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On the Form and Meaning of Chinese Bare Conditionals:

Not Just *Whatever*

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On the Form and Meaning of Chinese Bare Conditionals:

Not Just *Whatever*

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The syntactic and semantic treatment of Chinese Bare Conditionals is a topic of much debate (Cheng and Huang 1996; Lin 1996; Chierchia 2000). This dissertation investigates the nature of Chinese Bare Conditionals in three aspects: quantification and modal implications as compared to English free relatives with *-ever*, and pronoun occurrence. With regard to quantification, I propose to treat the antecedent *wh*-phrase and its anaphoric element (pronoun/*wh*-word) uniformly as a definite description denoting a maximal plural entity similar to Jacobson (1995). This entity can be an atomic entity resulting in a singular definite reading, or an entity consisting of more than one atom deriving a universal-like reading. Concerning modal implication, I propose to capture the agent's/speaker's indifference reading of bare conditionals with von Stechow (2000). Indifference reading in his analysis is interpreted against a counterfactual modal base which predicts a causal link. His analysis is needed for the interpretation of Chinese bare conditionals but may not be applied directly to *whatever*, given that a causal link is necessarily present in a bare conditional, but not required in an English *whatever*-sentence. I argue that the use of a pronoun in a bare conditional is not subject to a uniqueness and existence condition as claimed in Lin (1996). Although bare conditionals

typically contain two identical *wh*-words, they may occur naturally with a pronoun that links bare conditionals with other sentences into a piece of coherent discourse.

This account bears an important implication for the study of Chinese *wh*-phrases and third person pronouns in being able to predict the existence of anaphoric definite *wh*-phrases and bound-variable pronouns in the language. It also improves on existing accounts of Chinese bare conditionals in being able to capture the details of the form and meaning of this construction. Chinese bare conditionals are structurally related to *ruguo* ‘if’-conditionals and Hindi left-adjoined correlatives and their meaning is similar to, and yet not quite the same as that of *whatever*.

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Chapter 1

Introduction: Relations between Bare Conditionals, Conditionals, and *Whatever*

For over a decade there has been an extended debate on the syntax and semantics of Chinese Bare Conditionals. The pressing issue with regard to their form concerns pronoun occurrence, while the controversy surrounding their meaning has to do with quantification. Translations of bare conditionals often use English free relatives (FRs) with *-ever* (*whatever*, *whoever*, etc.), a construction associated with implications of ignorance or indifference (Dayal 1997; Fintel 2000). However, this particular meaning-aspect of bare conditionals is rarely touched upon in the literature of Chinese linguistics. This dissertation investigates the nature of bare conditionals in three aspects: quantification and modal implications as compared to FRs with *-ever*, and pronoun occurrence.

In this introductory chapter, I focus on discussing the link between bare conditionals, *ruguo* ‘if’-conditionals, and FRs-*ever* sentences. While I motivate an account that links bare conditionals closely to *whatever*, I emphasize that the meaning of bare conditionals cannot be adequately captured by previous accounts based on *whatever* and *ruguo* ‘if’-conditionals. Section 1.1 introduces Chinese bare conditionals as exhibiting a paratactic sentence pattern (i.e., sequencing of elements in a sentence without connectives/linking elements) commonly found in the Chinese language. Section 1.2 provides the first glimpse of the form and interpretation of bare conditionals that are unlike ordinary hypothetical *ruguo* ‘if’-conditionals. Section 1.3 highlights the

similarities between bare conditionals and FRs-*ever*. Section 1.4 introduces the problem with translation between bare conditionals and *whatever*, and reveals the fundamental differences between these two constructions that are in need of further examinations. Section 1.5 raises issues concerning the nature of quantification in bare conditionals including the distribution of non-interrogative *wh*-words and pronoun occurrence (from Cheng and Huang 1996; Lin 1996). Section 1.6 provides an overview of the dissertation.

1.1 Bare conditionals and Sentence Patterns in Mandarin

In Mandarin, two sentences in ordinary discourse frequently occur without any overt linking element to signal their relationship. We can notice that the form of Chinese bare conditionals reflects a Chinese paratactic sentence pattern that sentences in ordinary discourse exhibit. Like the two sentences in (1a) (cf. Li and Thompson 1981), the bare conditional in (1b) is formed by two sentences without a linking element to signal their relationship:

- (1) a. Wo si-le, ni zuihao zai jia.
 I die-PFV you better again marry
 ‘*(If/when) I die, you’d better marry again.’

- b. Shei shang fengmian, shei daomei.¹
 who on cover who unlucky
 ‘Whoever is on the cover is unlucky.’

Though the English translation in (1a) cannot be grammatical without a connective (*if/when*), a sequence of independent sentences occurring without overt linking elements

¹ pc.duowan.com/feature/20090731/1249023676.shtml

is a common mode of discourse structure in Chinese. This suggests that what we are studying is part of a general phenomenon in Chinese. There is nothing peculiar about the form of bare conditionals that violates the general tendency of sentence patterns in Chinese.

1.2 The Link between Bare Conditionals and Hypothetical *if*-conditionals

When we think of conditionals, we typically think of sentences that take the form of *if* p , q as shown in (2a):

- (2) a. If David's goat is in labor, then he will be late.

The sentence in (2a) is an example of the most common kind of conditional structure discussed in the literature known as “Hypothetical Conditionals.”² In a hypothetical conditional, the proposition expressed by the antecedent clause (p) specifies the circumstances in which the proposition expressed by the main clause (q) is true. Thus, (2a) states that the possible worlds in which David's goat is in labor are possible worlds in which he arrives late. Also, the truth of the antecedent clause of a hypothetical conditional is typically unknown to interlocutors. Hence, the hypothetical conditional in

² Note that a wide variety of constructions can also have a conditional meaning. For instance, coordinate constructions with imperatives as conditionals are well known as in *Smile one more time and I'll kiss you* and *Stop sleeping around or I'll kill you*. Also, sentences with the form of *if* p , q may receive a wide variety of interpretations different from hypothetical conditionals include “relevance conditionals” (or “speech act conditionals”) like *If you are thirsty, there is beer in the fridge* and “factual conditionals” like *If you are so smart, why don't you solve the problem yourself?*, etc.

It is controversial how to best classify conditionals. Most separate “indicative conditionals” like *If the oil spill spreads to Florida shorelines, the whole world will be polluted*, from subjunctive conditionals (or “counterfactual conditionals”) like *If the government had placed a permanent ban on offshore drilling, we wouldn't have the largest environmental disaster*. For the purpose of this dissertation, we take “hypothetical conditionals” as a general term for what we take typical conditional sentences to mean.

(2a) is most natural in a context where a speaker does not yet know whether David's goat is in fact in labor.

