book?’

On the other hand, negative quantifiers are argued to resist long-distance topicalization, evidenced by the following:

- (100) #*Meiyou ren, Zhangsan shuo [(ta/tamen) hen congming]*
 Nobody, Zhangsan said (she/they) very smart
 ‘For nobody, Zhangsan said that she is very smart.’

Importantly, they are the same set of interveners in Chinese that induce intervention for *weishenme*-questions. Based on these data, Ko draws the generalization that the ability to induce or violate intervention is based on a quantifier’s potential to undergo long-distance topicalization. This observation is formulated as the following constraint:

- (101) Topicalization Constraint (Ko 2005, 885)
An XP may precede weishenme only when it may undergo A'-topicalization over [Spec, CP].

The decreasing/increasing monotone asymmetry follows naturally as a consequence of whether they belong to a legal structure that the grammar can generate or not. Ko’s core ideas regarding the high attachment analysis of *why* and the topicalization constraint are taken up in my account. However, Ko’s theory still has both empirical and conceptual insufficiencies in its application to the rich intervention patterns in Chinese.

The *why*-question in example (100) is unacceptable. This seems rather mysterious if we compare this sentence with the Korean example (90). In the Korean example, pace Ko, the intervention is caused by an intervener in the matrix clause that stands in the way along the movement route of the reason adverb while it takes its matrix scope. No such intervener can be identified in the Chinese sentence below. Nevertheless, the sentence is still not possible.⁴⁶

(102) ???Ni *pan-zhe* *ta weishenme jia-gei ni?*

You desire-STATIVE her why be.married.to-give you

‘Why_i do you desire that [she would be married to you t_i]?’

Secondly, some of the issues for a more traditional minimality approach (such as that of Yang 2012) are still unanswered given a high attachment analysis. In the previous subsection, it is noted that although monotone increasing quantifiers such as *daduosu ren* ‘most of the people’ may felicitously precede *weishenme* in Chinese matrix *why*-questions, a question with *weishenme* preceding *daduosu ren* still receives substantially better judgments. Rather than a clear-cut dichotomy, the situation in Chinese is best characterized as being graded. There seems to exist little room within Ko’s theory to accommodate such gradability. Furthermore, the above-mentioned distinction between monotone decreasing quantifiers (e.g. *meiyouren* ‘nobody’, *budao san-ge re* ‘less than three people’) and monotone increasing quantifiers with a numeral component (e.g. *zhishao san-ge ren* ‘at least three people’) would be mysterious under Ko’s analysis. The latter type of quantifiers pass the same topicalization test employed by Ko to separate *meiyou ren* ‘nobody’ from *mei-ge ren* ‘every person’, as seen in (103).

⁴⁶ In Chapter 2, a similar constraint is discussed in English (see example (52) in chapter 2). The problem lies in the idiosyncrasies of the reason adverb *why* itself, since the same unacceptability disappears if *why* is replaced by *for what reason* (in the Chinese case, by *yinwei shenme* ‘for what’). It is also possible that this constraint is near universal, although languages might differ in what matrix verbs (irrealis or realis) block an embedded declarative reading.

- (103) {*San-ge ren/zhishao san-ge ren*}, *Zhangsan shuo (tamen) hen congming.*
 {Three-CLF person/at.least three-CLF person}, Zhangsan say (3SG-PLURAL) MOD be.smart
 ‘For (at least) three people, Zhangsan said that (they) are smart.’

This would suggest that these monotone increasing quantifiers are topicalizable. Hence it is unclear to Ko why the sentence such as the following is marginal (repeated from (68)).

- (104) ??{*San-ge ren/zhishao san-ge ren/chaoguo san-ge ren*} *weishenme cizhi?*
 {Three-CLF person/at.least three-CLF person/more.than three-CLF person} why resign
 ‘{For three people/at least three people/more than three people}, tell me why they resigned?’

Moreover, as shown in (105), these modified numeral quantifiers exhibit amelioration in certain embedded contexts (repeated below).

- (105) *Ta yijing zhidao {#meiyouren/#henshaoren/zhishao san-ge ren/san-ge ren}*
 He already know {no person/few person/at least three-CLF person/three-CLF person}
weishenme cizhi.
 why resign
 ‘He already knows for a group of {nobody/few/at least three people/three people}, why they resigned.’

Example (105) receives an embedded interrogative reading. Therefore, Ko predicts that the intervention pattern should be identical to that in matrix interrogative questions, contrary to fact.

Last but not least, Ko does not address the interpretational distinctness that exists between a *why*-question and a *for what reason*-question. The distinctions between these two types of

questions are detailed in Chapter 2 for Chinese. For example, in Chinese, the intervention-free examples (where *weishenme* precedes a downward GQ) allows for only one reading, as (106) illustrates:

(106) *Weishenme henshao ren cizhi?*

Why few person resign

‘Why did few, rather than many, people resign?’

#‘What is the reason that few people have for resigning?’

For (106), the following answer is possible:

(107) *Yinwei gongsi de huanjing haishi bijiao hao de.*

Because company REL environment still relatively be.good FOC

‘Because the atmosphere in the company is still relatively good.’

Note this cannot be the answer if one gets the reading ‘What is the reason that few people have for resigning?’ An answer to the latter reading must involve some actual reasons for resigning, instead of an explanation for why resignation DOES NOT take place.

In Japanese, Tomioka (2009) also notes that when *naze* ‘why’ is replaced by *dooyuu riyuu* ‘for what reason’, a different reading arises.⁴⁷

⁴⁷ Tomioka mentions that compared to *dooyuu riyuu* ‘for what reason’, it is harder for *naze* to receive the ‘for what reason’ reading. All the Japanese speakers I consulted claimed that this reading is not available to them. Pending more detailed elicitations, I take the consensus among naïve Japanese speakers to show that the *naze* ‘why’ vs. *doo yuu riyuu* ‘for what reason’ distinction is real. In other words, we have a Japanese equivalent to the *weishenme* vs. *yinwei shenme* distinction in Chinese. I thank Yoshi Asao, Natsuko Nakagawa and Sanae Tamura for providing their judgments.

(108) a.?? *Daremo doo yuu riyuu-de ko-nak-atta-no?*

Anyone for what reason-OBL come-NEG-PAST-Q

‘For what reason_i did no one come t_i?’

b. *Daremo naze ko-nak-atta-no?*

Anyone why come-NEG-PAST-Q

‘Why did no one come?’

As Ko’s theory of intervention effects is formulated in structural terms, she does not address what causes the *way*-questions to be compatible with one reading, but not another, even though both readings are equally available from a logical point of view. This is a severe problem for all syntactic approaches discussed so far, since these approaches implicitly or explicitly assume that both an *in situ wh*-phrase and a displaced (scrambled or topicalized) *wh*-element take the same scope position during interpretation, so that it is not interpretation but rather the possibility of taking certain structural positions that causes intervention.

In what follows, I spell out a theory that retains Ko’s key insights where the intervention in Chinese *why*-questions is best characterized by the ability for different scopal operators to be topicalized. My theory differs crucially from Ko’s in treating the topicalizability within the semantic component, rather than a syntactic phenomenon. Before bringing in my account, I review a related, and probably the only semantics-based account of intervention effects in *why*-questions to date. This theory, developed by Tomioka (2009), addresses Japanese and Korean *why*-questions.

3.4.3 Tomioka (2009)

Tomioka contributes two separate theories to the Japanese and Korean Intervention Effects. The

first one (Tomioka 2007) develops an information-structural account of the intervention in Japanese and Korean non-*why* questions. Therefore, it presents itself as an alternative to Beck (1996) as well as Beck & Kim (1997). In Tomioka (2007), the peculiarities with *why*-questions are left out. This lacuna is filled out in Tomioka (2009), which attempts a pragmatic explanation of how intervention is circumvented in Japanese and Korean *why*-questions. As far as I know, Tomioka is the first to present the original idea that *why*-question is interpretationally distinct from other *wh*-questions, and it is *why*'s peculiarities that leads to the intervention to be circumvented. In what follows, Tomioka (2007) is briefly summarized, with the purpose of illuminating to what extent Tomioka (2009) modifies on his previous non-*why* formulation. A more detailed discussion of the non-*why* theory is presented later in Section 3.5, when theories of non-*why* intervention are compared and the relevance of Chinese data is discussed.

In Tomioka (2007), it is suggested that potential interveners in Japanese and Korean *wh*-questions form a natural class. Specifically, the expressions that create intervention cannot be combined with the topic marker *wa* in Japanese, or *nun* in Korean. Hence, Tomioka calls this class of potential interveners Anti-Topic Items (ATI). In a *wh*-question, the non-*wh*-portion must be contained within the Ground (*i.e.* background) portion of a sentence. However, the pre-*wh* position is not suitable for the ground portion of a sentence. A feasible way to be backgrounded is for the pre-*wh* portion to be a topic, since topics tend to belong to the background (Kuno 1973). The anti-topicality of the quantifiers make this option unavailable, and this mismatch between information structure and its grammatical realization gives rise to intervention effects. Information structural factors also explain why a scrambled *wh*-element makes intervention disappear. The scrambling of a *wh*-element over an ATI creates a prosodic structure in which the ATI is confined within the prosodically reduced portion and becomes a part of a tail easily. The

special status of NPIs as the strongest interveners is hypothesized as the result of an additional constraint on NPIs that they must belong to the same phonological unit (an intermediate phrase) that contains negation, their licenser.

As I already mention in Chapter 2, Tomioka observes that the *why*-questions trigger different presuppositional patterns from other *wh*-questions, summarized in (109):

(109) Tomioka's observation:

In a why-question and only in a why-question, the proposition that corresponds to the non-wh portion of the question must be presupposed.

Tomioka draws attention to this fact, and shows the unique presupposition triggered by *why* to be most pronounced in downward entailing environments (repeated from example (19), chapter 2).⁴⁸

(110) a. *Which book did no one read?*

‘There is some book that no one read.’

#‘No one read books.’

b. *Why did no one come?*

‘No one came.’

Tomioka's contention is that *why*'s specific condition overrides the general information-structural partition in Japanese and Korean. According to the canonical partition constraint, the scrambled position that hosts a quantificational phrase fails to qualify as a part of Ground. Nevertheless, in a *why*-question, the quantificational phrase is part of the non-*why*

⁴⁸ Although Tomioka didn't explicitly discuss the presuppositional differences between *why* and *for what reason*, he discusses a reading difference that exists in the Japanese counterparts of the two *wh*-phrases, see the discussions in the previous footnote.

proposition that must be presupposed. Crucially, the notion of presupposition relates to that of Ground in that presupposed information is backgrounded in the information structure, and therefore falls within Ground. In this way, if *why*'s idiosyncrasies may override the more general ban for the scrambled position to be anti-topical, then it goes without problem that the quantificational phrase in a *why*-question is part of the ground and does not violate the information structure partition. Tomioka admits that the circumvention witnessed here is only a 'significant weakening' of intervention effects (Tomioka 2009, 265). Therefore, he predicts the fact that there still exist differences in judgments between a scrambled version and a non-scrambled version where the *why*-adverb precedes a quantificational phrase.

Tomioka's proposal is very similar to my proposal in that *why* requires the entire non-*why* portion of the sentence to be presupposed. Yet the two proposals are not exactly identical. It is true that the 'no-trace' view of *why* also entails that a proposition that does not contain *why* is presupposed (*i.e.* the proposition being modified). However, in my theory, it is not *the entire non-why portion of the sentence* that has to be part of the presupposed material. Instead, *why* simply requires a presupposed proposition which it takes as argument. Such view allows the existence of expressions preceding *why* such as the epistemic adverbs *daodi* 'in the hell' and *jiujing* 'frankly' as they stay above *why* and modify the speech act level. Tomioka's characterization incorrectly rules out these preceding adverbs.

As much as I share Tomioka's key assumptions about the idiosyncrasies of *why* as well as the conviction that the explanation for the intervention in *why*-questions is semantico-pragmatic by nature, I believe a more careful discussion of the nature of the pre-*why* materials are needed in order to better understand intervention effects in all three East Asian languages. As such, I will draw much from Tomioka's proposal while at the same time challenging some of his

assumptions. In the next subsection, I present a critical evaluation of Tomioka's proposal and sketch out a preliminary theory of the inter-language variation in *why*-intervention that follows straight from my evaluation.

3.4.4 Capturing the Crosslinguistic Variation

It is clear that Tomioka's information structural constraint (a Ground-Tail divide) alone is not enough to explain the patterns in the Chinese *why*-question. I have shown that the pre-*weishenme* position hosting a quantifier phrase in Chinese is a topic position. A topic should belong to the Ground in Tomioka's term. Recall that Tomioka proposes that a *wh*-question is informationally well-formed if the *wh*-phrase occupies the Tail and the other parts fall within the Ground. As the quantifier phrase in the Chinese *weishenme*-question falls within the Ground, only *weishenme* encodes discourse-new information and falls within the tail. As such, there is nothing wrong with the information structure such *weishenme*-question. Therefore, Tomioka has nothing to say about why the *weishenme*-question exhibits intervention for certain types of quantifiers. Obviously other mechanisms are needed to capture the data.

Furthermore, Tomioka seems to misunderstand Ko's argument about scrambling position and bases his theory on a false assumptions about the relative position between *why* (*naze/way*) and the quantificational element. According to Ko, a [*Quant* < *why*] order means that the quantifier is scrambled, since given the high merge position of *why*, the [*why* < *Quant*] is the default order. This differs completely from interactions involving non-*why* interrogative phrases. In those cases, the default order is [*Quant* < *wh*], and a [*wh* < *Quant*] order requires that a *wh*-element scrambles over the quantifier. Tomioka assumes that in both *why* and non-*why* cases, it is always the *wh*-element that gets scrambled whenever it precedes the quantifier. Based on this assumption, Tomioka proposes that the quantifier in a [*Quant* < *why*] order question is staying *in situ*. *In situ*

quantifiers are normally part of the Tail, but this constraint is somewhat overridden because *why* imposes a separate constraint requiring the rest of the question to be Ground. If we follow Ko's position where the quantifier in the [*Quant* < *why*] ordering is already scrambled, then Tomioka does believe that scrambled components independently fall within Ground.

The problem with this confusion in Tomioka's theory is quite subtle but probably still substantive: Tomioka reports that a *why*-question with a [*Quant* < *why*] order is still worse than the question with a [*Why* < *Quant*] order. If a pre-*why* quantifier is by default part of the tail, and *why* imposes another constraint forcing the quantifier to be in Ground, then we have two conflicting constraints in *why*-questions with a [*Quant* < *why*] order. This might explain the decrease in acceptability. On the other hand, if the pre-*why* quantifier is scrambled already, it is part of the Ground. The constraint imposed by *why* also requires the quantifier to be in the Ground. This time we have two convergent constraints. It would not be clear why such *why*-question is still judged poor. The answer to this issue might still be found in the information structure, yet Tomioka's theory in its current form fails to handle it completely.

Crucially, the role that scrambling plays in causing all the quantifier types in Japanese and Korean to circumvent intervention seems to elude Tomioka. In Japanese and Korean, the pre-*why*, scrambled quantifiers reconstruct their scope in the base positions, such that they are part of the propositional radical and scope below the speech act operator. Importantly, the ability for scrambled quantifiers to reconstruct their scope means that there won't be interpretational differences between a scrambled version and a non-scrambled version of *why*-questions. In both versions, the quantifiers invariably denote a GQ meaning. In this sense, *why*-questions with scrambled quantifiers differ from *why*-questions bearing a topic quantifier. A topic quantifier presumes that the quantifier should be able to denote individuals directly. While all quantifiers

are certainly able to express GQ meanings, not all quantifiers are equally good at denoting individuals. The difference between Chinese and Japanese/Korean intervention comes out of this: all Japanese and Korean scrambled quantifiers preceding *why* produce coherent interpretations, whereas, in Chinese, quantifiers that fail to denote individuals are ruled out when they occur as topics.

Before moving on, it is worth mentioning that this account explains the intervention data entirely in terms of scopal interaction. In previous literature, the positional constraints between *weishenme* and modal operators or quantificational adverbs are treated by crucially resorting to a scope isomorphism principle specific to Chinese (Huang 1982, Ernst 1994, Hagstrom 2006, Li 2007). According to this principle, the scopal positions of VP-level modifiers at LF purport to reflect their relative linear positions at overt syntax. A more formal formulation of this structural-meaning iconicity is given by Ernst (1994) in the following constraint:

(111) The Isomorphic Principle

If an operator A has scope over B at SS, then A has scope over B at LF.

In this way, since modals such as *hui* cannot take scope above *weishenme* but has to scope under it, the structural position of [*hui* < *weishenme*] is disallowed because it imposes on an LF scopal position that is not possible. However, I argue that resorting to isomorphism is both problematic and unnecessary. First note that not all scopal operators abide by this constraint. For example, the interaction between a universal quantifier and an existential quantifier in Chinese observes the same scopal ambiguities as witnessed in other languages such as English. The following sentence in Chinese has two readings:

(112) *Mei-ge ren dou mai-le yi-ben shu.*

Every-CLF person DOU buy-PRF one-CLF book

‘There exists a book, such that everyone bought that book.’

‘For everyone, there is a book such that he or she bought it.’

Given this, Ernst modifies the isomorphism constraint so that it targets the permutation of VP-level modifiers. Under the assumption that *weishenme* is a VP-adverb, and modal verbs are modifiers of the matrix VP, it follows that the linear configuration of these two modifiers reflects their relative scope ordering. The same can be said of the permutation of *weishenme* and quantificational adverbs.

In my theory, isomorphism stipulations are not necessary. Ernst’s constraint in (109) is subsumed by the simple assumption that *weishenme* is a proposition-level modifier that forces all VP modifiers to fall below the scope of *weishenme*. Together with the absence of scrambling in Chinese, the two independently motivated constraints interact to make sure that all VP modifiers must remain in a structurally lower position than *weishenme*.

Also, presupposition alone is not sufficient to account for all the intervention data in *why*-questions. Tomioka fails to explain what causes the difference between embedded interrogative questions and embedded declarative questions. A simple information structural explanation seems to be off the mark. My proposal is that the syntactic and semantic properties of *why* derive the presuppositional property (it follows from more primary properties). This includes scope position and IF attachment. This subsumes the analysis of Tomioka and offers a semantic explanation of the data in Chinese.

Before we finish this section, we return to the data of embedded interrogatives and embedded declaratives discussed in Ko (2005). So far our theory has not applied to this set of data. As Ko

points out, a quantificational element in the matrix clause creates intervention for an embedded *why*-clause, such as in (113).

- (113) *Ni mei/ye/zhi juede/zhidao/renwei/xiangxin [Lisi weishenme cizhi]?*
 You neg/also/only feel/know/think/believe [Lisi why resign]
 ‘Why_i do you not/also/only believe that Lisi resigned t_i?’

However, given my semantic formulation of *why* and the proposal that *why* cannot occur in embedded structures at all, I believe that the unacceptability of (113) is simply a result of *why*-questions’ root constraint.⁴⁹ In Chapter 2, I show that a parenthetical reading rescues the following sentences when the matrix predicate is a light attitude word:

- (114) *Ni juede/zhidao/renwei/xiangxin [Lisi weishenme cizhi]?*
 You feel/know/think/believe [Lisi why resign]
 ‘Why_i did Lisi resign, do you believe/feel/know/think?’

In lieu of identifying how quantificational adverbs cause intervention, we should look at how they make an original parenthetical reading unavailable. The reason, I believe, is simple: similar to the cases in which matrix predicates unsuitable for a parenthetical supplement make the ‘embedded’ *why*-question worse, in the presence of quantificational adverbs a matrix predicate also becomes less conducive to a parenthetical reading.

The other type of embedded declarative involving an embedded quantifier preceding the *in situ why* can also be explained in a straightforward way:

⁴⁹ Note that Ko (2005) allows for *why* to occur in embedded contexts. In this aspect, her syntactic analysis of *why* and my semantic analysis of *why* are critically different.

(115) *Ni juede meiyouren/zhiyou Lisi weishenme cizhi?*

You feel no person/only Lisi why resign

‘Why nobody/only Lisi resigns, do you feel?’

Although the parenthetical expression itself is good, the *why*-clause itself cannot be interpreted. As a matrix *why*-clause on its own, it causes the same interpretability problem as we have discussed for monotonic decreasing quantifiers or focus-sensitive expressions. Unsurprisingly (and Ko does not notice), when the embedded clause bears a monotone increasing quantifier, the intervention disappears:

(116) *Ni juede daduoshu ren weishenme cizhi?*

You feel most person why resign

‘Why most people resigns, do you feel?’

3.5 Intervention Effects in Non-*why* Questions

3.5.1 Data

In the last part of this chapter, I turn to intervention effects in non-*why* questions. My major claim is that intervention effects in non-*why* questions are different from those in *why*-questions. Beck (2006) has argued that the non-*why* intervention is a type of interpretability. In my theory, the *why*-intervention is also characterized as interpretational in nature. However, the two intervention effects do not lead to unacceptability in the same manner. Interpretation failure arises in non-*why* questions because *wh*-phrases in general are not compatible with other operators. In *why*-questions, interpretation failure is a result of the incompatibility between the *why*-adverb and other operators. Moreover, I suggest that semantics alone probably does not

suffice to account for the crosslinguistic variation in non-why question's intervention. In the following I introduce the intervention data in Chinese non-*why* questions, and argue for a synthesis of semantic and pragmatic mechanisms in accounting for the data.

In Chinese, *in situ wh*-questions that include a quantificational element do not cause intervention effects as strongly as *why*-questions. Moreover, there is no divide along the line of the monotonicity of quantifiers. As (117) illustrates, both the quantificational phrase *duoshu ren* 'most people' and *henshao ren* 'few people' may precede an *in situ wh*-phrase:⁵⁰

- (117) a. ?*Daduo*shu ren jie-guo nei-ben shu?
 Most person borrow-EXP which-CLF book
 'Which book has most people borrowed?'
 b. ?*Henshao* ren jie-guo nei-ben shu?
 Few person borrow-EXP which-CLF book
 'Which book has few people borrowed?'

In contrast to quantifiers, focus-sensitive expressions induce intervention effects in Chinese non-*why* questions. This is shown in (118). When the subject interveners are associated with focus, the *wh*-arguments fail to stay *in situ*.