Crosslinguistically, overt marking of the protasis (the antecedent clause of the conditional) appears to be the commonest strategy (cf. Comrie 1986) but it is by no means necessary for conditional constructions to be overtly marked. Mandarin Chinese, for instance, allows for conditional interpretation in the absence of any overt marking of conditionality:

- (2) b. (Ruguo) David de yang sheng xiaoyang, ta (jiu) hui chidao.³
if David DE goat bear little goat he then will late
'If David's goat is in labor, (then) he will be late.'

Without the leading element *ruguo* 'if', the sentence in (2b) can still receive a conditional interpretation like the example in (2a) just described. However, tense and aspectual morphemes are syntactically optional in Mandarin. A sentence that does not contain any tense/aspectual morpheme can be used to describe a past event or an on-going event. For instance, the sentence below can have a reading that says Zhangsan finished repairing a tape recorder, or it can mean that the repairing is still ongoing (cf. Smith 1997):

- (3) Zhangsan xiuli yitai luyinji.
Zhangsan repair one tape recorder
'Zhangsan repaired/is repairing a tape recorder.'

³ Note that the sentence in (2b) is not a bare conditional because its first clause does not contain a *wh*-word and its second clause does not have an element anaphoric to the first clause.

Likewise, in the absence of any overt conditional marking, a sentence like (2b) is ambiguous. It can describe a fact stating that *David's goat is in labor (and) he will be late*, and loses its conditional meaning.

At first glance, the structure of Chinese bare conditionals and that of ordinary *ruguo* 'if'-conditionals look very much alike. Like conditional sentences, bare conditionals are composed of two clauses:

- (4) Shei xihuan Zhangsan, shei/ta (jiu) daomei. (Bare Conditionals)
who like Zhangsan who/(s)he then unlucky
'Whoever likes Zhangsan will be/is unlucky.'

However, bare conditionals lack the morpheme *ruguo* 'if'. They also frequently occur without any tense and aspectual morpheme and their interpretations vary according to context. The sentence in (4) can be used to predict that the individuals who like Zhangsan will be unlucky.⁴ Alternatively, it can describe a fact stating that the person/people who like Zhangsan are unlucky as in the following context:

- (5) Wo gen ni shuo shei daomei. Shei xihuan Zhangsan shei/ta daomei!
I with you say who unlucky who like Zhangsan who/she unlucky
'Let me tell you know who is unlucky. Whoever likes Zhangsan is unlucky.'

The bare conditional in the context of (5) is felicitous and is not used to make a hypothetical assumption. Likewise, the bare conditional in the context of (6) does not have a meaning of a hypothetical conditional but is simply about a fact:

⁴ It is possible that only one individual who likes Zhangsan, or there may be multiple such individuals.

(6) Ni bie wen wo shuo-le shenme. *Ni shuo shenme wo (jiu) shuo shenme.*
 you not ask me say-Perf. what you say what I then say what
 ‘Don’t ask me what I said. I said whatever you said.’

The ability to state a fact is a property of bare conditionals not shared by typical hypothetical conditionals.

It is also important to point out that bare conditionals also differ from hypothetical conditionals with respect to the nature of their antecedent clauses. The antecedent clause of a hypothetical conditional expresses a proposition. However, the antecedent of a bare conditional is best translated as a NP (to be discussed in Chapter 2). In (4), it denotes the individual(s) who like Zhangsan, and in (6), the thing(s) that the addressee said.

1.3 The Link between Bare Conditionals and *Whatever*

Originally, Cheng and Huang (1996) claim that “bare conditionals do not bear any remote structural resemblance to typical relative clauses in Chinese” given that the relativizer *de* is never present in a bare conditional as shown in (7a) (p. 158):

(7) a. Ni kanjian shenme, ni jiu hui dedao shenme. (*Bare Conditional*)
 you see what you then will get what
 ‘You will get whatever you see.’⁵

⁵ The translation of this sentence provided in Cheng and Huang (1996) reads: *If you see X, you will get X*. I do not use their translation because it cannot distinguish bare conditionals from *ruguo* ‘if’-conditionals. In Chapter 2, we will continue to show that there are contexts where bare conditionals can occur but *ruguo* ‘if’-conditionals cannot. In Huang, Li, and Li (2009), bare conditionals have the following translations, although the link between FRs-*ever* and bare conditionals is not discussed (p. 367):

(i) Shei xian lai, shei jiu xian chi.
 who first come, who then first eat
 ‘If x comes first, x eats first.’
 (Whoever comes in first eats first.)

- b. Ni kanjian de, jiu shi ni hui dedao de. (Relative Clause)
 you see Rel then be you will get Rel
 ‘The thing that you see is the thing that you will get.’

The relativizer *de* is absent in the bare conditional in (7a) but present in its relativized counterpart in (7b). Due to this structural difference, the authors do not consider the relation between bare conditionals, Hindi correlative construction, and English *whatever*.

Even though bare conditionals do not involve relativization, this does not mean that bare conditionals, correlatives, and FRs-*ever* are entirely unrelated. Historically, conditionals are derived from correlative constructions. In many languages, conditionals are correlatives themselves.⁶ A number of studies have suggested that conditional constructions are related to correlatives (cf. Geis 1985; von Stechow 1994; and among others). The *if*-clause is the correlative clause, and *then* is a correlative proform. In Srivastav (1991) and Dayal (1996), correlative constructions involve a free relative clause adjoined to the matrix clause and coindexed with a proform inside it as in (8a):

- (8) a. [free relative]_i [...proform_i...]
 b. [_{IP} [_{NP_i} e [_{CP_i} what(ever) she tells me]] [_{IP} I will do t_i]]
 c. [if-clause]_i [then_i ...]

⁶ As Bhatt and Pancheva (2005) point out that in languages where correlativization is a productive strategy, it is apparent that conditionals are correlatives (e.g. Marathi) (examples from Pandharipande (1997)):

- (i) dzar tyāne abhyās kelā tar to pā hoīl.
 if he-ag studying do.Pst.3MSg then he pass be.Fut.3S
 ‘If he studies, he will pass (the exam).’
 (ii) dzo mātūs tudzhyā śedzārī rāhto to mātūs lekhak āhe
 which man your neighborhood-in live-Prs.3MSg that man writer is
 ‘The man who lives in your neighborhood is a writer.’
 (Lit. ‘Which man lives in your neighborhood, that man is a writer.’)

In Srivastav's work, English free relatives are provided with a similar structure (at LF) as shown in (8b) (same as Hindi left-adjoined relatives). In Bhatt and Pancheva (2005), conditional *if*-clauses have the structure of (8c) that is essentially the same as Srivastav's free relatives in (8b).⁷ All suggest a close link between conditionals, free relatives, and correlatives. With this link in mind, one should not find it surprising that under our account, bare conditionals will be treated on a par with free relatives (as (8b)) despite their seemingly diverse forms (to be discussed in Chapter 2).