- (118) #*Zhiyou* Lisi jie-guo nei-ben shu?
 Only Lisi borrow-EXP which-CLF book
 'Which book has only Lisi borrowed?'

Although quantifiers in general receive coherent interpretations, bare numerals and modified

⁵⁰ The examples are chosen to avoid the low acceptability caused by non-D-linked items. Here I am trying to make sure that the difficulty in judgments caused by non-D-linked items is not to be conflated with intervention effects induced by *weishenme*.

numerals still induce low acceptability. In the absence of experimental results, it is hard to put a measure on how native speakers judge a *wh*-question with numerals. The speakers I consulted rated them either as bad as questions with focus-sensitive expressions or a little bit better. What is different from the intervention patterns in *why*-questions is that the monotonicity of the numeral quantifiers doesn't matter here. Intervention arises for both monotone decreasing numerals and monotone increasing ones. For instance, both increasing and decreasing numerals induce the same level of unacceptability in the following:

(119) ??{*San-ge ren/budao san-ge ren/zuiduo san-ge ren*}

{Three-CLF person/less than three-CLF person/at most three-CLF person}

jie-guo nei-ben shu?

borrow-EXP which-CLF book

'Which book has (less than/at most) three people borrowed?'

Finally, when quantifiers or focus-sensitive expressions are topicalized over the *wh*-phrase, all questions become totally acceptable. That is, topicalized versions are significantly ameliorated compared to non-topicalized ones.

(120) a. *Nei-ben shu zhiyou Lisi jie-guo?*

Which-CLF book only Lisi borrow-EXP

‘Which book has only Lisi borrowed?’

b. *Nei-ben shu henshao ren jie-guo?*

Which-CLF book few person borrow-EXP

‘Which book has few borrowed?’

Crosslinguistically, the picture is even more complicated. In the above, we already see that in Korean and Japanese, both quantifiers and focus expressions cause *in situ wh*-questions to be unacceptable. For the rest of this section, I first review previous literature on intervention effects in non-*why* questions, focusing on those parts of immediate relevance to Chinese. Afterwards, I propose a tentative semantic theory that explains the Chinese intervention pattern, with a short discussion of Japanese and Korean.

3.5.2 Previous Approaches

I start by briefly recapitulating the barrier-based theory of intervention. Beck (1996) and Beck & Kim (1997) assume with Chomsky (1995) that the interrogative interpretation is licensed via Specifier-Head Agreement. Namely, the uninterpretable [*uWh*] feature of a *wh*-phrase has to check the [+Q] feature hosted by a (overt or covert) question morpheme in the head C^0 position. Drawing upon Huang (1982), this process is assumed to be carried out at either overt syntax, or at LF. Crucially, LF movement is subject to the following conditions.

(121) Quantifier-Induced Barrier (QUIB)

The first node that dominates a quantifier, its restriction, and its nuclear scope is a quantifier-induced barrier.

(122) Minimal Quantified Structure Constraint (MQSC)

If an LF trace b is dominated by a quantifier-induced barrier, a , then the binder of b must be dominated by a .

Beck argues that MQSC can be applied to intervention effects in German multiple *wh*-constructions, illustrated in (123):

(123) a. ??*Wen hat niemand wo gesehen?*

Whom has nobody where seen

‘Where did nobody see whom?’

b. ??*Wer hat jede Aufgabe wann gelöst?*

Who has every problem when solved

‘Who solved every problem when?’

(123) exhibits a linear precedence constraint, where the *in-situ wh*-phrase cannot be c-commanded by a negation or a quantifier (Beck 1996, 1). Beck assumes that the *in situ wh*-word (*wo* in 123a, *wann* in 123b) has to move to [Spec, CP] at LF, where feature checking takes place. This would make it scope over a QUIB, which is ruled out due to the restrictions of MQSC (because as a binder of an LF trace, the *wh*-word dominates a quantifier-induced barrier rather than being dominated by it).

Beck and Kim (1997) argues that intervention effects in Japanese and Korean single *wh*-questions can be dealt with in an analogous way. (124) shows an example of the intervention in a single *wh*-question (where the *wh*-phrase stays *in situ*).

(124) #*Amwuto mwues-ul ilk-ci-anh-ass-ni?*

Anyone what-ACC read-CI-not-PST-Q

‘What did nobody read?’

Crucially, the *in situ wh*-word is argued to move to the same scope position as the *in situ wh*-word in German multiple questions, hence also crossing the QUIB.

(125) {*?Nwukwunka-ka/?nwukwuna-ka*} *mwues-ul ilk-ess-ni?*

Someone-NOM/everyone-NOM what-ACC read-PST-Q

‘What did someone/everyone read?’

Futhermore, Beck and Kim (1997) notices that intervention disappears when the Korean *in situ wh*-phrase scrambles across the quantifier, such as the following:

(126) a. *Mwues-ul amwuto ilk-ci-anh-ass-ni?*

‘What did no one read?’

b. *Mwues-ul { nwukwunka-ka/ nwukwuna-ka } ilk-ess-ni?*

‘What did {someone/everyone} read?’

German also allows scrambling. When the *in situ wh*-phrase in German multiple *wh*-questions scramble across the quantifier, intervention effects are similarly circumvented:

(127) a.# *Wer hat niemanden wo angetroffen?*

Who has nobody where met

‘Who didn’t meet anybody where?’

b. *Wer hat wo niemanden angetroffen?*

Who has where nobody met

‘Who didn’t meet anybody where?’

According to Beck & Kim, this is exactly what they predict, given that in a scrambled sentence, no violation of MQSC occurs. Take the single *wh*-question in Korean for example, the LF structures of (126a) and (126b) are represented as follows in (128):

(128) For a. #[...Q *mwues amwuto/pakkey* trace...]_{LF}

For b. [...Q *mwues* trace *amwuto/pakkey*...]_{LF}

In (128b), the LF-trace of the *wh*-phrase is outside of the Negation Induced Barrier, and thus, no intervention arises.

Beck (2006) replaces Beck (1996) and Beck & Kim (1997) by presenting a semantic explanation of intervention effects. As research on intervention effects has advanced, researchers have found that intervention effects as represented by the German and Korean data are crosslinguistically robust. This fact convinces Beck that the explanation needs to be sought in the interpretational component. Furthermore, her semantic account is able to capture a wider variety of empirical data, including the intervention induced by focus-sensitive expressions and in alternative questions, aside from quantifier-induced intervention.⁵¹

⁵¹ The semantic analysis of the intervention induced in alternative questions is of significance in my study of the Chinese alternative question type A-not-A questions, and this part of Beck’s approach will be taken up in Chapter 4.

Focus-induced intervention effects are illustrated by the Korean contrast in (129). (129) is unacceptable, because the *in situ wh*-phrase *nuku* ‘who’ in Korean is preceded by the focus-sensitive constituent *minsu-man* ‘only Minsu’. As *minsu-man* moves to the right of the *in situ wh*-phrase, the *wh*-question becomes acceptable.

(129) a. #*Minsu-man nuku-lûl po-ss-ni?*

Minsu-only who-ACC see-PST-Q

‘Who did only Minsu see?’

b. *Nuku-lûl Minsu-man po-ass-ni?*

Who-ACC Minsu-only see-PST-Q

‘Who did only Minsu see?’

Beck’s basic intuition about the unacceptability in questions such as (129a) is that the question is interpreted in such a way that both focus and *wh*-phrase make use of the same interpretational mechanism. Beck argues that *wh*-phrases play the same role as focused phrases, introducing alternatives into the computation. They differ in that the focus phrase further involves an ordinary semantic value contributed by its focus operator. *Wh*-phrases differ from non-interrogative focus phrases in that they have no ordinary semantic values (Karttunen 1977 for question interpretation, Rooth 1992 for focus interpretation). An intervention effect occurs whenever a focus-sensitive operator other than the question operator evaluates a constituent containing a *wh*-phrase. When an *in situ wh*-phrase is c-commanded by a focus operator, the focus operator will reset the focus semantic value of both the *wh*-phrase and the focus phrase to the ordinary semantic value. However, the Q-Op associated with the question is the only binder for the *in situ wh*-phrase, serving as a distinguished variable which uses just the focus semantic value. The focus effect occurs when the intervening focus operator wrongly resets the focus

semantic value of the *wh*-phrase to the ordinary semantic value so that the Q-Op has nothing to license, leading to nonconvergence. Within the phrase ϕ , the semantic values of the focus XP and the *wh*-phrase are not compatible – in order for the focus sensitive operator to evaluate ϕ , the ordinary semantic values are needed for the focus phrase. But the *wh*-phrase does not have such values. It follows that the cross-linguistic *in situ wh*-construals can be subsumed into the focus effect without resorting to any movement mechanism (Beck 2006, due to Kim 2002a).

(130) $\#[_{CP} Q_i [_{FocP} [\dots wh\text{-phrase}_i \dots]]]$

A focused phrase (*e.g. only-NP*) may not intervene between a *wh*-phrase and its licensing complementizer (Beck 2006, 12), as the following illustrates:

(131) $[Q \dots [Op [_{\phi} \dots XP_F \dots wh \dots]]]$

Q: question operator; Op: focus sensitive operator

Hence, in the system of compositional interpretation that Beck suggests, a *wh*-phrase interpreted within the scope of a focusing operator leads to uninterpretability of the structure as a whole. The interpretation component of the grammar derives uninterpretability, hence ungrammaticality of the intervention data.

The major empirical shortcoming of Beck's approaches is the lack of an explanation for the FOC vs. QUANT divide. In section 3.5.1, we already mention the following data, where focus-sensitive expressions cause a *wh*-question to be completely unacceptable, but quantifiers do not have the same effect:

(132) a. *Henshao ren jie-guo nei-ben shu?*

Few person borrow-EXP which-CLF book

‘Which book have few people borrowed?’

b. *#Zhiyou Lisi jie-guo nei-ben shu?*

Only Lisi borrow-EXP which-CLF book

‘Which book has only Lisi borrowed?’

In Japanese and Korean, the judgments for *wh*-questions also form a cline. As Tomioka (2007) reports in an informal survey, focus-sensitive expressions and monotone decreasing quantifiers are still stronger interveners than monotone increasing quantifiers.

In Beck’s syntactic approach, all intervention effects follow from the LF movement. Therefore, to account for the absence of intervention, one has to posit some alternative licensing mechanisms such that LF movement does not occur. This kind of reanalysis is not ideal in handling the gradience in the judgment patterns. Presumably, Beck’s (2006) semantic approach might be flexible enough to address this gradience. The choice between licensing via staying *in situ* and via LF movement is contingent upon some input conditions, and such conditions will have to crucially rely on the semantic features of the focus-sensitive expressions and the quantifiers. Since Beck (2006) crucially explores the semantics of focus-sensitive expressions, and leaves the room open for the difference in the semantics between focus operators and quantifiers, it is possible that the right input conditions can be found. However, as Beck does not explicitly touch upon this issue in her paper, we are left wondering what such modifications would be like.

Yang (2012) presents a minimalist theory that directly addresses the focus vs. quantifier divide. For Yang, this divide suggests that intervention effects cannot be handled in a uniform

way, and the two types need to be licensed by separate syntactic effects. Specifically, for the focus-sensitive *wh*-questions, Yang postulates a “one-slot-per-Comp” principle, which amounts to a competition principle in which no more than one operator may occupy a single complementizer position.

Here Yang adopts the Rizzi-style cartographic approach, assuming a rich left periphery as illustrated in the following (Yang 2012, 72):

(133) Force Top* Int Top* Foc Mod* Top* Fin [IP ...]

Yang assumes that focus-sensitive expressions are bound by a focus operator, which moves to FocP in the left periphery of CP. Furthermore, he claims that the Q-Op, the interrogative operator that binds *in situ wh*-expressions, also takes scope at FocP, given *wh*-expressions typically involve focus (Rooth 1992).⁵²

For Yang, when two operators compete for the same slot, the competition results in

⁵² Even within the cartographic community, this claim is not without controversies. For example, Tsai (2008) draws on distributional data in Chinese and suggests that *weishenme* and *zenme* ‘(causal) how’ occupy the head of InterrogativeP (IntP) position, which is higher than FocusP (FocP). Crucially, Tsai adopts the same cartographic view of left periphery as Yang and assumes the same configuration for the left periphery projections. Yang doesn’t cite Tsai (2008). Therefore, Yang has to explain why these positional differences among Chinese *wh*-adjuncts do not pose a problem for his argument for a universal FocP position for Q-Op.

Yang cites the Cantonese sentence-final particle data (Law 2002) as evidence that Q-Op and F-Op compete for the same position in the left periphery. In Cantonese, focus can be expressed by three sentence-final particles, *laa* ‘emphatic inchoative’, *zaa* ‘only’, and *tim* ‘also, even’. Law argues that these particles exhibit a syntactic hierarchy in the form of *laa* > *zaa* > *tim*. Among them, only *zaa* is subject to intervention effect, as shown in (i).

(i) a. *Bingo faan zo lai laa?*
 Who return ASP come SFP
 ‘Who has come back?’
 b. *?? Nei sik zo matje zaa?*
 You eat ASO what SFP
 c. *Nei sik zo matje tim?*
 You eat ASP what SFP
 ‘What else did you eat?’

However, it is worth noting that, of the three particles, only *zaa* is focus-sensitive, ergo a semantic theory of focus-induced intervention effects in Chinese would similarly predict the pattern here. Therefore the Cantonese data is consistent with both a cartographic approach and a non-cartographic, but does not give the syntactic approach an empirical advantage.

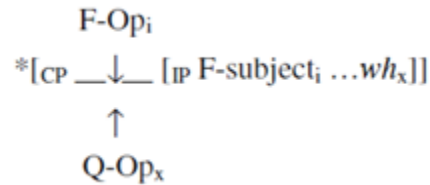
ungrammaticality. In Chinese, Q-Op is base-generated at FocP and unselectively binds the *in situ* *wh*-expression. It competes with F-Op, which moves to the CP head position to bind the focus-sensitive expression. In Japanese and Korean, *wh*-element is not unselectively bound, but the Q-Op still occupies the FocP via feature movement. As both Q-Op and F-Op move to the same head of CP position, the derivation crashes again. This captures why focus-induced intervention occurs for Chinese and Japanese/Korean alike, as the following diagram illustrates.⁵³

⁵³ Yang believes that the Q-Op in *weishenme* also undergoes feature movement, therefore his theory would derive the focus intervention effects in *why*-questions in the same manner. Nevertheless, no matter what mechanism Yang endorses for the *why*-adjunct to take scope, he seems to make a wrong prediction about the circumvention of intervention in Japanese and Korean *why*-questions. Assuming *why* is initially merged low and afterwards undergoes feature movement, Yang would falsely predict that the relativized minimality constraint rules out the quantificational [scope-taking element < *why*] possibility in Japanese and Korean. In this way, it has the same problem as Tsai's theory. For the focus effect, since both the F-Op and Q-Op will be moved to the same head position, competition effect will also be predicted for the focus [scope-taking element < *why*] possibility in Japanese and Korean (the focused phrase is licensed in its base position, so that the F-Op still merges at the CP head position), contrary to facts. For example, Yang would not predict that (ib) is different from (ia) (Tomioka 2009):

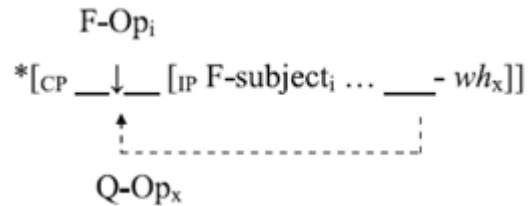
- (i) a. ?#*Ken-sika nani-o yom-ana-katta-no?*
 Ken-except what-ACC read-neg-PST-Q
 b. *Ken-sika naze ko-nak-atta-no?*
 Ken-except why come-neg-PST-Q
 'Why did no one but Ken come?'

Imagine Yang would adopt Ko's high initial merge position, the problem with the quantifier effect may be solved. However, the same problematic prediction holds for the focus effect, given the competition effect is formulated in a way that remains ignorant about whether the Q-Op is merged *in situ* or moved.

(134) a. Chinese type, base-generated Q-Op



b. Japanese/Korean, moved Q-Op



Yang further assumes that quantifiers take scope within IP (Yang 2012, 62), hence the Q-Op that unselectively binds the *wh*-phrase does not compete with the quantificational operator.

In sum, Yang's explanation of focus-induced intervention effects is similar in spirit to Beck's account, except that Yang's theory is formulated entirely syntactically. To explain away the focus vs. quantifier divide, Yang resorts to two different merge positions for the focus and quantificational operators.

However, this approach still simplifies the judgment patterns. It is unclear how the dichotomy approach Yang adopts is supposed to predict that intervention effects disappear when the ordering between the *in situ wh*-phrase and the intervener is reversed. In Chinese, when topicalized *wh*-phrase precedes a quantifier or focus, the sentence improves. Similarly, scrambled *wh*-questions in Japanese and Korean are significantly better than their non-scrambled counterparts. The Chinese examples are repeated from (120) in (135):

(135) a. *Nei-ben shu zhiyou Lisi jie-guo?*

Which-CLF book only Lisi borrow-EXP

‘Which book has only Lisi borrowed?’

b. *Nei-ben shu henshao ren jie-guo?*

Which-CLF book few person borrow-EXP

‘Which book has few borrowed?’

Even as *which book* in Chinese undergoes topicalization at surface syntax, its trace must still be licensed by a Q-Op taking scope at the same slot as the F-Op at the left periphery, falsely predicting that competition should take place.⁵⁴

Furthermore, we have seen in the previous section that quantifiers do not form a monolithic whole. Modified numerals and bare numerals still induce infelicity, repeated in (136):

(136) ??{*San-ge ren/budao san-ge ren/zuiduo san-ge ren*}

{Three-CLF person/less than three-CLF person/at most three-CLF person}

jie-guo nei-ben shu?

borrow-EXP which-CLF book

‘Which book have (less than/at most) three people borrowed?’

It seems unlikely to assume that numeral quantifiers merge differently from other quantifiers at LF. Hence, a purely structural account of the quantifier effect has nothing to say about the unexpected decrease in acceptability witnessed here. Conceptually, it is also missing an important generalization to separate quantifiers from focus, given that both clearly share the focus-marking property as well as the interpretations of introducing alternatives. Ideally, one

⁵⁴ Note that Beck (2006) is able to address this.

would want a theory that addresses the focus-quantifier divide to look into the degree to which the two types of scopal elements resemble and differ from each other.

3.5.3 My Theory

I recast Beck's (2006) theory in pragmatic terms, capturing her main intuition that focus conflicts strongly with question in expressing alternative semantics, meanwhile leaving enough leeway to allow for the finer distinction between focus and quantifiers.

In a nutshell, my hypothesis is that, in Chinese, quantifiers in subject position need not express sentential focus. When subject quantifiers are not focused, they impose a particular information structural requirement on the sentence, requiring that the quantificational information expressed by the quantifiers belong to neither presupposed mutual knowledge nor new information. This unusual information structural configuration is possible, because of certain mutual inferability that can be reasonably expected of interlocutors.⁵⁵

Let's review the key data first. First, it is worth noting that despite its mild acceptability, a quantified sentence is significantly worse when a downward quantifier serves as the topic, compared to when the downward quantifier appears as part of the comment structure. This contrast is illustrated by (137a-b).

⁵⁵ This amounts to saying that non-marked quantifier subjects in Chinese are compatible with pragmatic accommodation such that they are able to express backgrounded information even when the information is not prior known to be in the mutual common ground. In contrast, the anti-topical items (including quantificational phrases) in Japanese and Korean is harder for such inference, but again we should take caution to note that they are not utterly impossible. Quite to the contrary, converging interpretations have been readily claimed by many native speakers.

(137) a. ??*Meiyou ren /Henshao ren jie-guo nei-ben shu?*

No person/Few person borrow-EXP which-CLF book

‘Which book has nobody/few people borrowed?’

b. *Nei-ben shu meiyou ren/henshao ren jie-guo?*

Which-CLF book no person /few person borrow-EXP

‘Which book has nobody/few people borrowed?’

Second, bare numerals and modified numerals induce infelicity when the *wh*-phrases are arguments. (138) receives slightly higher acceptability than (139) with a focus-sensitive expressions such as *only*-NP. In other words, it is a spurious generalization to state that the acceptability contrast is between quantifiers on one hand and focus operators on another.

(138) #{*San-ge ren/budao san-ge ren/zuiduo san-ge ren*}

{Three-CLF person/less than three-CLF person/at most three-CLF person}

jie-guo nei-ben shu?

borrow-EXP which-CLF book

‘Which book have (less than/at most) three people borrowed?’

(139) #*Zhiyou Lisi jie-guo nei-ben shu?*

Only Lisi borrow-EXP which-CLF book

‘Which book has only Lisi borrowed?’

Recall that in Japanese (Tomioka 2007), downward quantifiers such as *few people* are stronger interveners than upward quantifiers such as *someone* or *many people*. Furthermore, focus-sensitive expressions such as *only*-NP are stronger interveners than downward quantifiers. Finally, downward quantifiers and focus-sensitive expressions show the least degree of

improvement among the potential interveners in embedded contexts, whereas upward quantifiers are significantly ameliorated under embedded contexts. Comparing Tomioka's Japanese intervention data with my data in (137-139), we can see that my findings in Chinese are consistent with the findings in Tomioka's paper.

I argue that the aforementioned focus-downward-upward cline has to do with information structure configurations. As in Japanese, the topic-comment structure in Chinese carves up the information structure in a specific way.

When a *wh*-phrase is fronted (*i.e.* the *wh*-topic), it encodes the new information and the comment expresses what is already known prior to the utterance. In other words, given an information state in which the interlocutors already know that certain properties are stored in the form of predication, a *wh*-topic corresponds to the request to pinpoint the specific referent in the discourse universe that has the said properties stored.

This configuration induces particular contextualizations. In the case where decreasing quantifiers appear in the comment structure, such as (140):

(140) *Nei-ben shu {meiyou ren/henshao ren} jie-guo?*

Which-CLF book {no person/few person} borrow-EXP

'Which book has {nobody/few} borrowed?'

Since the quantifier occurs in the comment, the configuration favors the context in which there is explicit evidence that nobody/few people borrowed a certain book, and the *wh*-topic elicits new information: Given this preferred reading, the *wh*-question solicits the identity of that book from an alternative set.