Another important motivation for our account that relates bare conditionals closely to *whatever* comes from the observation that bare conditionals and *whatever* are associated with similar modal implications. Dayal (1997) takes the role of the morpheme *-ever* as an indicator of a speaker's ignorance (9a), not signaled in (9b) with a plain FR:

- (9) a. There's a lot of garlic in whatever Arlo is cooking.
- b. There's a lot of garlic in what Arlo is cooking.

(9a) but not (9b) can be paraphrased as: "the speaker does not know what Arlo is cooking but the thing whatever it is that Arlo is cooking has a lot of garlic in it." Von Stechow (2000) argues that another function of the morpheme *-ever* is to presuppose indifference. The preferred reading in (10) below signals that the speaker grabbed the tool that was handy and he did so indiscriminately:

- (10) I grabbed whatever tool was handy.

⁷ Specifically, they claim that *if*-clauses are plural definite descriptions like free relatives in that free relatives involve abstraction over individuals (following Jacobson 1993 and Dayal 1996), and *if*-clauses involve abstraction over possible worlds (following works such as Schein 2001).

Likewise, the sentence in (11a) has the preferred reading (11b) where Zack voted for the person at the top of the ballot without caring whom he voted for:

- (11) a. Zack simply voted for whoever was at the top of the ballot.
b. Zack voted for the person that was at the top of the ballot, and if a different person had been at the top of the ballot, Zack would have voted for that person.

Similar to the use of *whoever* in (11b) above, the Chinese bare conditional in (12a) below also has an indifference reading:

- (12) a. Shei xiang chi tang, Dawei jiu gei shei/ta tang chi.
who want eat candy David then give who/(s)he candy eat
'David gave candies to whoever wanted to eat candies.'
- b. Shei xiang chi tang, Dawei jiu gei shei/ta tang chi.
who want eat candy David then give who/(s)he candy eat
#Dawei hen xiang gei Steve tang chi.
David very want give Steve candy eat
'David gave candies to whoever wanted to eat candies. David really wants to give Steve candies to eat.'

The bare conditional in (12a) cannot be followed by an utterance that expresses David's strong preference for wanting to give candies to a specific person (Steve) as shown in (12b). When asked to identify the person/people whom David gave candies to, a speaker may imply that she does not know who the individual(s) is/are by uttering the bare conditional in (12a). While it is the case that bare conditionals can also have an

ignorance and indifference reading, whether these implications are indeed what this construction presupposes remains to be seen. Note that even though the main clause of the bare conditional in the example in (12a) has an agent, a bare conditional does not require the presence of an agent. In Chapter 3 we will discuss presuppositions and entailment in bare conditionals that contain an agent as well as those that do not.

1.4 Differences between Bare Conditionals and *Whatever*: Problems of Translation

Having said that bare conditionals and *whatever* are alike, some cautionary words are in order. There are instances where the two constructions fail to converge. The most obvious observation is that *whoever*-sentences cannot always be directly translated into bare conditionals. For instance, the following bare conditional has been judged to be ill-formed, while the English translation is perfectly fine (cf. Lu 1980; Lin 1996):

- (13) *Shei zhan zai nali, shei (jiu) hen gao.
 who stand in there who then very tall
 ‘The person who is standing there, whoever he is, is very tall.’

Moreover, while the English *whatever*-sentence in (14a) begins with the main clause *David will say*, its translation can only use (14c) and cannot use the bare conditional that begins with the same clause *David shuo* ‘David will say’ as shown in (14b):

- (14) a. David will say whatever you say.
 b. ≠ Dawei shuo shenme, ni jiu shou shenme.
 David say what you then say what
 ‘You will say whatever David says.’

c. = Ni shou shenme, Dawei jiu shuo shenme.
you say what David then say what
'David will say whatever you say.'

In Chapter 3, I will discuss modal implications of bare conditionals and argue that (13) is well formed in a context where the causal link between the two clauses is imagined. The problem with (14) is due to a structural restriction imposed by bare conditionals that is otherwise not required in *whatever*-sentences. We will see that the strict sequential order of the clauses in a bare conditional gives rise to a default modal implication (the indifference reading) that is not necessarily associated with *whatever*. After we bring out these differences between the two constructions, the puzzle of translation will be resolved.

1.5 The Interpretations of *Wh*-words and The Problem of Pronoun Occurrence

The issue of pronoun occurrence in bare conditionals cannot be addressed without a proper understanding of the nature of quantification in bare conditionals and the distribution of *wh*-words. Chinese *wh*-words are not inherently interrogative but are indeterminate in meaning (cf. Huang 1982; Cheng 1991, 1994; Li 1992; Cheng and Huang 1996; Lin 1996, 1998; Huang, Li, and Li 2009). Depending on the context where they occur, they may be interpreted as question words, non-interrogative existential indefinites, or universal quantifiers. Standing alone, *wh*-words function as question words to initiate the discourse:

- (15) a. Question: Ni qing shei chi fan?
you invite who eat food
'Whom did you invite to eat?'

Answer: Wo qing Zhangsan chi fan.

I invite Zhangsan eat food

‘I invite Zhangsan to eat.’

b. Question: Ni zai chi shenme?

you Prog eat what

‘What are you eating?’

Answer: Wo zai chi xiangjiao.

I Prog eat banana

‘I am eating a banana.’

It is immediately noticeable that unlike in English, the formation of questions in Chinese does not involve fronting a *wh*-word in the beginning of the sentence. The *wh*-words in *shei* ‘who’ in (15a) and *shenme* ‘what’ in (15b) stay in-situ and do not undergo overt *wh*-movement in syntax.⁸ The word order in questions is the same as that in answers. Alternatively, *wh*-words can also have a universal interpretation when occurring with the adverb *dou* ‘all’:

(16) a. Zhangsan zhege ren, shei dou xihuan ta.

Zhangsan this-CL person who all like him

‘Zhangsan this person, everyone loves him.’

b. Zhangsan shenme dou xihan.

Zhangsan what all like

‘Zhangsan likes everything.’

⁸ Huang (1982) argues that Chinese *wh*-words move covertly while in English, *wh*-words move overtly. A Chinese interrogative sentence like *ni mai shenme*, literally, *you bought what*, with the *wh*-word *shenme* ‘what’ staying in situ conveys the same meaning as its English counterpart--*What did you buy*.

Sometimes, *wh*-words in Chinese may receive an existential interpretation in a variety of contexts exemplified by the sentences in (17):

- (17) a. Ni zuowan hezuijiu shi-bu-shi da-le shenme ren?
you last night drunk be-not-be hit-Asp what person
'Is it the case that you hit someone while you were drunk last night?'
- b. Ruguo you shei xihuan ni, tian hui ta xialai.
if have who like you sky will collapse down
'If someone likes you, the sky will fall.'