In (141), the quantifier occupies a canonical, pre-verbal sentential focus position. As discussed above already, in this position the downward quantifier c-commands the *wh*-phrase

and must provide new information.

(141) *Henshao ren jie-guo zhei-ben shu.*

Few person borrow-EXP DEM-CLF book

‘Few people have borrowed this book.’

Following Roothian semantics, we then get the standard focus interpretation of this sentence. We take the downward quantifier in the focus position to offer the informative content of the proposition. Given two set of individuals, the quantifier *few* denotes how the two sets interact in the actual world. This informative content is expressed against a background of possibilities: the way information structure is organized elicits the inference that for a given property (*i.e.* borrowing a particular book) and a particular set of salient individuals, the intersection of these two sets is open to possibilities. These possibilities are provided by the overt alternatives that express the epistemic state prior to the expression of focused information. To be more specific, we can characterize these possibilities in terms of a partition of the set of individuals, such that it is within mutual knowledge that one book exists, and an unknown number of people have that book.

(142) *X people borrowed book A.*

X ranges over a set of quantificational phrases. This leads to the following alternative propositions:

(143) {*Few people borrowed book A; Some people borrowed book A; ...*}

The possibilities are thus understood as statements about the actual world. That is, each of the alternative propositions could be a candidate statement, and one of the alternatives is a true

description of the state of affairs in the actual world.

In the above, I assume that the identity of the book is uniquely known. Yet this condition itself can be relaxed. When the comment position denotes an alternative set, as in an *in situ* question:

(144) {*Meiyou ren/henshao ren*} *jie-guo nei-ben shu?*

{No person/Few person} borrow-EXP which-CLF book

‘Which book has nobody/few borrowed?’

We can imagine one scenario in which this question is felicitously uttered. There exists a book. It is not known which book exactly it is, and furthermore it is unknown how many people borrow that book. Everything else being equal, this gives us the possible (sets of) alternatives as follows:

(145) {{*All people borrowed book A; Some people borrowed book A; Nobody borrowed book A; Few people borrowed book A*}, {*All people borrowed book B; Some people borrowed book B; Nobody borrowed book B; Few people borrowed book B*},...}

Now there is in the context a set of sets of individuals (alternative properties) which may interact with the context-salient set of individuals. Importantly, since the downward quantifier is in topic position, evidence for this quantificational relation *cannot be in the previous context*. Therefore, when we are given alternative sets, the request to pick out which set stands in this quantificational relation with the salient individual set would only be reasonable if we can infer from world knowledge that such relation is likely to obtain for any alternative sets. Without assuming much about how our world knowledge is structured, I consider it quite plausible to claim that if there are enough books and enough people who borrow books, then there will be

some books that are popular, and there will be some books that few would borrow.

Put differently, we can reasonably infer/assume for our purpose, and our inference is likely to be true (given how the world goes and if normal occasions hold), that at least for one of the books in {A,B,C,...}, the following statement holds:

(146) *Few people borrowed book X.*

Because we don't know X, this reduces the previous set of sets of alternatives into one set, where the books still range over alternatives:

(147) *{Few people borrowed book A, Few people borrowed book B, Few people borrowed book C...}*

This inference is hard to draw: It is always difficult to make a statement of the states of affairs without explicit previous knowledge. This process often requires a rather constrained context, featuring a closed set of alternatives.

The same goes for upward quantifiers. In the absence of evidence that a majority of salient people *do* borrow a common book, it is still reasonable to infer without contexts that, if there is a set of books under discussion, most people may borrow a certain book commonly. Given that such scenario is likely to happen, it becomes meaningful to solicit information about such a particular book. Crucially, the subject quantifier does not require a structured knowledge of the particular surroundings and states of affairs of immediate proximity. It only requires a reasonable understanding of the nature of the world. As such, some quantificational information (*e.g.* most people may borrow a certain book commonly) can be construed as inferable given a neutral context and in the absence of explicit evidence.

Importantly, if what needs to be inferred is some more fine-grained information, it would be

harder to draw an inference about this information without the contexts providing explicit evidence.

First, bare numerals fit in this category:

(148) ??*San-ge ren jie-guo nei-ben shu?*

Three-CLF person borrow-EXP which-CLF book

‘Which book have three people borrowed?’

The situation here is the same as we have encountered previously in *why*-questions. We need to assume that a particular set of three people borrowed a book. Notice that in most contexts compatible with our world knowledge, it seems beyond inference that we can know, *beforehand*, that *exactly three* people borrowed a particular book.

In extremely difficult, highly restricted scenarios, we may still circumvent infelicity.

(149) (Readers who have checked out books in a library are asked to sign up, so that the library

is able to make a head count in order to make an inventory of books that are popular)

San-ge ren jie-guo nei-ben shu?

Three-CLF person borrow-EXP which-CLF book

‘Which book have three people borrowed?’

We might still not know beforehand that there must be three people that sign up for one certain book, but this information is within inference now.

My account extends to focus-sensitive expressions such as the *only*-NP, repeated below:

(150) #*Zhiyou Lisi jie-guo nei-ben shu?*

Only Lisi borrow-EXP which-CLF book

‘Which book has only Lisi borrowed?’

Only-NP carries an exhaustive reading, *i.e.* it quantifies over simultaneously the NP denoted referent and its complement set.

(151) p_0 : Lisi borrowed a certain book.

p_1 : None of the others borrowed that book. (For all individuals other than Lisi, no one borrowed a book)

The inference here is different from that in downward quantifiers, in that we need to exclude all but one person. It is no longer a statement based on our naïve knowledge of how the world goes. Therefore the propositional content of an *only*-sentence entails that all members other than the NP, the whole complement, does not possess a particular property. This quantifier makes salient a *particular* complement set that is associated with a *particular* individual referent. It amounts to saying that the speaker, upon uttering this question, is committed to believing that nobody other than Lisi has borrowed a certain book, even when the speaker does not know at that information state what book is under discussion. The speaker is able to infer that there is one such book without knowing its name, and expects the hearer to update information about the book’s name when answering the question. Given our knowledge state and inferential processes, it is hardly conceivable how we can deduce this very specific partition without overt evidence.

The only possible scenario I can think of that accommodates this knowledge state is the following quiz scenario. Some speakers find (152b) to be as good as (152a):

(152) (Participants to a quiz show are required to read the following sentence and choose from the multiple choices)

a. *Daduoshu ren xihuan* ____.

Most person like

‘Most people like (to read) ____’

A. War & Peace B. Anna Karenina C. Resurrection D. Ivan Illych

b. *Zhiyou Lisi xihuan* ____.

Only Lisi like

‘Only Lisi like (to read) ____’

A. War & Peace B. Anna Karenina C. Resurrection D. Ivan Illych

This puzzle would immediately disappear when the *only*-NP appears in the comment of a topic-comment structure, because we allow this property to be pre-established via prior knowledge.

Other focus-sensitive expressions follow (Yang 2012, 47):

(153) a. #*Shi Zhangsan chi-le shenme?*

SHI Zhangsan eat-PRF what

‘It is Zhangsan who ate what?’

b. #*Lian Zhangsan dou chi-le shenme?*

LIAN Zhangsan DOU eat-PRF what

‘Even Zhangsan ate what?’

My foregoing explanation of Chinese intervention effects crucially relies on the two-fold components of Chinese-specific information structural constraints and language-neutral

logico-semantic properties. My theory leads to the natural prediction that crosslinguistic variation in terms of intervention effects should be purely a function of language-internal constraints, and in the absence of such constraints we should find common patterns.

We see a clear pattern where focus-sensitive expressions, monotone decreasing quantifiers and non-monotonic quantifiers in Japanese and Korean induce lower acceptability than monotone increasing quantifiers. These patterns are reminiscent of the argumental data in Chinese. It thus seems reasonable to assume that the most common scenario where one forms a question while interacting with a generalized quantifier would be the context where explicit evidence can be drawn about the quantifier-denoted relations. When these relations are predicted and stated as discourse-new focus information, it simply imposes a higher requirement on the hearer's ability to agree with this prediction and to provide an instantiation.

In particular, the anti-topical property of scope-taking nominal expressions is a good predictor of their ability to be assumed (nominative-marked subjects in general, as opposed to topic-marked subjects, are interveners). The more nominative-marked/anti-topicality an item exhibits, the more *zhiyou* 'only'-like it is.

Languages may differ in how tolerant they are in allowing this marked type of scenarios to be elicited when a question is formed. In particular, given the topicality requirement of Japanese and Korean (Tomioka 2007), the Japanese topic position seems less liberal than Chinese. Recall that the *wh*-phrase is located in the comment structure in Chinese, but the same cannot be said of Japanese. When a *wh*-phrase is scrambled, it parallels the information structural configuration in Chinese, where the quantifier-denoted predicate is in a comment structure. Also, as I have argued, monotone increasing quantifiers allow a non-GQ, topical reading. This reading is possible in Japanese. According to Tomioka (2007), phrases like *all students*, *most students* can be

topic-marked and do not induce intervention. Finally, disjunctive expressions, *also*-suffix, etc. are compatible with my theory of focus-induced intervention effects. According to this view, then, Tomioka's (2007) ATI-based theory is compatible with my explanation, and the variable anti-topicality status for GQs is a result of the various interpretive contexts that matrix and embedded questions induce.

3.6 Summary

This chapter presented a semantic analysis of Chinese intervention effects. By investigating the idiosyncrasies of Chinese *why*-adjunct *weishenme*'s distributional patterns, I propose that the reason adverb takes a propositional argument and expresses a root question, with the illocutionary operator of question directly attached to it. As a consequence, when a subject quantifier scopes above *weishenme*, no logically coherent interpretation can arise.

When the subject operator is a focus expression, interaction with any *wh*-phrases will result in anomalous readings, given that the requirements of open propositions associated with *wh*-interrogatives force such focus information to be implicit and inferable.

Intervention effects are particularly intriguing because they are both universal and are subject to extremely subtle variation that differs from languages to languages and from constructions to constructions. Within a language, intervention effects often apply only selectively to a subset of *wh*-phrases. Across languages, the set of interveners and the inducing environment vary significantly. Furthermore, the unacceptability that arises from intervention effects is far from homogenous.

Despite several important and insightful semantic proposals (Beck 2006; Tomioka 2007), none of them are based on Chinese and none of their conclusions naturally extend to Chinese.

Theories of intervention in Japanese do not address the intervention patterns in Chinese *why*-questions. Similarly, Beck (2006) says nothing about Chinese adverbs. Since intervention effects involve the interpretational component and must belong to very basic properties of natural language, a thorough understanding of its mechanisms should predict that we can extend theories on one type of languages to other languages. As I show in Section 3.5, this is where Beck and other semantic approaches fall short: their theories cannot handle the Chinese data. I take this fact to indicate that other factors of semantics must be responsible for the rich diversity of intervention effect, and my contribution will be to lay bare these factors. In a nutshell, my theory is semantic in nature, but I propose that non-*why wh*-interrogatives and *why*-phrases cause intervention through distinct semantic mechanisms. In both mechanisms, there is no need to apply covert movement.

Accordingly, since no covert movement and stipulation of separate licensing mechanisms for *wh-in situ* is necessary, the empirical facts can be derived directly from compositional semantics and the pragmatics associated with the topic-focus configuration. Moreover, the variation of strength of intervention effects crosslinguistically is accounted for, by resorting to the interaction of language-specific information structure constraints and language-universal semantics;

Also, in both Germanic languages and Japanese/Korean, the unacceptability in intervention effects is gradable. On the contrary, only argumental intervention in Chinese shares this gradability, whereas *why*-induced intervention effect exhibits the characteristic of logical incoherence: the total inability to establish logical interpretations.

In the next chapter, I turn to intervention effects in Chinese alternative questions. I argue that despite the fact that alternative questions are different from *why*-questions, intervention effects should be explained in a way similar to what I develop in this chapter. In short, I unify two types

of intervention effects that figure prominently in the literature by applying a single semantic mechanism.

4 Rethinking the Semantics of A-not-A questions

4.1 Introduction

4.1.1 Problem

This chapter analyzes strong island effects and intervention effects in another Chinese question type, the A-not-A question construction, illustrated in (1):

- (1) *Ni xihuan-bu-xihuan paobu?*
 You like-NEG-like run
 ‘Do you like running or not?’

The A-not-A question construction is a special alternative question construction type. It gets its name from a reduplicative predicative component. Compared to a corresponding declarative sentence, an A-not-A question first reduplicates the predicative part of the declarative sentence. Then, a negative morpheme *bu/mei* ‘not’ is inserted in between the two copies of the predicative phrase, resulting in an A-not-A form. *Mei* is inserted when the predicate is a VP of perfective aspect, in other cases *bu* is inserted instead. This sentence with an A-not-A component receives an alternative question reading, although the exact alternative semantics of A-not-A questions is not agreed upon and is the topic of this chapter.⁵⁶

⁵⁶ The predicative element need not be a verb. It could be an A or a VP modifier, as in (i).

- (i) a. *Ta gao-bu-gaoxing?*
 He happy-NEG-happy
 ‘Is he happy or not?’
 b. *Ta jing-bu-jingchang qu paobu?*
 He often-NEG-often go run
 ‘Does he often go jogging or not?’

Chapter 4 constitutes a separate but closely parallel argument for a semantic explanation of island effects and intervention effects in Chinese. Taken as a whole, Chapters 2 to 4 undermine two of the strongest pieces of evidence that the locality constraints in *wh-in situ* languages need to be formulated in terms of covert movement. Strong island effects in A-not-A questions are exemplified in (2), where the CNPC constraint is violated:

- (2) #*Ni xihuan [ren-bu-renshi ni] de ren?*
 You like know-NEG-know you REL person
 #‘Do you like the person, which you know or you don’t know?’

As (3) shows, A-not-A questions also induce intervention effects when a subclass of scopal elements precede the A-not-A form:

- (3) #*{Meiyou ren /henshao ren} qu-bu-qu?*
 No person/few person go-NEG-go
 #‘For nobody/few people, do they go or not?’

4.1.2 Account of intervention effects

I develop a semantic theory that hinges upon the semantics of A-not-A questions, which is distinct from the semantics of other alternative questions. I draw on McCawley’s (1994) proposal that an A-not-A question expresses a request to either accept or reject the proposition’s content. Correspondingly, I propose a constructional analysis in which the A-not-A form denotes a yes-no function defined on a propositional argument. Similar to *weishenme*, the proposition-taking yes-no function directly takes scope above any existing generalized quantifiers. However, topic phrases occur outside the scope of a yes-no function, because topics take the widest possible

scope by initiating their own speech act. Accordingly, I argue that an A-not-A question in which a monotone increasing quantifier outscopes the A-not-A form is acceptable, because monotone increasing quantifiers are construed as topical. Conversely, an A-not-A question in which a monotone decreasing quantifier takes wide scope over the A-not-A form is impossible, because monotone decreasing quantifiers are not topicalizable. In sum, I show that the idiosyncratic semantics of the A-not-A form enables us to unify the intervention phenomena in both A-not-A questions and *weishenme*-questions.

According to Huang (1991), the A-not-A form hosts an interrogative operator. This operator takes a single predicate as its argument, and turns it into a binary set consisting of the predicate itself as well as its negative counterpart. Furthermore, this operator is argued to take wide scope by moving covertly to the left periphery of the sentence. This way, strong island effects are accounted for as a byproduct of covert movement, as Huang (1982) assumes that the island domains are not transparent for covert movement. Similarly, intervention effects would follow from the assumption that an intervener preempts the movement of the interrogative operator.

The reliance on covert movement yet again says nothing about the finer distinction among quantifier types. Furthermore, the aforementioned characterization of A-not-A questions in terms of covert movement carries the implicit assumption that A-not-A questions differ from other types of alternative questions in the licensing mechanisms, but not in meaning. For example, most previous theories (with the notable exception of McCawley 1994) take the view that A-not-A questions have the same semantic representation as *haishi*-questions (the Chinese equivalent of disjunctive *or*-questions). The latter is different in that a base-generated interrogative operator binds the disjunctive predicates at a distance. However, this is contrary to the fact. In what follows, I show that the two question types give rise to distinct readings under

quantificational contexts. I go on to argue that the distinct readings are compatible with a theory in which an A-not-A question is a yes-no question, and the A-not-A form expresses disjunctive propositions, rather than disjunctive predicates.

The rest of this chapter is structured as follows. Section 4.2 first discusses the properties of A-not-A questions in greater detail, and then provides evidence that A-not-A questions parallel *weishenme*-questions in terms of island effects and intervention effects; Section 4.3 offers a semantic proposal of A-not-A questions that accounts for the above effects; Section 4.4 compares my account with several alternative approaches that center on the relevant data; Section 4.5 further argues that the intervention witnessed in *haishi*-questions is of a different type; Section 4.6 concludes the chapter.

4.2 Data

4.2.1 Properties of A-not-A Questions

A-not-A questions are generally considered to be special among alternative questions, given that they are structurally distinct from *haishi*-questions, the canonical disjunctive questions in Chinese. A *haishi*-question is formed by juxtaposing a positive and a negative predicative phrase, and inserting the disjunctive connective *haishi* ‘or’ in between, as (4) illustrates.

(4) *Ni xihuan haishi bu-xihuan paobu?*

You like HAISHI neg-like run

‘Do you like running or not?’

Haishi differs from the English disjunctive operator (*A or B?*) in that it is exclusively used in interrogative disjunctive sentences, and is not compatible with declarative disjunctive sentences.

In the latter case, *huozhe* ‘or’ is used as a connective instead. As (5) illustrates, *haishi* and *huozhe* are in complementary distribution. The former only occurs in questions and the latter in declaratives.

(5) a. #*Wo pingshi xihuan paobu haishi daqiu.*

I regularly like run HAISHI play.ball

Intended: ‘On normal occasions, I enjoy jogging or playing ball game.’

b. *Wo pingshi xihuan paobu huozhe daqiu.*

I regularly like run HUOZHE play.ball

Intended: ‘On normal occasions, I enjoy jogging or playing ball game.’

c. #*Ni xihuan huozhe bu-xihuan paobu?*

You like HUOZHE neg-like run

Intended: ‘Do you like running or not?’

Structurally, *haishi*-questions share many properties with English disjunctive questions. In *haishi*-questions, the two disjunctive predicates selected by *haishi* need not be a positive predicate and a corresponding negative copy. In (6), the two disjunctive predicates are distinct from each other:

(6) *Ni xihuan haishi taoyan paobu?*

You like HAISHI dislike run

‘Do you like running or do you dislike running?’

In cases when two copies (one positive and one negative) of the same predicate occur in a *haishi*-question, the order of positive preceding the negative is often favored. However, this is merely a preference, not a grammatical constraint. Nothing prevents the opposite order, in which

the negative copy precedes the positive one. (7) is mildly infelicitous for many speakers since there is no reason to put the negative copy ahead when the speaker does not intend to mean something different, yet most native speakers tend to agree that the sentence is acceptable:

(7) *Ni bu-xihuan haishi xihuan paobu?*

You neg-like HAISHI like run

‘Do you not like running or do you like running?’

Furthermore, *haishi* can be iterated, creating multiple alternatives in the same question:

(8) *Ni xihuan paobu haishi tiaowu haishi changge?*

You like run HAISHI dance HAISHI sing

‘Do you like running or dancing or singing?’

By comparison, A-not-A questions have none of the above-mentioned properties. First of all, reduplication is necessary for an A-not-A question. That is to say, only two copies of the same predicate can occur as alternatives in the question:

(9) a. *#Ni xihuan taoyan paobu?*

You like dislike run

‘Do you like or dislike running?’

b. *#Ni xihuan bu-leyi paobu?*

You like neg-enjoy run

‘Do you like or not enjoy running?’

Secondly, the alternative predicates are order-sensitive. It is not possible to switch the order so that the negative copy precedes the positive one (McCawley 1994):

(10) #*Ni bu-xihuan xihuan paobu?*

You neg-like like run

‘Do you not like or like running?’

Furthermore, the strict requirement for reduplication also rules out the possibility of any iteration in an A-not-A question, contrary to the case in a *haishi*-question.

In addition, A-not-A questions are also subject to several other construction-specific structural constraints. When the predicative component consists of multiple verbs, reduplication must apply to the first predicate in terms of linear order, as (11) illustrates.

(11) a. *Ni xiang-bu-xiang qu paobu?*

You want.to-NEG-want.to go run

‘Do you want to go running or not?’

b. #*Ni xiang qu-bu-qu paobu?*

You want.to go-neg-go run

‘Do you want to go running or not?’

Moreover, the reduplication process need not always create two identical copies of the same predicate. If the predicate being reduplicated is a multi-syllabic word, only the second copy (*i.e.* the negative predicate) needs to be a full word. The first copy needs only contain the initial syllable of the word. For example, (1) may also be uttered as follows:⁵⁷

⁵⁷ Therefore, it is generally believed that the reduplication process is a morphological process (Huang 1991), rather than a syntactic process. A syntactic deletion process is unlikely to apply to the sublexical part, since that would violate the Lexical Integrity Principle. As McCawley (1994) and others have argued, the fact that the morphological process is at play is consistent with a non-compositional, more conventionalized interpretation. In this chapter, I embrace this notion of form-meaning correspondence and consider this phonologically more “fused” form as a sign of a high level of conventionalization.

(12) *Ni xi-bu-xihuan paobu?*

You like-NEG-like run

‘Do you like running or not?’

The above structural idiosyncrasies of A-not-A questions argue against a view in which an A-not-A question is derived from a *haishi*-question via a syntactic deletion operation.⁵⁸ Also, These structural idiosyncrasies are incompatible with a view in which an A-not-A question contains a null *haishi*-operator. In either view, it is unclear why an A-not-A question behaves differently in the ability to order-switch or iterate, and so forth. The uniqueness of A-not-A questions is particularly intriguing for the purpose of this dissertation, because they exhibit strong parallelism with *weishenme*-questions with respect to island and intervention phenomena. In what follows, I first introduce the parallelism in island effects between A-not-A questions and *weishenme*-questions, before turning to their parallel intervention effects.

4.2.2 Strong Island Effects

As is shown below, (13a-c) cannot be interpreted as an A-not-A question when the A-not-A form is embedded in one of the strong island domains (Huang 1991).

⁵⁸ Deriving A-not-A questions from *haishi*-questions is understandably taken up in the early literature. Wang (1967) initiates the discussion by suggesting that an A-not-A question construction is a ‘truncated’ form of a *haishi*-question construction. Wang suggests that the said syntactic deletion operations are structure-preserving and meaning-preserving. All these forms of ‘truncated’ alternative question constructions are supposed to contain a covert *haishi* ‘or’ coordinator. Following from this suggestion, it seems that Wang would endorse the view that the deletion processes are post-syntactic, and predict that all types of alternative question constructions in Chinese behave in the same way (although Wang does not say explicitly which component his deletion operation belongs to). However, this prediction is not borne out, which prompts Huang (1991) to articulate a modular (*i.e.* splitter) view in opposition to Wang’s lumpier view. Instead of clustering all ‘truncated’ alternative types as quasi-*haishi* constructions that are derived from *haishi*-questions via syntactic deletion processes, Huang argues that constructions such as A-not-A questions are derived by unique syntactic licensing mechanisms.

- (13) a. #*Ni xihuan [ren-bu-renshi ni] de ren?*
 You like know-NEG-know you REL person
 #‘Do you like the person that [do you know or not]?’
- b. #*Ni [yinwei Lisi lai-bu-lai] shengqi?*
 You because.of Lisi come-NEG-come be.angry
 #‘Are you angry because [does Lisi come or not]?’
- c. #*[Wo qu-bu-qu Meiguo] bijiao hao?*
 I go-NEG-go America relatively be.good
 #‘Is it relatively good that [am I going to America or not]?’

In (14), I repeat the strong island examples for *weishenme*-questions presented in Chapter 2 (Bayer 2006; Cheng 2009).

- (14) a. #*[Women weishenme chuli zhe-jian shi] bijiao hao?*
 We why handle DEM-CLF affair relatively be.good
 #‘Why_i would [that we handle this affair t_i] be better?’
- b. #*Ni xihuan [ta weishenme zhu] de cai?*
 You like he why cook REL dish
 #‘Why_i do you like the fish [that he cooked t_i]?’
- c. #*Ni [weishenme jiegu yuangong] yihou laoban hen shengqi?*
 You why fire employee after boss DEG angry
 #‘Why_i was the boss angry after [you fired the employees t_i]?’

As I point out in Chapter 2, the island effects thus induced are strong and cannot be reduced to contextual factors: we cannot interpret these island sentences, no matter how we manipulate the

contexts. The island effects in (13) are similarly impossible. The parallelism between *weishenme*-questions and A-not-A questions in island effects is well documented in the literature (Huang 1982; Huang 1991; Hagstrom 2006). If we explore further, the parallelism still holds. We have seen in Chapter 2 that a *weishenme*-question as in (14) cannot be construed as a matrix *why*-question. It is nevertheless possible in certain circumstances to obtain an indirect question reading. Similarly, an A-not-A question is able to take a local, embedded scope (Huang 1991; Huang et al. 2009, 247).

- (15) a. *Ni yinggai rang ta lai jue ding [ni qu-bu-qu] de wenti.*
 You should let him come decide you go-NEG-go REL question
 ‘You should let him determine the issue of whether you are going or not.’
- b. [*Ta lai-bu-lai*] *yidianr dou mei guanxi.*
 He come-NEG-come at.all PRT neg matter
 ‘Whether he comes or not doesn’t matter at all.’

A similar constraint on possible readings can be found in multiple *wh*-questions. Multiple *wh*-questions in Chinese, as in English, allow either *wh*-constituent to be interpreted in the matrix scope. (16) may be construed either as a matrix *who*-question or a matrix *what*-question:

(16) *Ta xiang zhidao [shei xie-le shenme]?*

He want know who write-PRF what

a. ‘Who is the person x such that he wants to know what x wrote?’

b. ‘What is the thing y such that he wants to know who wrote y?’

Nevertheless, if a *wh*-constituent is paired up with an A-not-A element in a multiple *wh*-question, only the *wh*-constituent may take the matrix scope. (17) receives the reading as a *who*-question, but not as an alternative question (Hagstrom 2006).

(17) *Ta xiang zhidao [shei xi-bu-xihuan ta] (ne)?*

He want know who like-NEG-like her (Q)

a. ‘Who is the person x such that he is wondering does x like her or not?’

b.#‘Is he wondering who likes her, or is he wondering who doesn’t like her?’

Finally, A-not-A questions parallel *weishenme*-questions in terms of extraction from complements. Both *weishenme* and the A-not-A form apparently embed in a complement clause, and the corresponding sentences receive a reading as a matrix question.

(18) a. *Ni juede [ta weishenme lai]?*

You feel he why come

‘Do you feel that why he comes?’

b. *Ni juede [ta hui-bu-hui lai]?*

You feel he will-NEG-will come

‘Do you feel that he will come or not?’

Nevertheless, McCawley (1994) argues that the purported embedded clause might not be embedded after all, since the material preceding the embedded clause, *ni juede* ‘you feel’, might be a parenthetical expression. In such case, (18b) is acceptable because it lends itself to a parenthetical reading: ‘Will he come or not, do you feel?’ When verbs unlikely to be used in parentheticals replace *juede* ‘feel’, the resulting A-not-A questions are significantly worse off, as the following examples given by McCawley (1994) show:

(19) a. ?? *Zhangsan huaiyi Lisi lai-bu-lai?*

Zhangsan suspect Lisi come-NEG-come

‘Zhangsan suspected that Lisi will come or not?’

b. ?? *Ni xihuan ta lai-bu-lai?*

You like he come-NEG-come

‘You like that he is coming or not?’

Furthermore, A-not-A questions also exhibit what Tsai (1994) calls the phenomenon of nominal islands, namely, a class of verbs that take nominal complements including *yihan* ‘regret’, *jide* ‘remember’ and also *tongyi* ‘agree’ also prevent an A-not-A question from appearing in their complements, as (20) illustrates.

- (20) ??*Zhangsan hen yihan Lisi qu-bu-qu?*
 Zhangsan MOD regret Lisi go-NEG-go
 ‘Did Zhangsan regret that Lisi went or not?’

Moreover, the A-not-A form is incompatible with control verbs such as *shefa* ‘manage to’ that obligatorily takes a clausal complement. This is shown in (21).

- (21) #*Zhangsan shefa [qu-bu-qu]?*
 Zhangsan manage.to go-NEG-go
 ‘Did Zhangsan manage to go or not?’

It is important to note that these nominal complement-taking verbs are unlikely to be used as parenthetical expressions. As with *huaiyi*, it seems unreasonable to expect, under normal circumstances, that *yihan* ‘regret’ is something the speaker can presuppose for the listener. Consequently, nominal islands give credence to the claim that A-not-A question cannot be embedded under complements.⁵⁹ This claim gets us back to McCawley’s position in which apparent embedded complement is a matrix question in disguise (see Section 2.4.2, chapter 2). If McCawley’s parenthetical arguments are on the right track, we are tempted to conclude that embedding is not possible for *weishenme*-questions and A-not-A questions alike.

⁵⁹ Hagstrom (2006, 184) notices that the phenomenon of nominal islands occurs in both A-not-A questions and *weishenme*-questions. However, Hagstrom concurs with Tsai (1994) and suggests that the nominal island domains are not ‘real’ complements. They are subject to a separate syntactic mechanism. Whatever this mechanism might be, it doesn’t target the ‘real’ complement domain, which in Hagstrom’s view encompasses all those complements that do not exhibit the nominal island effects. Yet the above discussion already shows that there are more complement domains in which extraction is impossible than the domains identified by Tsai under the rubric of nominal islands. For example, the control verbs *shefa* ‘manage to’ or *shitu* ‘try to’ certainly cannot be characterized as nominal complement-taking verbs. Therefore, the parenthetical account as proposed by McCawley constitutes an alternative analysis against Tsai’s theory of nominal islands.

4.2.3 Intervention Effects

The second part of the parallelism between *weishenme*-questions and A-not-A questions concerns intervention effects. As is also well known in the literature (Wu 1997; Law 2001; Hagstrom 2006), *weishenme*-questions and A-not-A questions are prone to the same intervention phenomena. But just as the subtleties with the *weishenme*-question's intervention were hitherto unnoticed, no one, to my knowledge, has attempted to study A-not-A questions' intervention patterns from the perspective of quantifier type, a task I am taking up now.

In the previous chapter, I have shown that intervention effects of *weishenme*-questions are sensitive to the presence of focus-sensitive expressions or quantifiers. Within quantifiers, the intervention is furthermore sensitive to quantifier monotonicity. In the following, I show that A-not-A questions parallel *weishenme*-questions in each of the relevant environments.

In quantifier-induced intervention, sensitivity to the monotonicity of quantifiers can be identified, in a way reminiscent of what we have seen with *weishenme*-questions. To start with, when preceded by monotone decreasing quantificational phrases such as *few/nobody*, an A-not-A question is not interpretable.

(22) #*{Meiyou ren /henshao ren} qu-bu-qu?*

No person/few person go-NEG-go

'Nobody/few is going or not?'

Monotone increasing quantificational phrases exhibit certain gradability in acceptability. Phrases with a simplex quantificational determiner, such as *daduoshu ren* 'most people', are the most acceptable when preceding the A-not-A form, as shown in (23).

(23) *Daduoshu ren qu-bu-qu?*

Most person go-NEG-go

‘Most people are going or not?’

Meanwhile, in the case of morphosyntactically complex, modified numerals, acceptability judgments are lower than (23). Similarly, the non-monotonic bare numeral phrases also lead to an unacceptable A-not-A question:

(24) a. ??{*Zhishao wu-ge ren/chaoguo wu-ge ren*} *qu-bu-qu?*

{At least five-CLF person/more than five-CLF person} go-NEG-go

‘(At least/more than) five people are going or not?’

b. ??*Wu-ge ren qu-bu-qu?*

Five-CLF person go-NEG-go

‘Five people are going or not?’

For these monotone increasing modified numerals and bare numerals, amelioration is witnessed in embedded contexts. For monotone decreasing quantifiers, embedded contexts fail to rescue intervention effects. (25) illustrates the amelioration phenomena for the increasing quantifiers, and (26) illustrates the absence of amelioration for the decreasing quantifiers.

(25) *Wo yijing zhidao {zhishao wu-ge ren/chaoguo wu-ge ren/wu-ge ren}*

I already know {at least five-CLF person/more than five-CLF person/five-CLF person}

qu-bu-qu.

go-NEG-go

‘I already knew whether {at least five people/more than five people/five people} will go or not.’

(26) #*Wo yijing zhidao {henshao ren/ budao wu-ge ren/zuiduo wu-ge ren}*

I already know {few person/ less.than five-CLF person/At.most five-CLF person}

qu-bu-qu.

go-NEG-go

‘I already knew whether {few people/less than five people/at most five people} will go or not.’

In Chapter 3, I investigate the intervention patterns in *weishenme*-questions. (27) repeats the relevant data. The distributional patterns in (27) are identical to those in (22)-(25).

(27) a. #*{Meiyou ren/henshao ren} weishenme cizhi?*

No person/few person why resign

#‘For nobody/few people, why they resigned?’

b. ?*{San-ge ren/zhishao san-ge ren/chaoguo san-ge ren}*

{Three-CLF person/at.least three-CLF person/more.than three-CLF person}

weishenme cizhi?

why resign

‘For (at least/more than) three people, why they resigned?’

c. *Wo yijing zhidao {zhishao wu-ge ren/chaoguo wu-ge ren/wu-ge ren}*

I already know {at least five-CLF person/more than five-CLF person/five-CLF person}

weishenme qu.

why go

‘I already knew, for (at least/more than) five people, why they went.’

d. *#Wo yijing zhidao {henshao ren/meiyou ren} weishenme qu.*

I already know {few person/no person} why go

#‘I already knew, for {nobody/few people}, why they went.’

Apart from quantificational phrases, adverbs of quantification also trigger intervention effects in A-not-A questions. The patterns of intervention similarly vary according to the monotonicity of the quantificational elements:

(28) a. *Ta pingchang/dabufen shijian kan-bu-kan qiu?*

He normally/most time watch-NEG-watch ball.game

‘For normal occasions/For most of the occasions, did he watch ball game or not?’

b. *#Ta henshao/congbu kan-bu-kan qiu?*

He seldom/never watch-NEG-watch ball.game

#‘For few/none of the occasions, did he watch ballgame or not?’

Example (29) demonstrates focus-induced intervention in A-not-A questions. (29a) is unacceptable as the A-not-A form is preceded by the focus-sensitive operator *the only*-NP. Similarly, (29b) and (29c) exhibit intervention, when the focus-sensitive particle *lian...ye* and the

focus adverbial *zhi* ‘only’ precede the A-not-A form.⁶⁰

(29) a. #*Zhiyou Lisi hui-bu-hui lai?*

Only Lisi will-NEG-will come

#‘For only Lisi, will he come or not?’

b. #*Lisi zhi xi-bu-xihuan paobu?*

Lisi only like-neg-like run

#‘Lisi only will come or not?’

c. #*Lian Lisi ye xi-bu-xihuan paobu?*

LIAN Lisi also like-neg-like run

#‘For even Lisi, will he come or not?’

A related phenomenon is intervention effects caused by the focus particle *shi*. In Chinese, a focalizing copula *shi* overtly marks the constituent to its immediate right as the sentential focus, creating a cleft-like construction (Paris 1979; Teng 1979; Ting-chi Tang 1983). As a copula, *shi* may also get reduplicated in an A-not-A question. Since *shi* is able to left-attach to a sentential subject (and because reduplication always targets the first predicate of the sentence), the *shi-not-shi* question is the only type of A-not-A questions in which the reduplicated predicate precedes the subject. (30) shows that the reduplicated *shi*-copula may either follow or precede a subject, depending on whether the focused constituent is a predicate or the subject.

⁶⁰ In Chinese, a *lian* + XP + *dou* construction marks the XP as the focussed constituent (Paris 1979; Shyu 1995; Hole 2004). *Lian* in this construction is often associated with English *even*. *Dou* is the same maximality operator that licenses a monotone increasing quantifier. Its occurrence in this focus-sensitive construction is obligatory, although there is controversy whether it expresses the same maximality information in this construction.

- (30) a. *Ta shi-bu-shi xiang qu?*
 He COP-NEG-COP want go
 ‘Is it the case that he wants to go?’
- b. *Shi-bu-shi ta xiang qu?*
 COP-NEG-COP he want go
 ‘Is it the case that he wants to go?’

When *shi* attaches to a predicate, the corresponding *shi-bu-shi* question still induces intervention effects, as in (31a). Yet, (31b) demonstrates that intervention disappears if *shi-bu-shi* appears sentence-initially, as shown by Soh (2005).

- (31) a. #*{Meiyou ren/Henshao ren/zhiyou Lisi} shi-bu-shi xiang qu?*
 No person/few person/only Lisi COP-neg-COP want go
 ‘Is it the case that {nobody/few people/only Lisi} want(s) to go?’
- b. *Shi-bu-shi {meiyou ren/henshao ren/zhiyou Lisi} xiang qu?*
 COP-neg-COP no person/few person/ only Lisi want go
 ‘Is it the case that {nobody/few people/only Lisi} want(s) to go?’

Again, this mirrors the patterns of *weishenme*. When *weishenme* precedes a sentential subject, no intervention arises. This is illustrated in (32).

- (32) a. #*{Meiyou ren/henshao ren/zhiyou Lisi} weishenme xiang qu?*
 {No person/few person/only Lisi} why want go
 #’For nobody/few people/only Lisi, why they wanted to go?’
- b. *Weishenme {meiyouren/henshao ren/zhiyou Lisi} xiang qu?*
 Why {no person/few person/only Lisi} want go
 ‘Why {nobody/few/only Lisi} wanted to go?’

4.2.4 Further Evidence

In Chapter 3, I cite Ernst’s (1994) observation that whereas quantificational adverbs and most other adverbs induce intervention in *weishenme*-questions, one class of epistemic adverbs may precede *weishenme* without causing a *weishenme*-question to be unacceptable. *Daodi* ‘in the hell’ and *jiujing* ‘honestly’ belong to this class of adverbs. In (33), we see that A-not-A questions again parallel *weishenme*-questions in this respect.

- (33) a. *Ta daodi weishenme lai?*
 He in.the.hell why come
 ‘Why the hell did he come?’
- b. *Ta daodi lai-bu-lai?*
 He in.the.hell come-NEG-come
 ‘Would he come or would he not, after all?’

In contrast, another class of adverbs that encodes speaker attitudes, such as *yiding* ‘definitely’, still induces intervention:

(34) a. # *Ta yiding weishenme lai?*

He definitely why come

#‘Definitely, why he came?’

b. # *Ta yiding lai-bu-lai?*

He definitely come-NEG-come

#‘Definitely, is he coming or not?’

The reason for the distinction between two classes of adverbs has been explained in Chapter 3. In a nutshell, adverbs such as *yiding* ‘honestly’ indicate the speaker’s attitude towards the propositional content or contents of smaller units. On the other hand, the class of adverbs represented by *daodi* or *jiujing* indicates the speaker’s epistemic attitudes toward a speech act. Following the practice in which the scope of a speech act in a question is marked by a question force operator, we expect that *daodi/jiujing* to appear to the left of that operator since they are modifying the speech act. Meanwhile, because *yiding* is not compatible with taking a question force operator as its argument, interpreting the question force operator within the scope of *yiding* creates a semantic anomaly.

Aside from epistemic adverbs, temporal and locative adverbs (type-e denoting and topicalizable) also circumvent intervention (Ernst 1994; Law 2006), as seen in (35).

(35) a. *Ni jintian xiang-bu-xiang qu paobu?*

You today want-NEG-want go jogging

‘Today do you want to go jogging or not?’

b. *Ta zainar he-mei-hejiu?*

He there drink-NEG-drink

‘Did he drink there or not?’

Temporal and locative adverbs are expressions that have long been known to allow for a topic reading (Ernst 1994; Law 2006). In addition, (36) shows that when multiple topics are co-occurring, they can all precede the A-not-A form. There seems to be a functionally based cognitive constraint preventing more than three topics from co-occurring in the same sentence in Chinese. But a sentence with three topics is marginally acceptable (Erteschik-Shir 2007). In such case, we also find an A-not-A question with three preceding topics:

- (36) ?*Zhe-chang yinyuehui ni mingtian zhun-bu-zhunbei qu?*
 DEM-CLF concert you tomorrow plan.to-NEG-plan.to go
 ‘This concert, you tomorrow plan to go or not?’

To sum up, in the above I have shown that an A-not-A question allows two types of elements to precede the A-not-A form:

- (37) I. Topicalizable expressions; or
 II. Speech act-level epistemic attitude adverbs.

4.3 Semantics of A-not-A Questions

4.3.1 Huang’s Approach

In this section, I review the covert movement approach of Chinese intervention effects in A-not-A questions. I discuss Huang’s (1988) classical theory, and argue that neither this theory, nor a foreseeable revision involving covert movement, would be sufficient to address the empirical data presented in the previous section.

In his classic account, Huang proposes (Huang 1988; 1991) that, in an A-not-A question, a regular predicative element merges with an interrogative operator in surface syntax. This operator, termed NQ by Huang, is assigned the category of INFL and hence combines with the predicative element to form a phrasal unit, in the same way as other canonical Infl heads.⁶¹ After the initial merge, NQ undergoes covert movement at LF to check off the interrogative feature at [Spec, CP] for proper interpretation. Furthermore, Huang assumes that the level of surface syntax also feeds input to the PF component, and he proposes that the reduplicated form of the A-not-A part is a matter of Spellout. That is, the instruction PF receives requires that the [*Predicate* + *NQ*] chunk to be spelled out phonologically as a positive and a negative predicate copy. As a consequence, this account claims that both the reduplication and the negative morpheme are inserted as something completely arbitrary, and does not bear on the interpretation process.

When the LF component feeds into the semantic representation module, NQ is interpreted as taking the predicative element as its argument and derives a disjunctive set out of it. The LF structure and the semantics of A-not-A questions are represented via an example as follows (Huang et al. 2009):

⁶¹ In this sense, Huang assumes that NQ functions similarly to the aspectual markers *-le* (the perfective marker) and *-guo* (the experiential marker), which have been claimed to belong to the category INFL. In later approaches, the initial merge position of NQ, as well as the exact nature of the negative predicate, has been subject to some debate. For example, Law (2001) hypothesizes that NQ is base-generated at the head of NegP. This head attracts a genuine negative morpheme to the specifier of the NegP, triggering an agreement relation.

Similarly, in Huang's later work (Huang et al 2009, 253), he changes his previous position where NQ merges at the INFL position. Instead, he suggests that as an interrogative functional head, NQ should be located in the same position where one would find the negation head of a negative sentence. This essentially echoes the position Law posits, although Huang continues to treat the negative component of A-not-A questions as purely phonological. Related to this issue is Huang's proposal that NQ merges at the INFL position. Independently, there are reasons to assume that if NQ exists, it is unlikely to occupy the INFL position, as the A-not-A form (*i.e.* the result of spelling out NQ as well as the predicate) is not in complementary distribution with the aspectual markers (McCawley 1994). Furthermore, following Cinque (1993), INFL is hardly characterizable by a single position.

(38) *Ta gao-bu-gaoxing?*

He happy-NEG-happy

‘Is he happy or not?’

(39) a. [_{CP} NQ_{i[+A-not-A]} [_{IP} *ta* t_{i[+A-not-A]} *gaoxing*]]

b. ‘For x, x ∈ {be happy, be not happy}, he x?’

Under Huang’s analysis, the merge of NQ with the predicate is unique to A-not-A questions. This merge distinguishes A-not-A questions from other constructions of alternative questions, such as *haishi*-questions. Huang remains uncommitted as to how the other types of alternative questions get licensed, but he clearly subscribes to the idea that a *haishi*-question (of the form *V-haishi-neg-V*) involves the genuine juxtaposition of one positive and one negative predicate, such that whatever interrogative operator contributes to the alternative question semantics must bind an overt disjunctive set of opposing predicates. Huang argues that, if A-not-A questions do not share the licensing mechanisms of others, then an A-not-A question must not be a ‘truncated’ form of another alternative question type such as a *haishi*-question, nor bear a null *haishi*-operator.⁶²

If NQ undergoes covert movement, then strong island effects would follow from the structural locality constraints banning movement from across island domains. Furthermore, nothing prevents NQ from taking embedded scope, thereby explaining the A-not-A form’s reading as indirect questions in embedded clauses as well as multiple *wh*-questions.