Non-question *wh*-words that are interpreted as meaning *something*, *somebody*, etc., are termed “non-interrogative indefinites” in the literature including *wh*-words that occur in bare conditionals (Cheng and Huang 1996; Lin 1996; Chierchia 2000). According to Cheng and Huang (1996), *wh*-words in bare conditionals are indefinite variables unselectively bound by a covert necessity operator:

- (18) a. Shei xian lai, shei /*ta (jiu) xian chi.
who first come, who/(s)he then first eat
'If x comes first, x eats first.'
Unselective binding: $\forall x (x \text{ come first} \rightarrow x \text{ eat first})$
- b. Ni xihuan shei, shei /*ta jiu daomei.
you like who who/(s)he then unlucky
'If you like x, x is unlucky.'
Unselective binding: $\forall x (\text{you like } x \rightarrow x \text{ unlucky})$

Under their account, bare conditionals prohibit the presence of a consequent pronoun because the Chinese pronoun *ta* ‘he/she’ cannot be directly bound by an operator in an \bar{A} -position. If it appears in the consequent clause of a bare conditional, it would have to be bound by such an operator (the necessity operator).

Contrary to Cheng and Huang’s claim, however, Lin (1996) presents the following examples to show that bare conditionals can occur with a consequent pronoun (p. 248-249):

- (19) a. Shang ci shei mei jiang-wan, jintian jiu you shei/ta xian kaishi.
last time who not talk-finish today then with sho/him first begin
‘Today let’s begin with whoever did not finish his talk last time.’
- b. Shei shang xueqi na di-yi-ming,
who last semester get top-one
shei/ta zhe xueqi jiu keyi dan banzhang.
who/he this semester then may serve leader
‘Whoever’s performance was the best last semester may serve as the
class leader this semester.’

Lin claims that bare conditionals such as Cheng and Huang’s (18) allow multiple possible individuals to satisfy the antecedent clause and the quantificational force is “similar to that of *any*”. When the anaphoric *wh*-phrase is replaced by a pronoun like the examples in (19), the antecedent *wh*-phrase must refer to a unique referent that has the relevant property in the actual world and the “more than one person” reading disappears (1996, p. 250). Lin proposes a “Condition on Donkey Pronouns in Bare Conditionals” (p.251):

- (20) A donkey pronoun in a bare conditional is felicitous only if it picks out a unique referent.

Lin claims that the quantification in bare conditionals with a pronoun as in (19) is distinct from that in bare conditionals with a second *wh*-word (an indefinite) as in (18).

In Chapter 2, we will apply a number of linguistic tests to show that *wh*-phrases in bare conditionals share more characteristics with definites than with indefinites. We will argue that as far as quantification is concerned, a bare conditional with two identical *wh*-words is no different from that with a pronoun in the consequent clause. In Chapter 4, we will review previous analyses in detail and examine uses of pronouns outside of conditional sentences. We will show that the use of pronouns in general is not subject to Lin's constraint in (20) and will suggest several possibilities for the justification of pronoun occurrence in bare conditionals.

1.6 Summery and Outline of the Dissertation

In this chapter, I gave the initial motivation for an account that relates bare conditionals to FRs-*ever*, but suggested that the meaning of bare conditionals cannot be adequately captured by previous accounts based on English *whatever*. Although bare conditionals appear similar to ordinary *ruguo* 'if'-conditionals in the forms they exhibit, they differ greatly in displaying the following semantic properties. First, a hypothetical *if*-conditional is typically used to make a hypothetical assumption, while a bare conditional is not. Secondly, the antecedent clause of a hypothetical conditional expresses a proposition, while in a bare conditional it is best translated as a NP ambiguous between a singular definite and a plural definite (universal) reading.

Crucially, bare conditionals share many characteristics with FRs-*ever* including their association with ignorance and indifference modal implications. However, I raised some problems with translation between the two constructions. Then, I suggested several areas that are in need of further investigation to explain the differences between bare conditionals and *whatever*, and to solve the puzzle of pronoun occurrence in bare conditionals. The conclusion of this chapter brings us to the following questions that the remaining of this dissertation will tackle:

1. How do Chinese bare conditionals relate semantically to FRs-*ever*?
2. What is the nature of *wh*-phrases in bare conditionals? Do *wh*-phrases in bare conditionals differ from non-interrogative *wh*-indefinites?
3. What are the constraints on pronoun occurrence in bare conditionals?

Chapter 2 and 3 will address the first issue. The answer to the second question will be provided in Chapter 2. Chapter 4 will discuss the third problem. The central claims to be made and the basic structure of the remaining chapters are summarized and outlined as follows:

Chapter 2 reexamines the nature of quantification in bare conditionals. It shows that *wh*-words in bare conditionals display properties of definites and provides an implementation of Jacobson's 1995 account for English FRs to analyze the antecedent *wh*-phrase and its anaphoric element (either a pronoun or another occurrence of the same *wh*-word) uniformly as definites. The present account is able to predict the existence of anaphoric

definite *wh*-phrases in naturally occurring data. It also bears an implication for the study of the distribution of Chinese *wh*-phrases for being able to provide an explanation to the puzzle raised in Lin (1998).

Chapter 3 investigates the meaning of bare conditionals including presupposition, entailment, and modal flavor attributed by *wh*-words in Chinese bare conditionals drawing comparison with English FRs with *-ever*. I sketch an account that takes the analysis of von Stechow (2000) for English *whatever* as its basis. I apply the projection tests introduced in Beaver and Zeevat (2007) to study the projection behavior of the ignorance and indifference “presupposition” of *whatever*. I show that modal implication of ignorance associated with *whatever* is not a classic case of presupposition, but an implicature that is accommodated when certain conditions for the use of *whatever* are met in the common ground. I claim that bare conditionals necessarily force a causal interpretation of the conjuncts and always entail indifference. English *whatever*-sentences do not have this requirement. This difference between bare conditionals and *whatever*-sentences contributes to the problem of translation between the two constructions. While the morpheme *-ever* is the source of the ignorance and indifference readings, it is the causal link between the two conjuncts in bare conditionals and the function of *wh*-words to signal ignorance that supply these additional modal flavors.

Chapter 4 addresses the issue of pronoun occurrence in bare conditionals. It shows that pronoun occurrence in bare conditionals is constrained by principles that govern discourse cohesion rather than restricted solely by the grammar of bare conditionals. It

also suggests that speakers' preference for parallel constructions may have contributed to the incompatibility between a pronoun and a bare conditional.

Chapter 2

Quantification of Chinese Bare conditionals

This chapter reexamines the nature of quantification in bare conditionals. It argues that contrary to the claim made in the works of Cheng and Huang (1996) and Lin (1996), *wh*-words in bare conditionals do not display characteristics of indefinites that lack an inherent quantificational force. Although there is a long tradition of analyzing non-interrogative *wh*-phrases as indefinites, I argue that *wh*-phrases in bare conditionals pattern with definites and that an account similar to Jacobson's 1995 analysis for English free relatives can capture the quantificational force of *wh*-phrases in bare conditionals adequately. The present account has several advantages over previous ones. Not only is it able to predict the existence of anaphoric definite *wh*-phrases in naturally occurring data but it also bears an important implication in the study of *wh*-phrases and bare NPs in Chinese.

This chapter is organized as follows: Section 2.1 uncovers the nature of *wh*-words in bare conditionals as definites. Section 2.2 proposes to treat the antecedent *wh*-phrase in a bare conditional and its anaphoric element (either a pronoun or another occurrence of the same *wh*-word) uniformly as a definite similar to Jacobson (1995). Section 2.3 discusses a prediction and an implication of the present account.

2.1 *Wh*-words in Bare Conditionals as Definite Descriptions

For the purpose of this dissertation, definites will be taken to mean definite descriptions that are phrases of the form 'the F'. Indefinites will be phrases of the form

‘an F’. In Chinese, expressions that take the form *nei*-NP ‘that-NP’ or *zhe*-NP ‘this-NP’ may be used to signal definiteness while those that take the form *yi*-NP ‘one-NP’ may be used to signal indefiniteness. In this section, I argue that unlike indefinites that are known to pick up the quantificational force of whichever adverb of quantification they are in the scope of, *wh*-words in bare conditionals lack a quantificational variability (henceforth, QV) reading in the presence of quantificational adverbs. In addition, I show that *wh*-words in bare conditionals have the following properties of definites: (i) they exhibit a definiteness-effect for being incompatible with the existential marker *you* ‘have’; (ii) they are not subject to the novelty condition; (iii) they are able to pick up familiar discourse referents.

2.1.1 The Problem with Unselective Binding: *Wh*-words \neq Indefinites

Within the DRT framework (e.g., Heim 1982; Kamp and Reyle 1993), indefinites are variables.⁹ In the presence of an adverb of quantification (Q-adverb), they can get bound by it and inherit its quantificational force. In structures involving adverbs of quantification, indefinite NPs display a variable quantificational force. Consider the following sentences:

- (21) a. A cat always/usually/never chases a mouse.
 b. If a cat sees a mouse, it always/usually/never chases it.

⁹ Before DRT, indefinites were analyzed as existentially quantified terms since Frege and Russell. For instance, the interpretation of the indefinite *a student* in the sentence below involves an existential quantifier:

- (i) A student came. Interpretation: $\exists x$ [student (x) & came (x)]

Depending on which adverb of quantification we pick, (21a) seems to say that all, most, or no cats chase mice. The example in (21b) has a similar reading. This is the phenomenon of quantificational variability (QV). If *wh*-words in bare conditionals are really indefinites without their own quantificational force, we would expect them to pick up the quantificational force of whichever adverb of quantification they are in the scope of. However, this prediction is not born out in the case of bare conditionals. The examples in (22a) and (22b) do not have a QV-reading in the presence of quantificational adverbs:

(22) a. Tongchang *shei wan dao, wo jiu da shei/ta*.

usually who late arrive I first hit who/him/her

'Usually I hit whoever arrives late.'

= On most occasions, I hit indifferently everyone/ the person who arrive(s) late.

≠ I hit most people who arrive late.

b. Tongchang *shei xian lai, shei/ta (jiu) xian chi*.

usually who first come, who/he/she then first eat

'Usually whoever comes first can eat first.'

= On most occasions, everyone/the person who come(s) first can eat first.

≠ Most people come first, can eat first.

Note that in the English translation, we also do not get a QV-reading with *whoever* sentences in both examples in (22). English free relatives (FRs) with *-ever* are commonly analyzed as definite descriptions (Jacobson 1995; Dayal 1995, 1997; Von Stechow 2000; Tredinnick 2005). Definite descriptions including universal expressions are known not to

interact with adverbs of quantification in lacking a QV-reading. There is reason to believe that *wh*-phrases in bare conditionals are better treated as definite descriptions rather than indefinite variables without inherent quantificational force.

2.1.2 Bare Conditionals are Incompatible with the Existential *You* ‘have’

Basic existential sentences assert the existence or non-existence of what the NP denotes. In an English existential *there*-sentence, *there* occupies the subject position and the canonical subject occurs after the verb *be*.¹⁰ In Chinese, existential sentences typically begin with the existential verb *you* ‘have’ without a subject:

- (23) a. You yige ren hen xihuan ni.
 have one man very like you
 Lit. ‘There is a man who likes you very much.’
- b. You ren lai le.
 have person come PFV
 Lit. ‘There came a person.’

Huang (1987) observes that Chinese existential sentences, as in English and every other language, cannot contain definite NPs and they exhibit the Definiteness Effect.¹¹

¹⁰ Existential sentences are said without putting any stress on *there*. If *there* is accented, these sentences will receive a second reading in which *there* is used referentially (see Pierrehumbert 1980). Here we are not concerned with the second reading.

¹¹ Hu and Pan (2007) discuss cases where definites occur in the post existential *you*-position. However, they do not belong to the basic existential sentences under our discussion here since those cases must contain a focus particle. An example of an existential *you*-sentence with a focused definite NP marked by the focus particle *hai* ‘in addition’ is shown below (their (10)):

Contrary to (23), examples in (24) are ungrammatical by virtue of containing definite NPs:

- (24) a. *You neige ren hen xihuan ni.
have that man very like you
Lit. ‘There is that man who likes you very much.’
- b. *You zhege ren lai le.
have this-CL person come PFV
Lit. ‘There came the person.’

The contrast between (23) and (24) indicates that indefinite NPs in Chinese can be preceded by *you* ‘have’ while definite NPs cannot.

Like definites and unlike indefinites, *wh*-words in bare conditionals are not able to occur with the existential *you* ‘have’:

- (25) *You shei xian lai, shei (jiu) xian chi.
have who first come, who then first eat
‘Whoever comes first, eats first.’

While in (23), the indefinite NP *yige ren* ‘a man’ is acceptable in the existential sentence, the *wh*-word in the antecedent clause of the bare conditional in (25) preceded by the existential morpheme *you* ‘have’ is ruled out.

Note that outside of bare conditionals, the morpheme *you* ‘have’ can precede a *wh*-question word as in the following example:

-
- (i) Hai you nage ren/Zhangsan.
in addition have that-CL man/Zhangsa
‘There is in addition that man/Zhangsan.’

- (26) Ni jiali you shei?
 you house have who
 ‘Who are there in your house/family?’