⁶² Following a Barriers framework, Huang argues that a constituent reduction operation that can derive a ‘truncated’ *haishi*-question is post-syntactic by nature. This means that, at the syntactic derivation level, a truncated *haishi*-question would not have a distinct representation. Since it is the syntactic level that feeds LF, where the binding mechanism applies, there is no way that an A-not-A question can be a ‘truncated’ *haishi*-question via reduction but maintains a different binding mechanism. As such, Huang’s theory suggests that A-not-A questions are idiosyncratic.

Intervention effects, in addition, have been characterized (Law 2001; Soh 2005; Hagstrom 2006; Yang 2006) as the barrierization determined by relativized minimality (Rizzi 1990; Cinque and Rizzi 2010). Specifically, after entering into an agreement relation with the negative morpheme, NQ goes on to take scope, but covert movement is blocked by an intervening quantificational subject, as shown in the following schema.

(40) [CP Q-Op_i [IP Op_j *meiyouren_j* ‘nobody’ [NegP [Neg⁰ t_i [VP]]]]]

The circumvention of intervention in the *shi*-cleft construction would also follow from the covert movement account. As NQ is assumed to be attracted by the highest/leftmost predicate for feature checking, in a *shi*-cleft construction it initially merges inside the projection of the *shi*-copula. As such, at surface syntax it stays above the quantificational subject position, hence it does not cross any barriers when moving to take scope at LF (Soh 2005).

Empirically, a covert movement approach, as it currently stands, does not make a fine-grained enough distinction within quantifier types to allow for only a subset of quantifiers to block the movement of the question operator NQ. Furthermore, a covert movement account expects that, in embedded questions, NQ still moves to take the embedded [Spec, CP] scope position (across the quantificational interveners along the way). Hence, even assuming that the quantifier types can be fine-tuned to accommodate the correlation between monotonicity and topicality, it is unclear how such an account handles the selective amelioration phenomenon in a principled manner. In other words, the parallelism leads us back to the familiar situation encountered in *weishenme*-questions, in which a structural account is inherently unsuited for addressing the complex interactions of the intervention pattern.

Conceptually, structural formulations fail to get the interpretation right. According to Huang’s analysis in (39), the NQ in (41) should range over two opposing predicates. As NQ

moves to take scope, an operator-variable pair is formed by associating this binary set of predicates with its gap position, yielding the semantics in (42):

(41) *Daduoshu ren hui-bu-hui qu?*
 Most person will-NEG-will go

(42) ‘ $x \in \{hui\ qu, bu-hui\ qu\}$, *daduoshu ren* x ?’
 (= ‘ $x \in \{\text{will go, will not go}\}$, most people x ?’)

This in turn derives two alternative propositions (here I am using an informal notation):

(43) $\{p_1 = \text{Most people will go}, p_2 = \text{Most people won't go.}\}$

In p_1 , the positive predicate is within the nuclear scope of the quantifier *most*. In p_2 , the negative predicate is also within *most*'s nuclear scope, which means negation is scoping under *most*. The problem with this interpretation is that the two alternative propositions are not exhaustively carving up the logical space. Aside from the situations expressed by these two propositions, there is still a third situation that belongs to neither of the two, represented by (44):

(44) $p_3 = \text{Neither most people will go, nor most people won't go.}$

For example, imagine a situation where exactly half of the people will go. This situation instantiates p_3 , and does not instantiate p_1 nor p_2 . This result is undesirable, because various studies have shown that speakers would use an A-not-A question when presented with two alternatives that exhaustively carve up the logical space (McCawley 1994; Wu 1997; Schaffar and Chen 2001). A natural way to address this problem is to discard Huang's claim that negation takes scope *in situ*, and instead interpret the negative morpheme as expressing sentential negation that scopes above *most*. If this is the case, then the negative proposition in p_2 is replaced by the

following: ‘ p_2 ’ = *It is not the case that most people will go.*’ This guarantees exhaustivity. However, the semantics thus derived does not quite fit with our intuition of what this quantified A-not-A question is about. This becomes evident when we consider the meaning of a negative answer to the question in (45), shown below:

(45) A : *Daduoshu ren hui-bu-hui qu?*

“The majority of people, will they go or not?”

B: *Bu.*

‘No.’

Reading A: ‘The majority of people, as a group, they will not go.’

#Reading B: ‘It is not the case that most people will go.’

That is, in the negative answer the quantifier does not fall within the scope of sentential negation. In fact, the question is interpreted in a context where there exists a plurality of individuals. They constitute the majority of all the contextually relevant individuals, and they either will collectively go as a group, or will collectively not go. In other words, the quantifiers (used pre-theoretically) are individual-denoting plural indefinites, rather than GQ-denoting. This is probably the strongest case against positing covert movement: it cannot be the case that plural indefinites constitute interveners in covert movement.

4.3.2 Echoing *Why*-questions: A Topicality Account

We have seen that the set of ‘interveners’ for both A-not-A questions and *weishenme*-questions are the same. Similarly, those elements that circumvent intervention in A-not-A questions are the same as those in *weishenme*-questions. Moreover, when quantifiers precede the A-not-A form, they are interpreted as individual-denoting plural indefinites, again in parallel to the case in

weishenme-questions. The parallelism we have seen above give us reasons to believe that the intervention in A-not-A questions results from the ban on non-topical expressions to take wide scope over the A-not-A form. In what follows, I present an analysis along this track, arguing that the A-not-A form (that is, the reduplicative predicative phrase) combines with sentential force directly.

To begin with, I adopt an alternative view on the semantics of A-not-A questions that is first articulated in McCawley (1994) (see also Cole and Lee 1997; Gasde 2006). Namely, an A-not-A question is a yes-no question. That is, it is construed as a request to accept or reject a proposition. Correspondingly, the A-not-A form denotes a binary truth value over propositions ($f: p \rightarrow \{0,1\}$). In yes-no questions, speech acts operate over yes-no alternative truth values (Farkas and Bruce 2009; Roelofson and Farkas 2015). Under the assumption in Chapter 3, where the question speech act is realized by an imperative operator, I thus propose that the imperative operator composes with the yes-no function expressed by the A-not-A form, performing a request to pick out one of the binary truth values.

Crucially, the A-not-A form mediates between the propositional level and the illocutionary level. By denoting a yes-no function, it combines with an already scope-resolved propositional radical. Therefore, no quantifiers may take scope above the A-not-A form. Since Chinese disallows scrambling, no quantifiers or other scope-taking elements can scramble across the A-not-A form and occur in a structurally higher position (while reconstructing their scope in a lower position). This means that, for any subsentential expression to linearly occur to the left of the A-not-A form, it would have to be either a topic or a speech-act epistemic adverb since both are able to take scope above speech act operators. Note that although the A-not-A form is semantically a binary function over propositions, it still ostensibly expresses a binary disjunction over

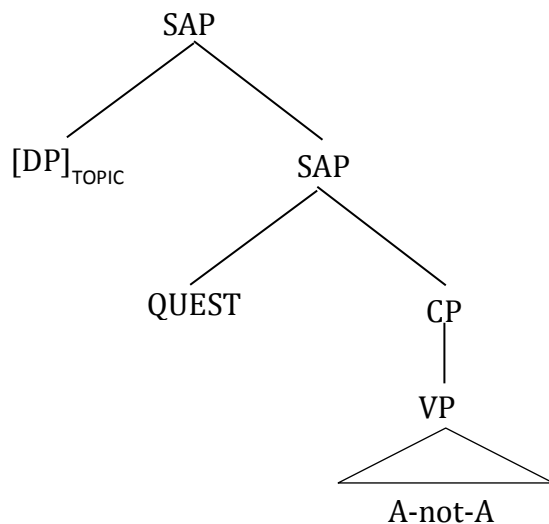
predicates. Therefore, what ostensibly looks like the ‘subject’ for the predicate in the A-not-A form is always a topic. The A-not-A form in turn expresses a comment. Adopting the speech act-based analysis in the last chapter, I assume that topic in an A-not-A question performs its own speech act by means of an initiating, frame-setting action (à la Reinhart).

In my current account, a speech act takes scope between the topic and the comment, where the comment ostensibly consists of only a predicative phrase. In this sense, the speech act can be seen as taking VP scope, since nothing takes scope in between it and the VP.⁶³

Below I present a more detailed treatment of the account laid out above. I start with a constructional rule specifying that the idiosyncratic predicative phrase, the A-not-A form, always selects for a topic. In a minimalism framework, this can be captured by again resorting to the projection of Speech Act Phrase (SAP) as a means to locate the syntactic position of topic. Echoing Chapter 3, I assume that the topic DP in an A-not-A question merges at the Specifier of SAP. A second SAP occurs as the sister to the topic, which in turn branches into one node representing the speech act operator (here the question operator QUEST) and another node representing the sentence radical CP. The CP does not contain any subject, in which case its only daughter is a VP, which hosts the A-not-A form.

⁶³ This view is similar in spirit to Gasde’s (2006) proposal that Force resides in clause-internal positions for A-not-A questions. Specifically, Gasde argues that the question feature is checked in a projection immediately c-commanding the VP, which he calls ‘Force₂P’ (F₂P). Once checked, the Q feature turns the predicate represented by V₀ into a function, which contributes an interrogative force to the whole sentence in an A-not-A question. In this way, the scope of the question operator is limited to the predicate in A-not-A question. Gasde achieves this by assuming a syntactic procedure of ‘clausal typing’ (Cheng 1991) as responsible for attaching sentential force. In my approach, this is done by showing that the semantics of the A-not-A form as well as the Chinese-specific ban on scrambling eliminates any intermediate scopal possibilities, causing Force to be directly adjacent to the VP. It suffices to show that this claim (and intuition) is shared by other approaches. By referring to Gasde’s claim, I am not committed to the view that there exists a dedicated clause-internal ForceP position.

(46)



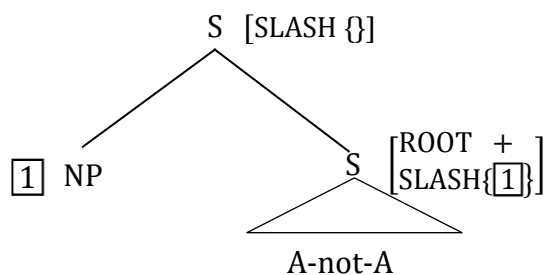
In HPSG, we can capture the idiosyncrasies of the A-not-A form by specifying a topicalization rule in which the VP of an A-not-A question directly projects an S with a non-empty SLASH value, and the members in SLASH are all specified as topics in Chinese. If S's SLASH contains a singleton set (as follows), this singleton set's member must be co-indexed with the subject of the VP. In doing so, I adopt a lexical approach to the A-not-A predicate, which is suggested as early as Huang (1982) (see also Fan et al. (2014)). Specifically, I assume that the head of the A-not-A VP is a verb with the idiosyncratic form of two reduplicative verbal roots intervened by a negative morpheme. This verb is typed *a-not-a verb*, and a lexical rule can be proposed to capture the verb's formal idiosyncrasies, including that the two verbal roots need only share the initial syllable, the negative morpheme varies according to verb aspect, the verb takes complement NPs on a par with regular verbs, etc. Importantly, the VP expresses the semantics $\lambda p [p = P(x) \vee p = \neg P(x)]$ given the predicate P denoted by the verbal root.

Unlike with *why*-questions, the motivation for assuming a distinction between the topic of the A-not-A form and the subject of the A-not-A form is not conclusive. When both an NP and

speech-act level adverbials such as *jiuijng* ‘honestly’ precede the A-not-A form, the only acceptable order is one where the NP precedes the speech-act adverbial. Given that we have shown that speech-act adverbial scopes outside the question’s speech act, this ordering constraint suggests that it might be better to treat the NP topic of an A-not-A question as extracted. However, this thesis makes no attempt to be conclusive about this issue. The topicalization rule treats all topics as extracted mostly for the sake of simplicity, as the other non-NP adverbials that are topicalized in Chinese are apparently extracted.

Based on this constructional rule, the syntax of an A-not-A question is as follows:

(47)



Once the topicalized subject NP combines with the A-not-A form, it is removed from the set within the resulting sentence S’s SLASH. This can be captured by the topicalization rule I proposed in Chapter 3 that handles multiple topic extraction (repeated below).

(48)

$$\begin{array}{c}
 \left[\begin{array}{l} \text{SYNSEM} \\ \text{IS} \end{array} \left[\begin{array}{l} \text{SLASH } \boxed{1} \\ \text{TOPIC } \boxed{2} \cup \{\boxed{3}\} \\ \text{COMMENT } \boxed{4} \end{array} \right] \right] \rightarrow \\
 \boxed{0}\text{NP} \left[\begin{array}{l} \text{SYNSEM} \\ \text{CONT } \boxed{3} \end{array} \right] \quad \left[\begin{array}{l} \text{SYNSEM} \\ \text{IS} \end{array} \left[\begin{array}{l} \text{SLASH } \{\boxed{0}\} \cup \boxed{1} \\ \text{TOPIC } \boxed{2} \\ \text{COMMENT } \boxed{4} \end{array} \right] \right]
 \end{array}$$

Since topics other than a subject may also freely precede the A-not-A form, the SLASH value is specified as a set union of the subject NP as well as any other topic elements.⁶⁴ This process of ‘appending’ topics one at a time to the left of a slashed S, where each topic removes one set member of SLASH, should be understood to apply recursively. Below is one example illustrating the structure of an A-not-A question with two topics.

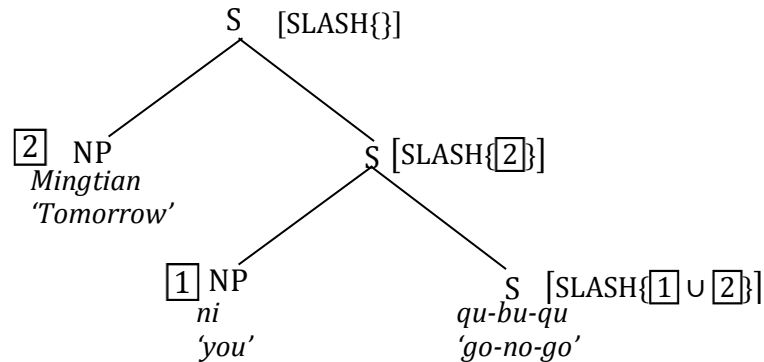
(49) a. *Mingtian ni qu-bu-qu?*

Tomorrow you go-NEG-go

‘Talking about tomorrow, (as for) you go or not?’

⁶⁴ By characterizing the A-not-A form as a slashed S, I am treating the topic subject as being extracted. This is a generalization intended to capture the parallelism with *why*-questions, where topics appear to be indeed extracted. There is no sufficient evidence to show whether the A-not-A question construction involves extraction or not. A non-extracted, alternative analysis, in which a regular subject combines with the A-not-A form, and the subject is specified as a topic, would be equally possible. Nothing in the present thesis hinges upon this matter.

b.



Additionally, the above rule allows speech-act operators such as epistemic adverbs to occur to the left of the A-not-A form. They may either immediately precede the A-not-A form (hence mediating between the A-not-A form and the topics) or precede the topics. This is possible since a speech-act operator requires that the element it modifies bears the sentential force. The rule (48) allows several root clauses to be specified with [SLASH {X}] and consequently to bear sentential forces, following Krifka's proposal that the conjoining of speech acts creates a new speech act. Therefore, the speech-act operator may modify the A-not-A form directly, or the intermediate clauses including the A-not-A form and one or more preceding topics.⁶⁵

The difference between the A-not-A form and *weishenme* in topicalization is that in the latter topicalization is optional. (50a) gives an example of a S [SLASH{NP}] *weishenme*-question, whose structure is shown in (50b). (51a) gives an example of a S[SLASH {}] *weishenme*-question, whose structure is shown in (51b).

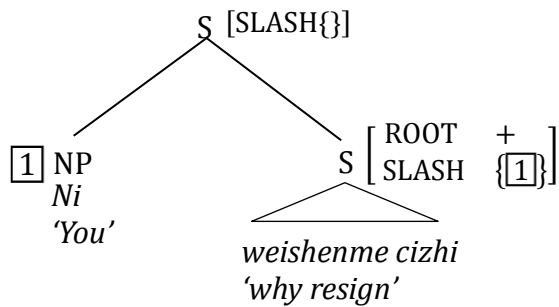
⁶⁵ In terms of pragmatics, an A-not-A question is neutral to either of the two alternatives (Li & Thompson 1981). As such, it is often not compatible with a context where the questioner has a predisposition towards one alternative. This differs from another yes-no question type, *ma*-question (featuring a sentence-final question particle *ma*), which does not seem to have any information structure restrictions (Schaffar & Chen 2001). A *ma*-question does not inherently carry a preference for one of the alternatives, but is compatible with a predisposed use. Tentatively, I believe that the neutral reading for A-not-A questions is related to the way the question form gets grammaticized. A clearly prejudiced use is often associated with a focused constituent. The focus expresses the speaker's assertion, and comes with an epistemic prejudice. A *ma*-question contains a single proposition, without an opposing part. The assertion of the single proposition could express the prejudiced use. On the other hand, an A-not-A question still retains the opposing predicates. Both alternatives are overtly juxtaposed, leaving neither side a favored reading, thereby favoring a neutral reading.

(50) a. *Ni weishenme cizhi?*

You why resign

‘As for you, why you resigned?’

b.



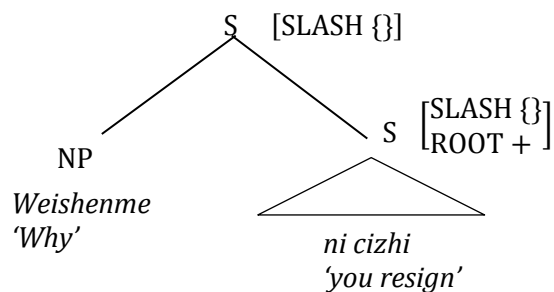
(51)

a. *Weishenme ni cizhi?*

Why you resign

‘Why you resigned?’

b.



On the other hand, the A-not-A form is lexically specified as being S[SLASH{NP}]. In the above, I have specified that the A-not-A form is always [ROOT +], thereby predicting that the question force is directly associated with the A-not-A form. Based on our previous discussion in Chapter 3 about the scoping ability of topics, this crucially guarantees that only topics stay outside

the scope of the speech act of the A-not-A form. Once again, we can apply the interpretational rules for conjoined speech acts.

Given that an A-not-A question can be represented as a structured meaning pair $\langle \phi_{\text{topic}}, \psi_{\text{A-not-A}} \rangle$, the following rule applies:

(52) & refers to the conjunction of speech acts.

$$\text{REQUEST} (\langle \phi_{\text{topic}}, \psi_{\text{A-not-A}} \rangle) \rightarrow \text{REF}_x (\phi_{\text{topic}}) \& \text{REQUEST} (\psi_{\text{A-not-A}} (X))$$

According to this rule, the REF act establishes a novel discourse referent X for the topic of the sentence (such that $\phi(X)$), then X is supplied as an argument to ψ , the predicate derived as the comment of the sentence, yielding a proposition suitable for the REQUEST operator. In (53), the speech act sequence expressed by a sample A-not-A question is given, together with a paraphrase:

(53) a. *Ni xi-bu-xihuan paobu?*

You like-NEG-like run

b. Semantics:

$$\text{REF}_x(\text{you}(x)) \& \text{REQUEST} (\lambda p. [p = \text{love-running}(x) \vee p = \neg \text{love-running}(x)])$$

c. Paraphrase:

‘As for you, do you love running or not?’

With the force attachment theory in place, we are able to apply the account developed in Chapter 3 directly to the whole range of intervention data in A-not-A questions. The following table gives a summary, in which topicalizability draws a neat division line between those scopal elements that are unacceptable and those that are not:

Table 1 A Summary of the Intervention Phenomena in A-not-A Questions

| Topicalizable | | Non-topicalizable | |
|---|-----------------------------------|---|----------------------------------|
| Regular Plural Indefinites; | No Intervention | Focus-sensitive expressions; | Intervention and No Amelioration |
| Temporal and Locative Adverbs; Speech-act level epistemic adverbs; | No Intervention | Modal Verbs; Propositional-level adverbs; VP-level adverbs; | Intervention and No Amelioration |
| Witnessable quantificational DPs; Adverbs of quantification that is witnessable; | No intervention nor amelioration; | Non-witnessable quantificational DPs; Adverbs of quantification that is non-witnessable. | Intervention and No Amelioration |

The current account would also explain why island effects should arise in A-not-A questions. Because the A-not-A form must carry illocutionary force directly, in the same way as the illocutionary force must take scope right after the merge of *weishenme* in a *weishenme*-question, it amounts to saying that an A-not-A question always occurs as a root clause only.

As a result, all embeddings of A-not-A questions under another clause are ruled out. Island effects would thereby be subsumed by this more general ban on embedding. As we see in (54), embedded A-not-A questions lead to unacceptability regardless of whether the embedded clause is a relative, a subject, an adjunct or a complement clause (data repeated from Section 4.2):

(54) a.#*Ni mai-le [ta xi-bu-xihuan] de shu?*

You buy-ASP she like-NEG-like *REL* book

#‘Did you buy the book [that he likes or not]?’

b.#*[Ni mai-bu-mai zhei-ben shu] zui hao?*

You buy-NEG-buy DEM-CLF book most be.good

#‘[That you buy this book or not] is the best?’

c.#[*Ni qu-mei-qu yihou*] *ta bu gaoxing-le?*

You go-NEG-go after she NEG be.happy-PRF

#‘She wasn’t happy [after you went or not]?’