This shows that the occurrence of *you shei* ‘have who’ is permitted by the grammar of Chinese. It is only in a bare conditional, *you* ‘have’ cannot precede *shei* ‘who’.¹²

Definite NPs are prohibited in the existential construction, a property not shared by indefinite NPs. However, previous accounts analyze *wh*-words uniformly as indefinites in both bare conditionals and *ruguo* ‘if’-conditionals despite the fact that the two constructions are in complementary distribution with regard to their compatibility with the existential morpheme *you* ‘have’. Consider the following example:

- (27) Ruguo you shei xian lai, ta (jiu) xian chi
 if have who first come, who then first eat
 ‘If someone comes first, he then can eat first.’

The bare conditional in (25) with existential *you* ‘have’ preceding *shei* ‘who’ is ruled out while the *ruguo* ‘if’-conditional in (27) is well-formed. I believe that the contrast between (25) and (27) suggests that *wh*-words behave like definites in bare conditionals but like indefinites in *ruguo* ‘if’-conditionals. Other differences between *wh*-words in bare conditionals and those in *ruguo* ‘if’-conditionals are discussed in Section 2.1.5.

2.1.3 *Wh*-words in Bare Conditionals & the Novelty Condition

¹² I thank Steve Wechsler for pointing this out (p.c.).

Under the standard DRT account indefinites lack an inherent quantificational force and are assimilated to variables (e.g., Heim 1982; Deising 1992; Kamp and Reyle 1993). Unlike other variables (e.g., pronouns, traces and other definite NPs), indefinites introduce novel variables. Indefinites are subject to the “novelty condition”, i.e., the referent of an indefinite description must NOT be familiar (Heim 1982).¹³ In other words, indefinites must introduce novel variables. For instance, one cannot say (28a) meaning (28b) (cf. Chierchia 2000):

- (28) a. I saw a cat and John also saw a cat.
 b. I saw a cat and John also saw it.

By subscribing to the novelty condition, we expect both occurrences of the indefinite *a cat* to introduce novel variables thus preventing (28a) to have the interpretation of (28b).

With the novelty condition in mind, let us consider again Cheng and Huang’s treatment of *wh*-words in bare conditionals as indefinites. If *wh*-words are genuine indefinites, they ought to be subject to the novelty condition. We would expect them to introduce novel variables in both conjuncts. However, as Chierchia (2000) points out, this prediction only holds for the *wh*-word in the antecedent clause but not in the

¹³ Indefinites get their quantificational force from Q-adverbs (which may be null) that bind free variables associated with indefinites in their scope. Consider the following example (from Chierchia 2000):

- (i) I own a mouse and a cat.
 a. If a dog sees a cat, it barks at it.
 b. If a dog sees the cat/that cat, it barks at it.

The variable introduced by the definite NP in (b) cannot be bound by the Q-adverb while the variable associated with the indefinites in (a) can.

consequent clause. If *wh*-words could be associated with an old variable in the antecedent of an *if*-conditional, we could get a case such as the following (p. 17):¹⁴

(29) A student_i walked in. If who_i walks in, I will greet who.

Such a sentence would wind up with the wrong meaning (p. 17):

(29') A student walked in; if he walks in, I greet him.

The desired reading requires us to stipulate that a *wh*-word must introduce a novel-variable in the antecedent clause of a conditional but a non-novel variable in the consequent clause. Cheng and Huang's analysis of *wh*-words in bare conditionals creates a phenomenon which our theory of indefinites cannot account for. As Chierchia notes, novelty is generally absolute, not context dependent. Here we will not consider Chierchia's treatment of *wh*-words in bare conditionals because it relies heavily on the work of Cheng and Huang (1996) that takes *wh*-words in bare conditionals to be indefinite variables.¹⁵ I believe that *wh*-words in bare conditionals do not pose a threat to

¹⁴ Note that the example in (29) is taken from Chierchia (2000) (his (33)) as a generic example to show that if *wh*-words in bare conditionals are indefinites, they ought to be subject to the novelty condition in the antecedent clause as well as in the consequent clause. However, as we will soon see that the example in (29) cannot be used to represent a bare conditional because a bare conditional does not occur with the morpheme *ruguo* 'if'. This means that using a bare conditional to translate (29) is not possible. That is, when we put the morpheme *ruguo* 'if' in front of a bare conditional, we produce an ill-formed sentence:

(i) You yige xuesheng jinlai-le. *You *shei* jinlai, wo jiu gen *shei* dazhaohu.
have one student come-Perf have who come I then with who greet
'A student walked in. If who walks, I will greet who.'

¹⁵ Wanting to dispense with the novelty condition, Chierchia alternatively suggests that the two *wh*-words are existentially bound in the first place, and only later subject to existential disclosure which in turn leaves the *wh*-words bound by a universal quantifier (2000, p.36).

our theory of indefinites. *Wh*-words in bare conditionals are not subject to the novelty condition because they are definites.

The problem of associating the *wh*-word in the antecedent clause of the bare conditional with an old variable in (29) disappears after we take away the morpheme *ruguo* ‘if’ ((30) will be translated into the bare conditional in (31) shortly below):

(30) A student_i walked in. Who_i walked in, I will greet who_i.

As a contrast to (29) which produces an undesired reading in (29’), the sentence in (30) produces a desired reading in (30’) below:

(30’) A student_i walked in. The man_i/He_i walked in, I will greet him_i.

Such a reading is derived by associating the *wh*-word in the antecedent clause of (30) with an old variable introduced by *a student*. The contrast between (29) and (30) also casts doubt on Cheng and Huang’s claim that both *wh*-words in a bare conditional are indefinites and further reveals that it is inadequate to translate bare conditionals into *ruguo* ‘if’-conditionals. When using a *whoever*-sentence to capture the meaning of the intended bare conditional in (30), we get the right result:

(31) You yige xuesheng jinlai-le. Shei_i jinlai, wo jiu gen shei_i dazhaohu.
have one student come-Perf who come I then with who greet
‘A student_i walked in. I will greet whoever_i just walked in.’

Both *wh*-words in the bare conditional in (31) are associated with the old variable introduced by *yige xuesheng* ‘a student’. This is not a property of indefinites. As definites, *wh*-words in bare conditionals can be associated with old variables and are not subject to the novelty condition just as what our theory of indefinites would predict.

2.1.4 The Association of *Wh*-words with Old Discourse Referents

Let us consider the differences between the distribution of *wh*-words in bare conditionals and that of ordinary indefinite NPs and *wh*-words in *ruguo* ‘if’-conditionals with a few more examples. In the theory of Heim (1982), definite NPs carry familiarity presuppositions while indefinites do not.¹⁶ Definites presuppose that there is a corresponding discourse referent in the common ground (familiarity) while indefinites presuppose that there is no such referent (novelty). For instance, in (32) below, the definite NP *the glass* refers to the glass that broke last night and picks up an old referent:

(32) A wine glass broke last night. The glass had been very expensive.

In contrast to definites, indefinite NPs are associated with novel referents. In so far as a speaker wishes to refer to the glass that broke last night, the use of an indefinite NP is infelicitous (see also Roberts 2003):

(33) #A wine glass broke last night. A glass had been very expensive.