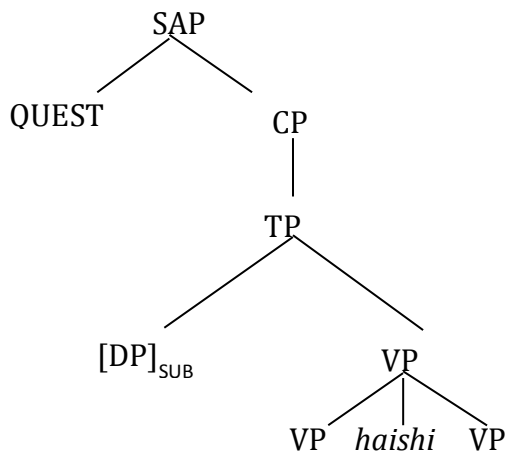
d. #*Ni xihuan [ta lai-bu-lai]?*

You like he come-NEG-come

#‘You like he to come or not?’

On the contrary, the disjunctive question type, *haishi*-questions, selects for a regular subject and behaves on a par with non-*why* *wh*-questions. In (55), I present the syntax of *haishi*-questions in MP terms. The *haishi*-connective (parallel to the interrogative OR in English disjunctive question) conjoins two VPs and projects a higher VP, which in turns selects a subject. This resulting regular CP merges with a speech act operator QUEST to project an SAP.

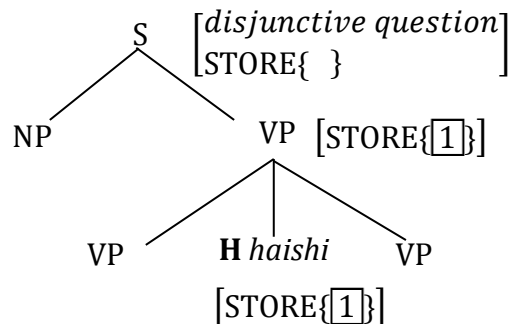
(55)



In HPSG terms, I follow a treatment suggested in Yoo (2000), where the *haishi* operator is a head carrying the interrogative feature that is specified in its STORE. The *haishi* HEAD takes two non-head daughter conjuncts and projects to a higher VP. In this way, the STORE value

percolates up until the S level, where STORE is emptied and the question force is released. This is represented in (56) below:

(56)



Although the exact reason for which the A-not-A form starts to have idiosyncratic semantics is at this point still a matter of hypothesis, it is plausible to suggest that the emergence of the A-not-A form follows a process of conventionalization as well. This is evidenced by the fact that, similar to *weishenme*, the A-not-A form is phonologically more fused than all other alternative question constructions, suggesting a series of stages where phonological reduction and meaning conventionalization occur simultaneously.

Historically, it has been suggested (Zhu 1985) that A-not-A questions developed from VP₁-neg-VP₂ questions.⁶⁶ In the latter construction (still productive today), two VPs are juxtaposed to each other and separated only by the negative morpheme with no connectives such as *haishi*. Although the VPs need not be identical with each other, there are clear tendencies and, ultimately, a grammaticized requirement for them to denote semantically opposite alternative properties. At an earlier stage, each VP may have contained an object, but, in its current use, the first VP contains a bare verbal head. Importantly, island effects surface, such that this VP₁-NEG-VP₂ question may be seen as a proto-form of the A-not-A question:

⁶⁶ In making this claim, I follow McCawley (1993) and Gasde (2006) in assuming that VP₁-neg-VP₂ questions are distinct from A-not-A questions, and the two constructions do not form part of a larger A-not-A question family, contrary to the assumptions by earlier typology literature (e.g. Li & Thompson 1981).

(57) a. *Zhangsan you jiating meiyou jiating?*

Zhangsan have family NEG-have family

‘Does Zhangsan have a family or not?’

b. *??Ta geng xiangyao [you jiating mei-you jiating] de shu?*

He more prefer have family NEG-have family REL person

‘Does he prefer the people that have a family or do not have a family?’

Also, even when embedded under a complement, the VP₁-NEG-VP₂ question is worse than its *haishi*-question counterpart, albeit still marginally acceptable:

(58) *??Ni geng yuanyi [Zhangsan you jiating meiyou jiating]?*

You more prefer Zhangsan have family NEG-have family

‘Would you prefer that Zhangsan has a family or Zhangsan does not have a family?’

Moreover, VP₁-NEG-VP₂ questions are un-iterable, similar to A-not-A questions yet differing from *haishi*-questions:

(59) a. *Ni xiang qu meiguo haishi bu xiang qu meiguo haishi wusuowei?*

You want.to go America HAISHI NEG want.to go America HAISHI do.not.care

‘Do you want to go to America, or not want to go to America, or you don’t care?’

b. *#Ni xiang qu meiguo bu xiang qu meiguo wusuowei?*

You want.to go America NEG want.to go America do.not.care

Intended: ‘Do you want to go to America, or not want to go to America, or you don’t care?’

The mixed behaviors of this VP₁-NEG-VP₂ construction would be accounted for if it represents an intermediate stage along a conventionalization continuum. On one hand, it is a

yes-no question (*i.e.* a request for the acceptance or rejection of a proposition). On the other hand, it retains some of the residues of a full disjunctive question, such as the ability to allow for overt alternatives (as can be seen by the fact that the alternatives need not follow the positive-before-negative order).

For A-not-A questions, the reduplicative predicative phrases become frozen and no longer range over overt alternatives. The possibility for this transformation to arise might be traced back to the fact that, when a negative predicate is preceded by and only by a topical element, the proposition formed by combining the negated predicate with the topic is truth-conditionally equivalent to a sentential negation over a propositional argument. For example, the following two propositions are truth-conditionally equivalent:

- (60) p_1 = ‘As for you, it is NOT the case that you love running.’ (sentential negation)
 p_2 = ‘You do NOT love running.’ (constituent negation)

In p_1 , the topic takes the widest possible scope and does not scope inside sentential negation. Since there are no further scopal elements, the two types of negation both take only the VP in its scope. Normally, sentential negation and constituent negation would not be equivalent in the presence of a scope-taking element. This is evident, for example we can compare p_1 and p_2 in (61):

- (61) p_1 = Most people did NOT come.
 p_2 = It is NOT the case that most people came.

The equivalence in (60) suggests that even at the stage when the A-not-A form still ranges over a disjunctive set of predicates $\{Pred, not-Pred\}$, it might be interpreted as a disjunctive set of propositions $\{p, not-p\}$, where p corresponds to the positive predicate $Pred$ and $not-p$ corresponds

to *not-Pred*. Once this reanalysis is possible, an A-not-A question can be seen as a request for the acceptance or rejection of a proposition, and no longer functions as a disjunctive question. This is what McCawley (1994) suggests, who claims that the A-not-A form may be grammaticized into denoting proposition-level function but still obligatorily taking the VP scope. Such grammaticized constraint is reminiscent of the diachronic conventionalization that A-not-A questions went through.

4.4 Other Accounts

Below I discuss several alternative approaches to A-not-A questions in comparison with my account.⁶⁷ I have done away with positing a phonologically empty interrogative operator in A-not-A questions. One way to come to the defense of Huang's covert NQ operator theory is to justify NQ's existence by showing that other languages have overt equivalents of NQ. This argument has been taken up initially by Huang himself (Huang 1982; 1991), and adopted by others (Lee & Cole 1997; Hagstrom 2006; Huang et al. 2009). Specifically, it has been argued that NQ finds reflexes in other Sinitic languages. For example, in Southern Min, *kam* is argued to be a surface realization of NQ:

⁶⁷ Almost all previous theories on the syntax and the semantics of A-not-A questions are formulated in structural terms, crucially relying on covert movement to derive island effects and intervention effects. Two related papers, Fan et al. (2015) and Wang et al. (2015) are one exception, in which a constraint-based HPSG framework is proposed and the semantics of the A-not-A form is captured in terms of constructional schemata, which makes it well suited for capturing the syntactic distinctions among different alternative constructions. But the paper pays no attention to intervention effects at all, and does not address how A-not-A questions differ from *haishi*-questions semantically.

Another nongenerative treatment can be found in the recent work of Duan (2015). Duan adopts a Higher-Order Linear Categorical Grammar approach. Hers are among the very few available in the literature that discusses intervention effects in both A-not-A questions and *haishi*-questions. However, Duan considers the two types of intervention as patterning together, and believes that the sole distributional difference between the two alternative question types lie in the ability to induce islands. My approach is intended to cover the widest empirical range and simultaneously provide an accurate and comprehensive empirical picture of intervention effects.

(62) *Li kam beh lai?*

You Q want come

‘Do you want to come or not?’

Kam directly attaches to the positive predicate without an accompanying negative predicate. Crucially, Huang argues that particles such as *kam* are always in complementary distribution with an A-not-A form. As (63) shows, the co-occurrence of *kam* and a reduplicative V-NEG-VP form is not possible in Southern Min:

(63) #*Li kam bat-m-bat jit-e hakseng?*

You Q know-NEG-know this-CLF student

‘Do you know this student or not?’

Consequently, Huang believes that, in Southern Min, *kam*-questions are used in the stead of A-not-A questions, and *kam* is the reflex of Mandarin’s NQ. If the A-not-A form surfaces as a [*kam* + *Pred*] sequence in another closely related language, Huang argues, then it is natural to assume that NQ attachment is real. It would happen in syntax, and in some languages the phonological Spellout takes the form of a reduplication, in other languages NQ is overtly spelled out.

However, this position crucially hinges upon the prediction that in all the Sinitic languages where there are *kam*-class adverbials, they should always be in complementary distribution with the A-not-A form. Despite the unambiguously testable nature of this claim, few authors take up the issue, in part due to the scanty overall research in Sinitic languages other than Mandarin. Nevertheless, a cursory investigation of the limited available data already falsifies Huang’s prediction.

In Shanghainese (a Wu language spoken in Shanghai), a pre-verbal particle *a* functions similar to the Southern Min *kam*, occurring in an alternative question construction such as the following (Qian 2002):

(64) *Nong a tɛɪ (va)?*

You A go (Q)

‘Do you go or not?’

Importantly, it is also possible to use *a* in conjunction with an A-not-A reduplicative predicate. (65) is claimed to be in free variation with (65) (Xu and Shao 1998; Qian 2002; You 2004):

(65) *Noŋ a tɛɪ-vəʔ-tɛɪ?*

You A go-NEG-go

‘Do you go or not?’

Moreover, *a* may also occur in an alternative question construction of the *pred-neg* form (where the sentence-final Q particle *la* expresses a stronger speaker attitude towards confirming the previous proposition, Qian 2002):

(66) *Noŋ a tɛɪ - vəʔ la?*

You A go-NEG Q

‘Frankly, are you going or not?’

If *a* really acts in lieu of the A-not-A form, it certainly cannot appear in a separate, incompatible alternative construction. Note that Shanghainese is probably among the Wu languages most influenced by Mandarin. The use of *a* in marking alternative constructions is in

decline, given that Mandarin does not have a similar morpheme. In a more archaic Wu language, Suzhounese (spoken in Soochow, a smaller and less urbanized city 62 miles north of Shanghai), *a* may co-occur with an even wider array of the ‘truncated’ alternative question constructions that differ from the A-not-A question construction. For example, Li (1998) identifies the following possible collocations:

(67) a. *Nɔŋ a ɛɔdr ɡəʔ-zəʔ dɔli?*

You A know DEM-CLF sense

‘Do you know this sense or not (*i.e.* does this make sense to you or not?)’

b. *Nɔŋ a ɛɔdr - vəʔ- ɛɔdr ɡəʔ-zəʔ dɔli ?*

You A know-NEG-know DEM-CLF sense

c. *Nɔŋ a ɛɔdr ɡəʔ-zəʔ dɔli vəʔ la?*

You A know DEM-CLF sense NEG Q

d. *Nɔŋ a ɛɔdr ɡəʔ-zəʔ dɔli vəʔ ɛɔdr?*

You A know DEM-CLF sense NEG know

e. *Nɔŋ a zi ɛɔdr ɡəʔ-zəʔ dɔli vəʔ la?*

You A FOC know DEM-CLF sense NEG Q

Finally, Cole & Li (1997) also identifies a co-occurrence pattern in Teochew, a close relative to the Southern Min. Teochew has a reflex of the Southern Min’s *kam*. A *kam*-type alternative question runs as follows (Cole and Lee 1997, 192):

(68) *Ka-Question*

Ah Meng ka suka ji-bun zi?

Ah Meng KA like DEM-CLF book

‘Does Ah Meng like this book or not?’

The following illustrates that there is also an A-not-A question construction in Teochew:

(69) *A-Not-A Question*

Ah Meng su-m-suka ji-bun zi?

Ah Meng like-NEG-like DEM-CLF book

‘Does Ah Meng like this book or not?’

Finally, *ka* may appear together with an A-not-A form, allowing a pattern that echoes Shanghainese/Suzhounese:

(70) *Ah Meng ka su-m-suka ji bun zi?*

Ah Meng Q like-NEG-like DEM-CLF book

‘Does Ah Meng like this book or not?’

Therefore, the fact (if Huang’s claim is true) that the Southern Min *kam* disallows co-occurrence could just reflect a pattern of Southern Min’s more recent shifting towards Mandarin as a result of intense language contact. This is unsurprising, given that Southern Min is less archaic than the more isolated Teochew. This would be a similar pattern to the contrast between a more conservative Suzhounese and a more Mandarin-ized Shanghainese, albeit Shanghainese still retains a few co-occurrence patterns.

In sum, we are unable to corroborate Huang's generalization that the *kam*-class adverbials are in complementary distribution with the A-not-A form. This argues against *kam*-class adverbials being the overt reflexes of a covert NQ operator in A-not-A questions. As for the exact nature of these adverbials, I have to be inconclusive here. Apparently such adverbials are able to combine with either a single copy of the predicate or a reduplicated A-not-A form. It might be possible that such adverbials express certain epistemic attitudes that are pragmatically associated with an A-not-A question, and this pragmatic association might be strengthened and grammaticized. Or it might be possible that the adverbial takes part in a certain division of labor with the A-not-A form, in which case the A-not-A form in certain Sinitic languages is not exactly the same as in Mandarin Chinese.

So far I have shown that there are problems with finding any surface realizations for the empty NQ operator. A separate issue is that, assuming NQ exists, whether it should move covertly or not. For proponents of a structural approach to A-not-A questions, the strongest evidence for covert movement comes from the parallelism between A-not-A questions and *weishenme*-questions. Until recently, the predominant view among generative syntacticians is that *weishenme* 'why' undergoes covert movement in order to get licensed. If Huang is correct and the NQ operator residing in the A-not-A part also moves covertly at LF, it immediately follows that *weishenme* and NQ should pattern together and contrast with other *wh*-constituents, which are believed to be unselectively bound. The difference in the binding mechanisms would then explain why *only* the *weishenme*-question and A-not-A question appear to induce intervention effects.

In sum, the attractiveness of the covert movement approach is that it holds out the potential of a strong generalization. Nevertheless, in view of the recent proposals by Ko and others

regarding the direct merge nature of *weishenme*, this very generalization would have to be maintained at the very expense of a covert movement analysis. If we are to assume, in the presence of crosslinguistically robust evidence, that the *why*-adjunct in different languages directly occupies the scope position rather than move to take scope, the parallelism would then constitute evidence *against* positing covert movement for A-not-A questions.

To date there has been no discussion about the implications that the ‘high merge’ nature of *why* would carry for A-not-A questions. But it would be reasonable to think of maintaining a structural approach without assuming covert movement, by treading on Ko’s line and positing that the A-not-A form also merges externally at [Spec, CP]. However, there are problems with this arrangement. Although *weishenme* merges alone, NQ has to attach to a host phrase in order to be spelled out together. What NQ combines with are all predicative elements, such as verbs, auxiliaries and modals, which occupy VP-level positions. If NQ itself does not move, it would have to be these verbal categories that move to the operator at overt syntax. But it is not clear what attracts such movement. Hence, it might be problematic to try to redress Huang’s theory by maintaining some sort of structural parallelism between NQ and *weishenme*.⁶⁸

In sum, the crucial aspects of a structural approach to A-not-A questions cannot stand up to closer scrutiny. There is no reason to assume that the negation in the A-not-A form is purely phonological, nor is there evidence that an empty operator undergoes covert movement or even that this operator exists.

⁶⁸ The high merge theory further calls into question the view that *kam* is a reflex of the A-not-A form. It is a well known fact that *kam* exhibits patterns typical of a VP-adverbial (Huang 1982; Hagstrom 2006). Furthermore, recall that in Mandarin *weishenme* precedes the sentential subject by default. This is what we would expect given *weishenme*’s purported high position. As *weishenme* directly merges at [Spec, CP], a subject in its normal structural position should be below [Spec,CP]. The [subject < *weishenme*] order is possible, because subjects may undergo long-distance topicalization over [Spec, CP]. If *kam* parallels *weishenme*, we would predict that the default order between the sentential subject and *kam* to be [*kam* < subject]. However, as a matter of fact *kam* consistently falls in the position immediately preceding the sentence predicate and following the subject. Therefore, we conclude that *kam* merges at the VP modifier position, and does not share *weishenme*’s high merge property.

Finally, I consider a semantic account of intervention effects developed in Wu (1997). Wu shares the common intuition that an A-not-A question expresses two exhaustive alternatives. In his words, an A-not-A question is a nonempty partition of the possible states of affairs into two mutually exclusive and jointly exhaustive cells. To answer such a question, a choice function is assigned to pick one of the cells as true and reject the other as false. If a partition creates cells that are not mutually exclusive, or not jointly exhaustive, then ungrammaticality will arise.⁶⁹

According to Wu (1997), to explain intervention effects we do not need to resort to structural constraints involving covert movement, because intervention effects belong to exactly those cases where the requirement for exhaustivity cannot be satisfied. More precisely, Wu hypothesizes that quantifiers, when preceding the reduplicated A-not-A part, have scope over negation, due to the scope isomorphism principle. As a result, Wu derives the same reading for the A-not-A question in (71) as Huang does in (39):

(71) #*Henshaoren hui-bu-hui qu?*

Few person will-NEG-will go

' $x \in \{will\ go, will\ not\ go\}$, few people x ?'

This means (71) expresses the following two propositions:

(72) {*Few people would go, Few people wouldn't go.*}

As Wu point outs, the two propositions are not jointly exhaustive. That is, partitioning may generate more than two cells. In this sense, intervention effects do not really involve intervention, but follow from a general contradiction. While Wu's account shares the fundamental aspects of

⁶⁹ Exhaustive partition is true of all yes-no question types and Chinese *haishi*-questions. As such, Wu's account is not tailor-made to the semantics of A-not-A questions. I will return to this issue in Section 4.5.

my theory in believing that intervention effects are semantic in nature and an A-not-A question expresses an exhaustive partition, there are notable differences. Wu does not notice that intervention effects are split among quantifier types. It is also not clear how his theory might account for such split should he be aware of the split. For example, when the quantifier is *duoshu ren* ‘most people’, given that Wu treats such quantifier as a subject that expresses the canonical generalized quantifier meaning, he would have to derive the same non-exhaustivity and hereby falsely predicts the occurrence of intervention effects.

On a conceptual note, Wu’s theory also crucially hinges upon the notion of scope isomorphism. While I agree with Wu that the quantifier takes wide scope over the A-not-A form when it linearly precedes the A-not-A form, I come to this conclusion without the need for scope isomorphism. In Chapter 3, I already showed that scope isomorphism simply fails to apply as a general rule in the Chinese scopal interaction (or to say the very least, its application has many exceptions). Intervention effects of the *weishenme*-question receive a simple explanation if the scope isomorphism is given up and the interaction between topics and force operators is taking place above the propositional-level scopal elements. A similar trajectory is taken here for A-not-A questions.

Probably most severely, Wu shares with other structural approaches the problem of failing to distinguish A-not-A questions from *haishi*-questions or virtually any other alternative question types. Wu’s is based on the assumption that an A-not-A question is a conjunction of an affirmative and a negative yes/no question (Wu 1997, 470), each formed by combining the subject quantifier with either the positive or the negative predicates (whose motivation Wu simply assumes and does not elaborate on). In such case, all conjunction that leads to non-exhaustive partition will be ruled out as ungrammatical by Wu. Since scope isomorphism

applies in determining the scope relation between the quantifier and negation, and scope isomorphism is argued to be a general rule in Chinese, it should equally apply to a *haishi*-question. Therefore, a *haishi*-equivalent to (71), represented as follows, should yield the same conjunction of a positive as well as a negative yes-no question.

(73) *Henshao ren hui lai haishi bu-hui lai?*

Few person will come HAISHI NEG-will come

‘Will few people come or will few people not come?’

Assigning a uniform denotation to all these alternative question constructions means that there will be no explanations whatsoever of the fine-grained differentiation among these constructions (*e.g.* only the A-not-A form exhibits parallel patterns with *weishenme*). In other words, his account overgenerates.

Indeed, exhaustivity is very likely a common requirement for all Chinese alternative question types. The difference lies in the scopal behaviors between the yes-no operator and the quantifier, which determines which two exhaustive alternatives are generated. We can see this more clearly by the answer patterns. In *ma*-question, the yes-no operator *ma* scopes above the quantifier.

(74) *Duoshu ren hui lai ma?*

Most person will come MA

‘Is it the case that most people will come?’

Bu. Yiban ren hui-lai.

No. Half person will-come

‘No. Half of the people will come.’

In an A-not-A question, quantificational topic outscopes the yes-no operator.

(75) *Duoshu ren hui-bu-hui lai?*

Most person will-NEG-will come

‘For most people, will they come or not?’

Bu. Tamen bu-hui lai.

No. They NEG-will come

‘No, they won’t come.’

#Bu. Yiban ren hui-lai.

No. Half person will-come

‘No. Half of the people will come.’

Finally, a *haishi*-question is a disjunctive question with quantificational subjects. The disjunctive operator takes scope under the quantifier, leading to two non-exhaustive alternatives, unlike the previous two. Intervention effects in *haishi*-questions will be the subject of the next section.

4.5 *Haishi*-questions and Intervention Effects

In his so-called modular approach, Huang (1988; 1991) puts forward an argument that *haishi*-questions and A-not-A questions are licensed differently. Huang does not explicitly say what mechanism licenses *haishi*-questions. However, his endorsement of the unselective binding framework (as in his later works such as Huang et al. 2009) leaves little doubt that covert movement is not involved in licensing.⁷⁰ Hagstrom (2006) provides a more detailed account of the licensing of *haishi*-questions, in which an alternative question operator merges *in situ* at the

⁷⁰ Huang (1982) proposes, on the other hand, that the *haishi*-phrase moves covertly to [Spec, CP] to check a [+wh] feature on *haishi*, which marks *haishi* as an interrogative disjunction against *huozhe*. Huang does not maintain this view in his later work, nor is it clear what differences exist between *haishi*-questions and A-not-A questions under this movement analysis of *haishi*.

[Spec, CP] position and binds the entire predicate that includes both the positive and the negative part. In this way, *haishi*-questions behave exactly like regular *wh*-questions. Importantly, *haishi*-questions do not induce strong island effects, as we see in (76):

- (76) a. *Ni xihuan [renshi haishi bu-renshi ni] de ren?*
 You like know HAISHI NEG-know you REL person
 ‘Do you like the person that you know or the person that you do not know?’
- b. *Ni [yinwei Lisi lai haishi bu-lai] shengqi ne?*
 You because.of Lisi come HAISHI NEG-come be.angry Q
 ‘Are you angry because Lisi came or because he didn’t?’
- c. *[Wo qu haishi bu-qu Meiguo] bijiao hao?*
 I go HAISHI NEG-go America relatively be.good
 ‘Is it relatively good that I go to America or that I don’t?’

Recall that a non-*why wh*-question also induces no island effects, such as (77):

- (77) a. *Ni xihuan [yinwei shenme renshi ni] de ren?*
 You like because.of what know you REL person
 ‘Do you like the person that you know or the person that you do not know?’
- b. *Ni [yinwei Lisi yinwei shenme lai] shengqi ne?*
 You because.of Lisi because.of what come be.angry Q
 ‘Are you angry because Lisi came or because he didn’t?’
- c. *[Wo yinweishenme qu Meiguo] bijiao hao?*
 I because of what go America relatively be.good
 ‘Is it relatively good that I go to America or that I don’t?’

The fact that *haishi*-questions pattern together with regular *wh*-questions in terms of island effects is a welcome sign for Huang. This is because movement is considered a last resort operation by Huang (1982). If unselective binding is available, movement will not be an option for syntactic licensing. In an A-not-A question, the NQ operator is believed to function similarly to a *wh*-adjunct such as *weishenme*. A *wh*-adjunct cannot be unselectively bound. Therefore, NQ undergoes movement as a last resort. If *haishi*-questions are licensed via unselective binding just like *wh*-arguments, it follows that no covert movement would occur, hence there should be no island effects.

However, if *haishi*-questions really pattern with *wh*-questions and do not involve covert movement, we predict that intervention effects shouldn't arise either, given that only movement causes intervention. This prediction, unlike the prediction regarding islands, fails to be borne out. As we see in (78), *haishi*-questions are odd when the predicates are preceded by quantifiers.⁷¹

(78) a. ??*Daduoshu ren xiang qu haishi bu-xiang qu?*

Most person want go HAISHI NEG-want go

'Did most people want to go or not want to go?'

b. ??*Henshao ren/meiyou ren xiang qu haishi bu-xiang qu?*

Few person/no person want go OR NEG-want go

'Did few people/nobody want to go or not want to go?'

⁷¹ Here by intervention I mean mildly unacceptable/marginally acceptable judgments. For most speakers I have consulted, this type of intervention is less severe than the intervention we find in A-not-A questions. Also, proper contexts often lead to significant judgment improvement. In a nutshell, I characterize the low acceptance of *haishi*-questions in quantificational environments as a pragmatic anomaly phenomenon. It arises because the utterance of *haishi*-questions does not partition the states of affairs exhaustively, in contrast to what is expected under normal circumstances. I show that when explicit contextual manipulation causes the partition to be exhaustive, intervention effects disappear.

c. ??{*Zhishao san-ge ren/Chaoguo san-ge ren/san-ge ren*}

{At least three-CLF person/more than three-CLF person/three-CLF person}

xiang qu haishi bu-xiang qu?

want go HAISHI NEG-want go

‘Did (at least/more than) three people want to go or not want to go?’

If we assume that A-not-A questions and *haishi*-questions differ only in their syntactic licensing mechanisms, it would be mysterious to us why intervention arises for *haishi*-questions. In the following, I argue that the intervention data can be readily understood if we analyze *haishi*-questions as disjunctive questions that require the alternatives they denote to be jointly exhaustive and mutually exclusive. This is exactly what Wu has proposed for A-not-A questions. In other words, I propose that Wu’s (1997) theory is an apt account of intervention effects in *haishi*-questions, instead of A-not-A questions.

Before applying Wu’s theory, I briefly discuss the semantics of the *haishi*-predicate. As is well established in the literature, *haishi* expresses disjunction over predicates and the *haishi*-predicate takes scope at the VP level. Unlike the logical disjunction (Boolean disjunction) operator *huozhe* in Chinese, *haishi*-disjuncts must carry interrogative semantics. This semantics can be implemented in multiple ways. For example, von Stechow (1991) and Romero & Han (2003) posit that interrogative disjunctive predicates contain a *wh*-element that has the semantics of a choice function. The larger structure that contains this choice function-selected disjunctive *wh*-phrase goes step to step until the question force is released at the root level. Alternatively, Erlewine (2014) proposes that *haishi*-disjuncts denote alternatives of predicates that in turn percolate up into alternatives of propositions up until the root level. In both approaches, it is assumed that a base-generated Q operator at the root level combines with alternative propositions

and derives the semantic value of questions for *haishi*-questions (Romero & Han 2003). As this base-generated Q operator binds the disjunctive predicate at a distance, the Q operator always takes scope at the root clause. Alternatively, the predicate is bound by a question operator *in situ* and the question feature percolates up from the predicate level to the root clause level, until the question force is attached to the proposition. I will assume the choice of implementations is a matter of taste. Crucially, the *haishi*-predicate differs crucially from the A-not-A form, in that the *haishi*-predicate takes scope in the same manner as regular *wh*-phrases, whereas the yes-no function of the A-not-A form always takes scope locally.

The semantics laid out above shows that in a *haishi*-question, as in a regular *wh*-question, the interrogative feature percolates all the way up until it reaches the root level. In a complex sentence consisting of a matrix clause and an embedded clause, the embedded clause does not release the sentential question force. This correctly predicts that island effects do not arise for *haishi*-questions, as illustrated in (79). This is because nothing prevents the interrogative feature from propagating beyond a relative clause or a subject clause.

(79) *Ni xihuan [renshi haishi bu-renshi ni] de ren?*

You like know HAISHI NEG-know you REL person

‘Do you like the person [that knows you or not]?’

Now we follow Wu’s argument and add an exhaustivity condition to the interpretation of *haishi*-questions:

(80) A *haishi*-question performs a nonempty partition of the possible states of affairs into two mutually exclusive and jointly exhaustive cells.

(80) enables us to explain the intervention in (81) right away, because the partition provided by the *haishi*-question in (81) contains two cells that are *not* jointly exhaustive.

(81) ??*Daduoshu ren xiang qu haishi bu-xiang qu?*

Most person want go HAISHI NEG-want go

The propositions are as follows:

{*Most people want to go, Most people don't want to go.*}

Wu's theory predicts that the question in (81) can be felicitously uttered in a context where the two situations described by the opposing alternatives are indeed jointly exhaustive. This would be a context in which we believe that the majority of people will choose one of the two options. Imagine a context where people are discussing whether to attend a party. It is determined that they will act collectively and they will follow the majority principle, so that they vote for going or not going, and they will take whichever option that gets more vote. In this scenario, it is known to all that the majority of people either want to go or not, but they will have to take one of the two sides. The third option (*i.e.* none of the two options reaches majority in the vote, such as the vote is tied or some voted for abstention), which is logically possible, is unavailable.

Under this new context, (81) does sound better. Indeed, if the context is manipulated to make it easier to find an exhaustive reading, the sentence improves:

- (82) (The European Union meet today to vote for whether the current refuge quota is lifted or not. They are expected to reach a deal by tonight, regardless of whether the deal is to let in more refugees or to keep putting a quota on them)

Dadoushu ouzhou guojia tongyi haishi bu tongyi jiena gengduo nanmin?

Most Europe country agree HAISHI NEG agree take.in more refugee

‘Did most European countries agree to take in more refugees or not?’

Finally, (83) provides clear evidence that this analysis is on the right track, as when the opposing predicates are controlled to favor an exhaustive partition of the state of affairs, no intervention arises as in the following.

- (83) *Ni zhi xihuan yigeren paobu haishi bu zhi xihuan yigeren?*

You only like alone jogging HAISHI NEG only like alone

‘Is it the case that you only wants to go jogging alone or you do not only want to go jogging alone?’

We can test whether a particular alternative question type is a yes-no question or a disjunctive question by the answerhood patterns. Based on my account, when an A-not-A question occurs with the quantified phrase *duoshu ren* ‘most people’ in (84), the two alternatives that this question generates are such that either one particular group of people collectively come or collective not come. In (85), when a *haishi*-question occurs with *duoshu ren* ‘most people’, the situation is such that either most people come or most people will not come. Therefore, my theory correctly predicts that a negative answer that is followed up with *Half of the people will come* should be rejected for both questions.

(84) A: a. *Duoshuren hui-bu-hui lai?*

Most person will-NEG-will come

‘For most people, will they come or not?’

B : #*Bu. Yiban ren hui lai.*

‘No. Half of the people will come.’

(85) A : *Duoshu ren hui lai haishi bu-hui lai?*

Most person will come HAISHI NEG-will come

‘Will most people come or will most people not come (*most* outscopes negation)?’

B : #*Bu. Yiban ren hui lai.*

‘No. Half of the people will come.’

When we are using a *ma*-question, the same follow-up to a negative answer becomes acceptable. This is seen in (86).

(86) A: *Daduoshu ren dou hui-qu ma?*

Most person DOU will-go MA

‘Will most people come or not (negation outscopes *most*)?’

B: *Bu. Yiban ren hui-qu.*

No. Half person will-go

‘No (=it is not the case that most people like driving). Half of the people will go.’

This is what we expect, given that the question particle *ma* takes a proposition within its scope as input, and outputs a yes-no function that carries with it a speech act meaning (Cheng 1991).

Furthermore, both A-not-A questions and *ma*-questions are answerable by *bu* ‘no’, suggesting that they express a yes-no question in contrast with a disjunctive question. Notably, a *haishi*-question cannot be answered by *bu*. A negative answer has to provide the entire negated predicate:

(87) a. *Daduoshu ren dou xi-bu-xihuan kaiche?*

They DOU like-NEG-like drive

‘Do they like driving or not?’

Bu xihuan. / Bu.

NEG like. / NEG. (=None of them likes to drive.)

b. *Daduoshu ren dou xihuan kaiche ma?*

Most person DOU like drive ma

‘Do most people like driving or not?’

Bu xihuan. / Bu.

NEG like. / No. (=None of them likes to drive.)

c. *Daduoshu ren dou xihuan kaiche haishi bu-xihuan kaiche?*

Most person DOU like drive OR NEG-like drive

‘Do most people like driving or do they not like driving?’

Bu xihuan. / ??Bu.

NEG like. /NEG. (=None of them likes to drive.)

Another type of A-not-A question, where the reduplication is expressed on the *shi*-cleft, also requires that the yes-no function operates on the entire quantified proposition. Again, the possible answer in B corroborates my semantic analysis.

(88) A : *Shi-bu-shi daduoshu ren dou hui lai?*
 COP-NEG-COP most people DOU will come

‘Is it the case that most people will come?’

B: *Bu. Yiban ren huilai.*

‘No. Half of the people will come.’

4.6 Summary

In this chapter I propose a new characterization of Chinese A-not-A questions that restricts a yes-no function to the VP scope. Specifically, two opposite VP predicates directly project two propositions respectively, before the question force is attached to the propositions and performs the request that one of the binary truth values of the proposition be chosen. The equivalence relation between the proposition domain and the predicate domain entails that any quantifier that is configurationally higher than the predicate level has to scope out of the question force, and no quantifiers may pry into the VP-denoted proposition. This conventionalization has been informally proposed by McCawley (1994), in which he suggests that the yes-no function is restricted to a VP scope. In this thesis, this intuition is captured by ‘closing in on’ the speech act, which makes the speech act of an A-not-A question obligatorily take VP scope.

This theory unifies *why*-questions and A-not-A questions. The previously observed island and intervention effects common to both question types are explained in a uniform, semantic account. In essence, the parallelism between the two interrogative constructions stems from their conventionalized, idiosyncratic meaning aspect: that is, the interrogative elements in both constructions are propositional modifiers: they are directly interpreted at their scope positions that are outside the propositions they modify, instead of fitting into the logical representations of the

propositions. This property in turn leads to rootedness of the two question types. Both island and intervention effects follow from the obligatory rootedness of the two question types.

The semantic account, as it stands, makes it unnecessary to resort to a structural account for the parallelism. In Chapter 3, I already showed that a semantic theory dispenses of the need to posit the existence of covert movement. By addressing the peculiarities of *why*-questions using principles from the meaning component only, the semantic theory allows for a simpler grammar. However, a semantic approach is not complete without addressing the parallelism between *why*-questions and A-not-A questions. This behavioral parallelism has been a strong argument for all structural approaches: since *weishenme* ‘why’ and the A-not-A predicative form do not share identical semantics, a semantic account needs to explain what causes them to induce similar semantic anomalies. However, if covert movement is assumed, we do not need to be concerned about the particular semantics of the two interrogative elements. Their common properties arise simply because a general constraint bans *any* scopal elements from taking scope, given the same environments.

Therefore, it is important that the semantic theory developed in chapter 3 be extended to cover the parallelism. Chapter 4 argues that the reason for which these two question types, but not other question types, exhibit similar behaviors is due to their partially identical semantics: *why*-adjunct and the A-not-A form share the proposition-taking semantic idiosyncrasies not seen in other *wh*-questions.

5 Conclusion

In this thesis, we examine the major locality phenomena in *wh-in situ* from a semantic perspective. The first locality constraint under investigation is strong island effects, in which complex NPs, subject clauses and adjunct clauses do not allow the *in situ wh*-phrases embedded in them to be interpreted as taking wide scope. In my thesis, I highlight one basic characteristic of strong island effects in Chinese: only *why*-questions (and a class of closely related questions, such as *how come*-questions) induce these effects. This raises the issue of whether Chinese strong island effects are the same type of phenomena as the strong island effects hitherto studied in other languages, which typically involve overt filler-gap dependencies.

Huang (1982) proposes that strong island effects in Chinese *in situ* questions and in other languages are fundamentally the same: they are all caused by a constraint that bans movement. The overwhelming majority of approaches that follow Huang (1982) thus seek to explain what causes movement to happen in Chinese *why*-questions. The central idea is to find a natural class such that movement targets this class. For example, one proposal to delimit this natural class claims that the natural class comprises *wh*-adjuncts that cannot be separated into a quantificational operator and its restriction. Another proposal claims that the natural class comprises *wh*-phrases whose quantificational operators have restrictions that range over higher-order sets. Consequently, these restrictions cannot be bound by a choice function. None of these attempts manage to isolate *why* from all the other *wh*-adjuncts. Therefore, they all tend to over-generate.

In Chapter 2, I propose thinking outside the box. I argue that we should deny outright the link between island effects in *in situ wh*-question and island effects in overt constructions. It is

necessary to propose two distinct island effects, because the two set of phenomena exhibit fundamentally different patterns. First, natural classes can be identified for island effects in overt constructions, but identifying natural classes proves notoriously hard for *in situ* island effects. If we do not expect that the two islands effects are derived by the same mechanism, it is plausible that *why*-questions alone may induce *in situ* island effects. Second, by endorsing a separation of two distinct island effects, we are able to explain the idiosyncratic readings we see in Chinese *why*-questions. Specifically, *why* exhibits a proposition-taking semantics, as first noticed by Bromberger (1990). By focusing on this proposition-taking semantics, rather than taking into account the *wh*-adjuncts in general, it is possible to conclude that *why*-questions induce islands because there are no possible interpretations in embedded contexts.

I conclude chapter 2 by observing that *why*-clause fails to embed in complements either.

(1) ??*Ni xihuan [ta weishenme cizhi]?*

You like he why resign

#‘Why_i do you like [that he resigned t_i]?’

b. ??*Zhangsan huaiyi Lisi weishenme cizhi?*

Zhangsan suspect Lisi why resign

#‘Why_i does Zhangsan suspect [that Lisi resigned t_i]?’

Having established a theory of strong islands specific to *why*-questions, I go on to identify that Chinese intervention effects share a crucial characteristic with island effects: both occur only in *why*-questions. In Chapter 3 of my thesis, I attempt to answer the following question: Is there one single intervention effect, or is it the case that what falls under the cover term ‘intervention effects’ are distinct phenomena with distinct underlying mechanisms?

I argue that the answer is the latter. Chapter 3 operates under the assumption that the *why*-intervention effects are a unique phenomenon specific to *why*-questions, on a par with the *why*-induced strong island effects. I make use of the semantics of *why* as a starting point. *Why* is a functor that composes with a proposition as its argument. This means that *why* does not take quantifier scope, but directly scopes above the proposition level. Given that *why* combines with a speech act operator, a function that turns the proposition into a certain imperative act, it follows that any subsentential expression that scopes above *why* must stay outside the scope of a speech act operator.

Ernst (1994; 2002) has shown that speech act adverbials such as *honestly* and *frankly* are able to do this by taking the speech act operator as its argument. Topic is also able to do this, by means of establishing its own act that precedes the speech act of question.

If this is on the right track, then *why* need not undergo movement to take scope since it always scope *in situ*. Quantifiers and focus-sensitive expressions, which have been proposed as interveners of covert movement, do not take wide scope over *why* when they undergo quantifier raising (May 1981) or are interpreted via a focus operator (Rooth 1995). Indeed, I argue that the quantifiers that precede *why* are topic quantifiers, denoting a plural indefinite whose extension is the witness set of the generalized quantifier.

In addition, I show that intervention effects in *why*-questions are not a lone case, but part of a broader phenomenon. I make one short excursion to a construction type of alternative questions, *i.e.* A-not-A questions in Chinese, and shows that they also involve proposition operators that take local scope. Namely, an A-not-A question is a yes-no question that manifests as a yes-no function defined over a propositional argument. This yes-no function is restricted to the VP scope where the VP hosts a constructionalized, phonologically fused reduplicative phrase. In this

sense, the idiosyncratic reduplicative predicative phrase takes scope in the same way as the reason adverb *why*.

The fact that virtually the same class of propositional operators is singled out in both phenomena strongly suggests that the two phenomena do not rely on the traditional accounts built upon quantificational scope taking below the proposition level. My goal goes beyond identifying a specialized theory of *why*'s locality constraints; rather, I aim to offer a first approximation at the whole gamut of intervention effects. It was with this more general goal in mind that I then turn to the better-studied intervention effects involving the interactions of interrogative phrases and quantifiers as well as focus operators. Despite the notorious variability we have seen between languages, the fruitful comparison between Chinese and Japanese/Korean suggests that the semantic solution holds out a promise there.

Finally, it goes without saying that many future studies are urgently needed. For example, it would be important to look into other proposition-level operators to verify the intuition about the root clause constraint. Furthermore, the data uncovered here made us wonder whether we are able to find parallel cases in other languages when we control for environments and language-specific mappings between linear precedence relation and scopal relation. Especially in the case of intervention, it remains to be seen how much crosslinguistic variation can be better accounted for when we start to identify two types of intervention and draw a systematic demarcation line. With that said, I hope this thesis is a meaningful first step forward for us to find a way to integrate the full range of intervention effects into a more general theory of interpretation, involving basic elements such as scope, focus and quantification.

References

- Abrusán, Márta. 2014. *Weak Island Semantics*. Oxford, UK: Oxford University Press.
- Aoun, Joseph, and Yen-hui Audrey Li. 1993. "On Some Differences between Chinese and Japanese Wh-Elements." *Linguistic Inquiry* 24 (2): 365–72.
- Åqvist, Lennart. 1975. "A New Approach to the Logical Theory of Interrogatives: Analysis and Formalization." In *Tubinger Beitrage Zur Linguistik*, edited by Lennart Aqvist. Tübingen: Narr.
- Barwise, Jon, and Robin Cooper. 1981. "Generalized Quantifiers and Natural Language." *Linguistics and Philosophy* 4 (2): 159–219.
- Bayer, Josef. 2006. "Wh-in-Situ." In *The Blackwell Companion to Syntax*, edited by Henk van Riemsdijk Martin Everaert, 376–438. London: Wiley Online Library.
- Beck, Sigrid. 1996. "Quantified Structures as Barriers for LF Movement." *Natural Language Semantics* 4 (1): 1–56.
- . 2006. "Intervention Effects Follow from Focus Interpretation." *Natural Language Semantics* 14 (1): 1–56.
- Beck, Sigrid, and Shin-sook Kim. 1997. "On WH- and Operator Scope in Korean." *Journal of East Asian Linguistics* 6 (4): 339–84.
- . 2006. "Intervention Effects in Alternative Questions." *The Journal of Comparative Germanic Linguistics* 9 (3): 165–208.
- Bellugi, Ursula. 1971. "Simplification in Children's Language." In *Language Acquisition: Models and Methods*, edited by and Elisabeth Ingram Huxley, Renira, 95–119. New York: Academic Press.
- Belnap, Nuel. 1969. "Questions: Their Presuppositions, and How They Can Fail to Arise." In *The Logical Way of Doing Things*, edited by Karel Lambert, 23–37. New Haven: Yale University Press.
- Bickel, Balthasar. 2010. "Capturing Particulars and Universals in Clause Linkage: A Multivariate Analysis." In *Clause Linking and Clause Hierarchy: Syntax and Pragmatics*, 51–102. Amsterdam: John Benjamins Publishing.