¹⁶ It is a commonly held view that a definite description signals a familiar referent. See also Kamp (1981), for instance, for the familiarity theory of definiteness.

The infelicitous use of the indefinite *a glass* to pick up a familiar referent results in a piece of ill-formed discourse shown in (33).

In Chinese, an indefinite *yi*-NP ‘one-NP’ cannot occur in the subject position unless it is preceded by the existential *you* ‘have’ (Chao 1968; Li & Thompson 1981; Huang 1987 and others).¹⁷ The example in (34a) below is ungrammatical simply because the indefinite NP *yi-zhi mao* ‘a cat’ occurs alone without the existential *you* ‘have’:

(34) a. **Yi-zhi mao, bei wode linju sha-le.*
one-CL cat Passive my neighbor kill-Perf
‘A cat was killed by my neighbor.’

b. *You yi-zhi mao, bei wode linju sha-le.*
have one-CL cat Passive my neighbor kill-Perf
‘A cat was killed by my neighbor.’

The proper translation for the English example in (32) requires for the indefinite *yige beizi* ‘a glass’ to be introduced by *you* ‘have’ as shown in (35):

(35) *Zuowan you yige beizi po-le. Nage beizi hen gui.*
last night have one glass broke that glass very expensive
‘A wine glass broke last night. The glass had been very expensive.’

¹⁷ In generic sentences, however, an indefinite *yi*-NP ‘one-NP’ can occur in the subject position without the existential *you* ‘have’:

(i) *Yi-zhi qiangwa si-tiao tui.*
a CL frog four-CL leg
‘A frog has four legs.’

Once introduced, *yige beizi* ‘a glass’ can be picked up by the definite description *nage beizi* ‘that glass’ that has the relevant property.¹⁸ In (35), the definite NP *nage beizi* ‘that glass’ in the second clause refers to the glass that broke last night. In this sense, it picks up an old referent. An indefinite NP cannot serve the same purpose:

- (35') # Zuowan you yige beizi po-le. Yige beizi hen gui.
 last night have one glass broke one glass very expensive
 ‘#A wine glass broke last night. A glass had been very expensive.

Like definites and unlike indefinites, *wh*-words in bare conditionals are able to pick up familiar discourse referents:

- (36) A: You yiwei xuesheng shangxueqi na manfen,
 have one student last semester get perfect score
 rang ta dang banzhang haoma?
 let him be class-leader okay
 There was a student who got a perfect score last semester, let him be
 the class-leader all right?’
- B: Shei shang xueqi na manfen,
 who last semester get perfect score
 jiu rang shei/ta dang banzhang.
 then let who/he serve leader
 ‘Whoever received a perfect score last semester, let him be our class-
 leader.’

¹⁸ Chinese lacks a definite article that has the same function as the English *the*. A definite NP in Chinese indicates reference as in *zhege ren* ‘this man’ or *nage ren* ‘that person’.

Previous analyses which treat *wh*-words as indefinites in bare conditionals would predict that *wh*-words in bare conditionals cannot be associated with a familiar referent. This prediction is not fulfilled as we witness in (36B), the antecedent *wh*-phrase and its anaphoric element pick up a familiar referent--the student who got the perfect score.

Lin (1996) regards the bare conditional in (36B) (a modification of (19b)) as “one-case” bare conditional for being able to admit a consequent pronoun. He argues that bare conditionals that are compatible with a pronoun such as (36B) must be singled out from Cheng and Huang’s “multi-case” bare conditionals that prohibit the presence of a pronoun such as (37) (their translation unaltered):¹⁹

- (37) Shei xian lai, shei/*ta (jiu) xian chi.
who first come, who/(s)he then first eat
‘Whoever comes in first eats first.’

Lin claims that one-case examples such as (36B) can admit a pronoun because there is an actual individual that satisfies the relevant description, while multi-case examples such as (37) prohibit a pronoun because (37) is about possible individuals. He maintains the status of *wh*-words in (37) as indefinites. However, in a similar context as the one we see in (38) in which a relevant individual is introduced to the discourse, even Cheng and Huang’s example in (37) can be felicitously used:

¹⁹ Note that the translation of this sentence provided in Cheng and Huang (1996) reads: *If x comes first, x eats first*. I do not use their translation because it cannot distinguish bare conditionals from *ruguo* ‘if’-conditionals.

(38) A: You yige ren xian lai-le.
have one person first come-Perf
'There is a man who arrived first.'

B: Shei xian lai, shei (jiu) xian chi.
who first come, who then first eat
'Whoever comes first, eats first.'

In (38), the antecedent *wh*-phrase and its anaphoric element in the bare conditional uttered by speaker B pick up an old discourse referent introduced by the indefinite *yige ren* 'a person' (38A). This behavior of *wh*-words in bare conditionals cannot be predicted by the previous analyses that treat them as indefinites. On the contrary, our account takes *wh*-words in bare conditionals as definites and can explain the behavior of *wh*-words in bare conditionals adequately. It should be noted that Cheng and Huang's (also Lin's) translation of the bare conditional for (37) i.e., *If x comes first, x eats first*, is not appropriate in the context of (38). In the previous section, we noted that a bare conditional cannot be adequately translated into a *ruguo* 'if'-conditional. In what follows we will look closely at the behavior of *wh*-words in these two constructions.

2.1.5 Bare Conditionals ≠ *Ruguo* 'if'-conditionals

Bare conditionals and *ruguo* 'if'-conditionals are regarded as indistinguishable in meaning in previous studies. However, once one starts observing the use of these two constructions in discourse, it becomes obvious that they are not at all similar. In a context that supplies a relevant referent as seen in (36) and (38), the use of bare

conditionals is felicitous while the use of *ruguo* ‘if’-conditionals turns out to be rather odd, if not entirely unacceptable:

- (39) A: You yiwei xuesheng shangxueqi na manfen,
have one student last semester get perfect score
rang ta dang banzhang haoma?
let him be class-leader okay
There was a student who got a perfect score last semester, let him be
the class-leader all right?’

?B: Ruguo you shei shang xueqi na manfen,
if have who last semester get perfect score
ta zhe xueqi jiu keyi/bixu dang banzhang.
he this semester then may/must serve leader
‘If there was a student who received a perfect score last semester, he
can be our class-leader.’

In the context set up by (39A), an individual had a perfect score. However, the *ruguo* ‘if’-conditional in (39B) entertains the possibility of the existence of such an individual, and cannot be naturally used in this context without oddity and redundancy. Contrast to the *ruguo* ‘if’-conditional in (39B), the use of a bare conditional is natural and felicitous in the same context that supplies a relevant referent:

- (40) A: You yiwei xuesheng shangxueqi na manfen,
have one student last semester get perfect score
rang ta dang banzhang haoma?
let him be class-leader okay

‘There was a student who got a perfect score last semester, let him be the class-leader all right?’