- Bildhauer, Felix. 2007. *Representing Information Structure in an HPSG Grammar of Spanish*. University of Bremen doctoral dissertation.
- Boeckx, Cedric. 2012. *Syntactic Islands*. Cambridge: Cambridge University Press.
- Bott, Oliver, Udo Klein, and Fabian Schlotterbeck. 2013. "Witness Sets, Polarity Reversal and the Processing of Quantified Sentences." In *Proceedings of the 19th Amsterdam Colloquium*, 59-66.
- Bromberger, Sylvain. 1992. *On What We Know We Don't Know: Explanation, Theory, Linguistics, and How Questions Shape Them*. Chicago: University of Chicago Press.
- Brown, Roger, Courtney Cazden, and Ursula Bellugi. 1969. "The Child's Grammar from I to III." In *Minnesota Symposia on Child Psychology*, 2:28-73.
- Büring, Daniel. 2003. "On D-Trees, Beans, and B-Accents." *Linguistics and Philosophy* 26 (5): 511-45.
- Cattell, Ray. 1976. "Constraints on Movement Rules." *Language* 52 (1): 18-50.
- . 1978. "On the Source of Interrogative Adverbs." *Language* 54 (1): 61-77.
- Cheng, Lisa. 1991. *On the Typology of Wh-Questions*. Massachusetts Institute of Technology, doctoral dissertation.
- Cheng, Lisa, and James Huang. 1996. "Two Types of Donkey Sentences." *Natural Language Semantics* 4 (2): 121-63.
- Cheng, Lisa. 2009. "Wh-in-Situ, from the 1980s to Now." *Language and Linguistics Compass* 3 (3): 767-91.
- Chierchia, Gennaro. 1993. "Questions with Quantifiers." *Natural Language Semantics* 1 (2): 181-234.
- Choe, Hyon Sook. 1994. "Syntactic Wh-Movement in Korean and Licensing." *Theoretical Issues in Korean Linguistics*, 275-302.
- Chomsky, Noam. 1973. "Conditions on Transformations. A Festschrift for Morris Halle, Edited by Stephen Anderson & Paul Kiparsky, 232-286." New York: Holt, Rinehart & Winston.
- . 1995. *The Minimalist Program*. Cambridge: Cambridge Univ Press.
- Ciardelli, Ivano. 2009. *Inquisitive semantics and intermediate logics*. University of Amsterdam master thesis.

- Ciardelli, Ivano, and Floris Roelofsen. 2011. "Inquisitive logic." *Journal of Philosophical Logic* 40 (1): 55–94.
- Ciardelli, Ivano; Jeroen Groenendijk, and Floris Roelofsen. 2013. "Inquisitive semantics: A new notion of meaning." *Language and Linguistics Compass* 7(9): 459–76.
- Cinque, Guglielmo. 1990. *Types of A Bar-Dependencies*. Cambridge, MA: MIT press.
- Cinque, Guglielmo, and Luigi Rizzi. 2010. *Mapping Spatial PPs: The Cartography of Syntactic Structures*. New York: Oxford University Press.
- Cole, Peter, and Cher Leng Lee. 1997. "Locality Constraints on Yes/no Questions in Singapore Teochew." *Journal of East Asian Linguistics* 6 (2): 189–211.
- Collins, Chris. 1990. "Why and How Come." In *Papers on Wh-Movement*, edited by Lisa Lai-shen Cheng and Hamida Demirdache, 31–45. Cambridge, MA: MIT Press.
- Constant, Noah. 2013. "Witnessable Quantifiers License Type-E Meaning: Evidence from Contrastive Topic, Equatives and Supplements." In *Semantics and Linguistic Theory*, 286–306.
- Duan, Manjuan. 2015. "A Categorical Analysis of Chinese Alternative Questions." In *Proceedings for ESSLLI 2015 Workshop "Empirical Advances in Categorical Grammar,"* 13–33.
- Ebert, Christian, Cornelia Ebert, and Stefan Hinterwimmer. 2014. "A Unified Analysis of Conditionals as Topics." *Linguistics and Philosophy* 37 (5). Springer: 353–408.
- Enç, Mürvet. 1991. "The Semantics of Specificity." *Linguistic Inquiry*, 1–25.
- Endriss, Cornelia. 2009. *Exceptional Wide Scope*. Dordrecht: Springer.
- Endriss, Cornelia, and Stefan Hinterwimmer. 2008. "Direct and indirect aboutness topics." *Acta Linguistica Hungarica* 55 (3-4): 297-307.
- Erlewine, Michael Yoshitaka. 2014. "Alternative Questions through Focus Alternatives in Mandarin Chinese." In *Proceedings of the 48th Annual Meeting of the Chicago Linguistic Society (CLS 48)*, 221–34.
- Ernst, Thomas. 1994. "Conditions on Chinese A-Not-A Questions." *Journal of East Asian Linguistics* 3 (3): 241–64.
- . 2001. *The Syntax of Adjuncts*. Cambridge: Cambridge University Press.
- Erteschik-Shir, Nomi, and Shalom Lappin. 1979. "Dominance and the Functional Explanation of Island Phenomena." *Theoretical Linguistics Berlin* 6 (1): 41–86.
- Fan, Zhenzhen, Sanghoun Song, and Francis Bond. 2015. "An HPSG-Based Shared-Grammar for the Chinese Languages." In *Proceedings of the Grammar Engineering Across Frameworks (GEAF) 2015 Workshop*, 17–24.

- Geurts, Bart, and Frans van Der Slik. 2005. "Monotonicity and Processing Load." *Journal of Semantics* 22 (1): 97–117.
- Ginzburg, Jonathan, and Ivan Sag. 2000. *Interrogative Investigations*. Stanford: CSLI Publications.
- Grewendorf, Günther, and Joachim Sabel. 1999. "Scrambling in German and Japanese: Adjunction versus Multiple Specifiers." *Natural Language & Linguistic Theory* 17 (1): 1–65.
- Groenendijk, Jeroen, and Floris Roelofsen. 2009. "Inquisitive semantics and pragmatics." *Paper presented at the Workshop on Language, Communication, and Rational Agency*, Stanford University.
- Hagstrom, Paul. 2006. "A-Not-A Questions." In *The Blackwell Companion to Syntax*, edited by Martin Everaert And and Henk van Riemsdijk, 173–213. London: Wiley Online Library.
- Heim, Irene. 1982. *The Semantics of Definite and Indefinite Noun Phrases*. University of Massachusetts Amherst doctoral dissertation.
- Hofmeister, Philip, Laura Staum Casasanto, Ivan Sag. 2013. "Islands in the Grammar? Standards of Evidence." In *Experimental Syntax and Island Effects*, edited by Norbert Hornstein and Jon Sprouse. Cambridge: Cambridge University Press.
- Hofmeister, Philip, and Ivan A Sag. 2010. "Cognitive Constraints and Island Effects." *Language* 86 (2): 366–415.
- Huang, James. 1982. *Logical Relations in Chinese and the Theory of Grammar*. Massachusetts Institute of Technology doctoral dissertation.
- . 1988. "Wǒ Pǎo de Kuài and Chinese Phrase Structure." *Language* 64(2): 274–311.
- . 1991. "Modularity and Chinese A-Not-A Questions." In *Interdisciplinary Approaches to Language*, edited by Carol Georgopoulos and Roberta Ishihara, 305–32. Berlin: Springer.
- Huang, James, Audrey Li, and Yafei Li. 2009. *The Syntax of Chinese*. Cambridge: Cambridge University Press.
- Iatridou, Sabine, and Anthony Kroch. 1992. "The Licensing of CP-Recursion and Its Relevance to the Germanic Verb-Second Phenomenon." In *Working Papers in Scandinavian Syntax* 50, 1–24.
- Jackendoff, Ray. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT press.
- Jacobs, Joachim. 1984. "Funktionale Satzperspektive Und Illokutionssemantik." *Linguistische Berichte* 91: 25–58.

- Kishimoto, Hideki. 2005. "Wh-in-Situ and Movement in Sinhala Questions." *Natural Language & Linguistic Theory* 23 (1): 1–51.
- Kiss, Katalin. 1995. *Discourse Configurational Languages*. Oxford, UK: Oxford University Press.
- Kitagawa, Yoshihisa. 1990. "Anti-Scrambling." Ms., *University of Rochester, Rochester, NY*.
- Ko, Heejeong. 2005. "Syntax Of Why-In-Situ : Merge Into [Spec , Cp]." *Natural Language & Linguistic Theory* 23 (4): 867–916.
- Kratzer, Angelika. 1998. "Scope or Pseudoscope? Are There Wide-Scope Indefinites?" In *Events and Grammar*, edited by Susan Rothstein, 163–96. Berlin: Springer.
- . 2003. "A Note on Choice Functions in Context." Ms. *University of Massachusetts at Amherst*.
- Krifka, Manfred. 1992. "A compositional semantics for multiple focus constructions." In *Informationsstruktur und Grammatik, Linguistische Berichte*, edited by Joachim Jacobs. Dordrecht: Kluwer.
- . 1999. "At Least Some Determiners Aren't Determiners." In *The Semantics/pragmatics Interface from Different Points of View*, edited by Ken Turner, 1:257–91. Amsterdam: Elsevier.
- . 2001. "Quantifying into Question Acts." *Natural Language Semantics* 9 (1): 1–40.
- Kroch, Anthony. 1989. "Amount Quantification, Referentiality, and Long Wh-Movement." Ms. *University of Pennsylvania*.
- Kuno, Susumu. 1973. *The Structure of the Japanese Language*. Cambridge, MA: MIT press.
- . 1974. "The Position of Relative Clauses and Conjunctions." *Linguistic Inquiry* 5 (1): 117–36.
- Kuroda, Sige-Yuki. 1972. "The Categorical and the Thetic Judgment: Evidence from Japanese Syntax." *Foundations of Language* 9 (2): 153–85.
- Kuwabara, Kazuki. 1998. "Overt Wh-Movement and Scope-Fixing Scrambling: A Preliminary Study." In *Report (2) Researching and Verifying an Advanced Theory of Human Language*, edited by Inoue Kazuko, 115–27. Chiban, Japan: Kanda University of International Studies.
- Labov, William, and Teresa Labov. 1978. "Learning the Syntax of Questions." In *Recent Advances in the Psychology of Language*, edited by Robin N. Campbell and Philip T. Smith, 1–44. Amsterdam: Springer.
- Lahiri, Utpal. 2002. *Questions and Answers in Embedded Contexts*. Oxford: Oxford University

Press.

- Lang, Ewald, and Renate Steinitz. 1978. "Können Satzadverbiale Performativ Gebraucht Werden." In *Kontexte Der Grammatiktheorie, Studia Grammatica*, edited by Wolfgang Motsch, 51:80. Berlin: Akademie-Verlag.
- Lasnik, Howard. 1999. "On the Locality of Movement." In *Functionalism and Formalism in Linguistics*, edited by Mike Darnell, 33–54. Amsterdam: John Benjamins Publishing Co.
- Law, Ann. 2001. "A-Not-A Questions in Cantonese." *UCL Working Paper in Linguistics* 13: 295–318.
- Law, Paul. 2006. "Adverbs in A-Not-A Questions in Mandarin Chinese." *Journal of East Asian Linguistics* 15 (2): 97–136.
- Lawler, John. 1971. "Any Questions?" In *CLS* 7, 163–173.
- Li, Audrey. 2007. "Beyond Empty Categories." *Cyugokugogaku* 2007 (254): 74–106.
- Li, Charles, and Sandra Thompson. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley: University of California Press.
- Li, Xiaofan. 1998. *Suzhou Fangyan Wenfa Yanjiu [Suzhounese Grammar: A Study]*. Beijing: Peking University Press.
- Lin, Jonah. 2005. "Does Wh-in-Situ License Parasitic Gaps?" *Linguistic Inquiry* 36 (2): 298–302.
- Lin, Jo-Wang. 1996. "Polarity Licensing and Wh-Phrase Quantification in Chinese."
- Manzini, Maria Rita. 1992. *Locality: A Theory and Some of Its Empirical Consequences*. Cambridge, MA: MIT Press.
- McCawley, James. 1981. "The Syntax and Semantics of English Relative Clauses." *Lingua* 53 (2-3): 99–149.
- . 1994. "Remarks on the Syntax of Mandarin Yes-No Questions." *Journal of East Asian Linguistics* 3 (2): 179–94.
- . 1998. *The Syntactic Phenomena of English*. Chicago: University of Chicago Press.
- Miyagawa, Shigeru. 1997. "On the Nature of Wh-Scope." Ms, MIT.
- Oshima, David. 2007. "On Factive Islands: Pragmatic Anomaly vs. Pragmatic Infelicity." In *New Frontiers in Artificial Intelligence*, edited by Takashi Washio, Ken Satoh, Hideaki Takeda, and Akihiro Inokuchi, 147–61. Berlin: Springer.
- Paris, Marie-Claude. 1979. *Nominalization in Mandarin Chinese: The Morpheme "de" and the "Shi"... "de" Constructions*. Ms, Université Paris 7 Département de recherches

linguistiques.

- Pasch, Renate, Ursula Brauße, Eva Breindl, and Ulrich Waßler. 2003. *Handbuch der deutschen Konnektoren*. Berlin: Walter de Gruyter.
- Pesetsky, David. 1987. "Wh-in-Situ: Movement and Unselective Binding." *The Representation of (in) Definiteness* 98: 98–129.
- . 2000. *Phrasal Movement and Its Kin*. Cambridge, MA: MIT Press.
- Pollard, Carl, and Eun Jung Yoo. 1998. "A Unified Theory of Scope for Quantifiers and Wh-Phrases." *Journal of Linguistics* 34 (2): 415–45.
- Potts, Christopher. 2005. *The Logic of Conventional Implicatures*. Oxford, UK: Oxford University Press.
- Pratt, Ian, and Nissim Francez. 2001. "Temporal Prepositions and Temporal Generalized Quantifiers." *Linguistics and Philosophy* 24 (2): 187–222.
- Qian, Nairong. 2002. *Xiandai Wuyu Yanjiu [Studies on Modern Wu Languages]*. Shanghai: Shanghai Educational Publishing House.
- Reinhart, Tanya. 1981. "Pragmatics and Linguistics: An Analysis of Sentence Topics in Pragmatics and Philosophy I." *Philosophica Anc Studia Philosophica Gandensia Gent* 27 (1): 53–94.
- . 1997. "Quantifier Scopepe : How Labor Is Divided between QR and Choice Functions." *Linguistics and Philosophy* 20 (4): 335–97.
- . 1998. "Wh-in-Situ in the Framework of the Minimalist Program." *Journal of Semantics* 6 (1): 29–56.
- Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge, MA: The MIT Press.
- . 2001. "On the Position 'Int (errogative)' in the Left Periphery of the Clause." *Current Studies in Italian Syntax* 14. Elsevier Amsterdam: 267–96.
- . 2004. "Locality and Left Periphery." *Structures and beyond: The Cartography of Syntactic Structures* 3. Oxford University Press Oxford-New York: 223–51.
- Roelofsen, Floris. 2013. "Algebraic foundations for the semantic treatment of inquisitive content". *Synthese* 190 (1): 79–102.
- Romero, Maribel, and Chung-hye Han. 2004. "On Negative Yes/no Questions." *Linguistics and Philosophy* 27 (5): 609–58.
- Ross, John Robert. 1967. *Constraints on Variables in Syntax*. Massachusetts Institute of Technology doctoral dissertation.

- Saito, Mamoru. 1992. "Long Distance Scrambling in Japanese." *Journal of East Asian Linguistics* 1 (1): 69–118.
- Sanford, Anthony, Claire Williams, and Nicolas Fay. 2001. "When Being Included Is Being Excluded: A Note on Complement Set Focus and the Inclusion Relation." *Memory & Cognition* 29 (8): 1096–1101.
- Schaffar, Wolfram, and Lansun Chen. 2001. "Yes-No Questions in Mandarin and the Theory of Focus." *Linguistics* 39 (5): 837–70.
- Scheffler, Tatjana. 2013. *Two-Dimensional Semantics: Clausal Adjuncts and Complements*. Berlin: Walter de Gruyter.
- Schmerling, Susan. 1975. "Asymmetric Conjunction and Rules of Conversation." *Syntax and Semantics* 3: 211–31.
- Shlonsky, Ur, and Gabriela Soare. 2011. "Where's Why?" *Linguistics Inquiry* 42 (4): 651–69.
- Shyu, Shu-ing. 1995. *The Syntax Of Focus And Topic In Mandarin Chinese*. University of Southern California doctoral dissertation.
- Soh, Hooi Ling. 1998. *Object Scrambling in Chinese*. Massachusetts Institute of Technology doctoral dissertation.
- . 2005. "Wh-in-Situ in Mandarin Chinese." *Linguistic Inquiry* 36 (1): 143–55.
- Sprouse, Jon, and Norbert Hornstein. 2013. *Experimental Syntax and Island Effects*. Cambridge: Cambridge University Press.
- Starke, Michal. 2001. *Move Dissolves into Merge: A Theory of Locality*. University of Geneva doctoral dissertation.
- Stepanov, Arthur. 2007. "The End of CED? Minimalism and Extraction Domains." *Syntax* 10 (1): 80–126.
- Stepanov, Arthur, and Wei-Tien Dylan Tsai. 2008. "Cartography and Licensing of Wh-Adjuncts: A Cross-Linguistic Perspective." *Natural Language & Linguistic Theory* 26 (3): 589–638.
- Szabolcsi, Anna. 2006. "Strong vs. Weak Islands." *The Blackwell Companion to Syntax* 4. by Martin Everaert & Henk van Riemsdijk: 479–531.
- . 2010. *Quantification*. Cambridge: Cambridge University Press.
- Tang, Ting-chi. 1983. "Focusing Constructions in Chinese: Cleft Sentences and Pseudo-Cleft Sentences." In *Studies in Chinese Syntax and Semantics Universe and Scope: Presupposition and Quantification in Chinese* Ed. by Tang, Cheng, Li, edited by Tingchi Tang, Robert L. Cheng, and Yingzhe Li, 127–226. Ann Arbor: Student Book Co.

- Teng, Shou-Hsin. 1979. "Remarks On Cleft Sentences In Chinese." *Journal of Chinese Linguistics* 7 (1): 101–14.
- Thornton, Rosalind. 2007. "Why Continuity." *Natural Language & Linguistic Theory* 26 (1): 107–46.
- Tomioka, Satoshi. 2007. "Pragmatics of LF Intervention Effects." *Journal of Pragmatics* 39 (9): 1570–90.
- . 2009. "Why Questions, Presuppositions, and Intervention Effects." *Journal of East Asian Linguistics* 18 (4): 253–71.
- Tsai, Wei-Tien Dylan. 1994. "On Nominal Islands and LF Extraction in Chinese." *Natural Language & Linguistic Theory* 12 (1): 121–75.
- . 2008. "Left Periphery and How-Why Alternations." *Journal of East Asian Linguistics* 17 (2): 83–115.
- Vallduví, Enric. 1992. *The Informational Content*. New York/London: Garland Publishers.
- Vanderveken, Daniel: 1990. *Meaning and speech acts*. Cambridge, Cambridge University Press.
- Van Valin, Robert. 1996. "Toward a Functionalist Account of so-Called Extraction Constraints." In *Complex Structures: A Functionalist Perspective*, edited by Betty Devriendt, Louis Goossens, and Johan van der Auwera, 29–60. Berlin: Walter De Gruyter & Co.
- . 1998. "The Acquisition of WH-Questions and the Mechanisms of Language Acquisition." In *The New Psychology of Language: Cognitive and Functional Approaches to Language Structure*, edited by Michael Tomasello, 221–49. New York: Psychology Press.
- . 2002. "The Development of Subject--Auxiliary Inversion in English Wh-Questions: An Alternative Analysis." *Journal of Child Language* 29 (1): 161–75.
- . 2005. *Exploring the Syntax-Semantics Interface*. Cambridge: Cambridge University Press.
- Villata, Sandra, Luigi Rizzi, Akira Omaki, and Julie Franck. 2014. "Relativized Minimality A Systematic Investigation On Intervention Effects." In . Columbus: 27th Annual CUNY Conference on Human Sentence Processing.
- von Stechow, Arnim. 1991. "Focusing and Backgrounding Operators." In *Discourse Particles*, edited by Werner Abraham, 37–84. Amsterdam: John Benjamins Publishing.
- . 2002. "Temporal Prepositional Phrases with Quantifiers: Some Additions to Pratt and Francez (2001)." *Linguistics and Philosophy* 25 (5): 755–800.
- Wachowicz, Krystyna. 1978. "Q-Morpheme Hypothesis, Performative Analysis and an

- Alternative.” In *Questions*, edited by Henry Hiz, 151–63. Berlin: Springer.
- Watanabe, Akira. 1992. “Subjacency and S-Structure Movement of Wh-in-Situ.” *Journal of East Asian Linguistics* 1 (3): 255–91.
- Winter, Yoad. 1997. “Choice Functions and the Scopal Semantics of Indefinites.” *Linguistics and Philosophy* 20 (4): 399–467.
- Wittgenstein, Ludwig. 1945. “Philosophical Investigations (Manuscript, 1945-46).” *Transl. from Philosophische Untersuchungen. Transl. by GEM Anscombe*, 1–181.
- Wu, Jianxin. 1997. “More on A-Not-A Questions: A Model-Theoretic Approach.” In *The Proceedings of the Sixteenth West Coast Conference on Formal Linguistics* 16, 463–77.
- Xu, Liejiong, and Jingmin Shao. 1998. *Shanghai Fangyan Wenfa Yanjiu* [Studies on the Grammar of the Shanghai Dialect]. Shanghai: Huadong Shifan Daxue Chubanshe.
- Yang, Barry Chung-Yu. 2006. “Intervention Effects and Left Periphery.” In *Proceedings of the 8th Seoul International Conference On Generative Grammar*.
- . 2011. “Intervention Effects and Wh-Construals.” *Journal of East Asian Linguistics* 21 (1): 43–87.
- Yoo, Eun-jung. 2000. *Alternative Questions in the Syntax-Semantics Interface*. Ms. Waseda University.
- You, Rujie. 2004. “Dialects in Contact and Formation of the Shanghai Dialect.” In *Papers in Language Contact*, edited by Jiayan Zou and Rujie You, 319–47. Shanghai: Shanghai Educational Publishing House.
- Zhu, Dexi. 1982. *Yufa Jiangyi* [Lecture Notes on Grammar]. Beijing: Shangwu Yinshuguan.
- . 1985. “Hanyu Fangyan Li de Liangzhong Fanfu Wenju. [Two Kinds of A-Not-A Questions across Chinese Dialects]”, *Zhongguo Yuwen* 1: 10–20.
- Zwicky, Arnold, and Ann Zwicky. 1973. “How Come and What For.” *Papers in Honor of Henry and Renée Kahane*, edited by Kachru et al. Urbana: University of Illinois Press.