B: Shei shang xueqi na manfen,
who last semester get perfect score
ta zhe xueqi jiu keyi/bixu dang banzhang.
he this semester then may/must serve leader
‘Whoever received a perfect score last semester can be our class-leader.’

Again, we see that antecedent *wh*-phrases in a bare conditional are able to pick up old discourse referents supplied by the discourse context. In (40B) the antecedent *wh*-phrase picks up the familiar referent, i.e., the student who got a perfect score last semester. Definite NPs are known to pick out contextually salient entities that are known to conversational participants. This cannot be predicted under previous accounts that treat *wh*-words in a bare conditional as indefinites.

Here we observe that *ruguo* ‘if’-conditionals require a context that does not make known a relevant individual with the relevant property, while this does not need to be the case with bare conditionals. These two constructions clearly display very different semantic properties that cannot be captured by previous analyses that treat them as the same.

2.2 Quantification in Bare Conditionals

This section argues that *wh*-words/pronoun in bare conditionals can be uniformly analyzed as definite descriptions that denote the unique maximal plural entity in the sense of Jacobson (1995).

2.2.1 Pronouns in Bare Conditionals ≠ Russellian Definites

Lin (1996) claims that a pronoun in a bare conditional is only possible if there is a unique individual that satisfies the relevant description in the actual world. His idea is inspired by Bertrand Russell's analysis of definite descriptions.

According to Russell (1905), definite descriptions carry a uniqueness implication which separates them from indefinites. In order for an utterance containing a definite description to be true, there must be one and only one individual which satisfies the descriptive content of the definite NP in the actual world. Russell's semantics of definite description asserts both uniqueness and existence. Consider the sentence in (41a) below:

(41) a. The King of France is bald.

b. $\exists x$ (King of France (x) & $\forall y$ (King of France (y) $\rightarrow y = x$) & Bald (x))

In Russell's analysis, for (41a) to be true, the following propositions must be true: (i) there is a King of France (existential commitment), (ii) there is only one King of France (uniqueness requirement), and (iii) he is bald. If any of these are false, then the whole proposition is false. The definite article *the* acts like a quantifier with a uniqueness qualification. With Russell's analysis of definite descriptions in mind, Lin claims that a pronoun, being also a definite description itself, is only felicitous in a bare conditional if it can refer to an actual unique individual that satisfies the description of the bare conditional. To quote the author's words, "when the anaphoric *wh*-phrase is replaced by a pronoun, the antecedent *wh*-phrase must refer to a unique referent" and "the "more than one person reading disappears" (1996, p. 250). But, as we will discuss below, this idea about the felicitous use of Chinese pronouns is incorrect.

According to Lin, multi-case and one-case bare conditionals differ with respect to their compatibility with a consequent pronoun. Multi-case examples allow multiple possible individuals to satisfy the relevant description but one-case examples require that a unique individual has the relevant property in the actual world. For multi-case bare conditionals with two identical *wh*-words, Lin employs an unselective binding analysis to prevent hindering the traditional treatment of *wh*-words as indefinites. For one-case bare conditionals with a consequent pronoun, he suggests three possible approaches to account for the uniqueness and existence requirement imposed by the presence of the pronoun. In sum, Lin avoids treating *wh*-words in bare conditionals as definites and is forced to posit different analyses for a single construction.

So far, we have gathered a number of examples to show that *wh*-words in bare conditionals are definites regardless of the presence of a consequent pronoun. Moreover, a pronoun in bare conditionals does not always have an actual referent as shown in (42):

- (42) Genju xuixiao de guiding, shei shangxueqi na di-yi-ming,
 according school DE rule who last semester get top-one
 ta/shei zhaxueqi jiu keyi dang banzhang.
 he/who this semester then can serve leader
 ‘(According to the rule of the school) whoever had the best score last
 semester can serve as the class leader this semester.

As a generic statement, the pronoun in (42) does not have an antecedent that refers to an actual single unique individual. I believe that we can treat the first *wh*-phrase and its anaphoric element (a pronoun or a *wh*-word) in a bare conditional uniformly as a definite description similar to Jacobson (1995) for English FRs. It is important to emphasize that

although one of Lin's analyses for bare conditionals with a consequent pronoun is also inspired by that analysis, my account will differ from Lin's in two respects: (i) under my account the first *wh*-phrase and any anaphoric element in a bare conditional will uniformly be analyzed as definites, while Lin adopts Jacobson's analysis only as a suggestion for analyzing bare conditionals with a consequent pronoun; (ii) according to Lin, a pronoun in a bare conditional as a definite description requires the existence of a unique relevant individual, while my notion of definites does not commit to existence.

2.2.2 Quantification of English Sentences with FRs-*ever*

A great number of works observe that free relatives in English behave like definite descriptions.²⁰ The most obvious evidence comes from the fact that FRs with or without *-ever* have interpretations paraphrasable by definites or universals (Jacobson 1995; Dayal 1997):

- (43) a. I ordered what he ordered for dessert. (= the thing he ordered for dessert)
b. Do what the baby sitter tells you. (= everything the babysitter tells you)
c. John will read whatever Bill assigns (= everything Bill assigns)

Jacobson (1995), in particular, made an important observation that even when an FR can be paraphrased as a universal, a definite plural captures its meaning just as well:

- (44) Do what (= the stuff/the thing/the things) the baby sitter tells you.

²⁰ Works that consider English FRs to have the semantics of definites include Jespersen 1927, Jacobson 1995, Rullman 1995, Grosu & Landman 1998, Von Stechow 2000, Tiedemann 2005, etc. Note that there are other accounts that treat FRs-*ever* as indefinites (cf. Wiltschko 1998), but I will not consider those analyses here.

Her idea is that the apparent exhaustive interpretation of FRs is a reflection of their maximality. For instance, in (45a) *beans, rice, and tacos* is an exhaustive characterization of the things on my plate while the set of individuals that are on my plate in (45b) does not need to be exhaustive (p. 471):

- (45) a. What is on my plate are beans, rice and tacos.
 b. Beans, rice and tacos are on my plate,

Jacobson provides a unified analysis for FRs that allows for both singular definite and universal-like readings. She proposes to treat an FR as a definite description denoting a maximal plural entity. A maximal plural entity is an entity with the property P which is composed of all other entities with property P. Such an entity can be seen as a special kind of individual (cf. Link 1983). A plural entity includes the atomic (singular) entities as well as the properly plural entities. If there is only one atomic individual with a given property in a given domain, then the maximal plural entity with that property is the one consisting of just this atomic individual. In (45a), *what is on my plate* is a predicate true of only one thing: the maximal plural entity whose parts are all on my plate.

Following Cooper (1983), Jacobson takes all WH-constituents to denote sets of individuals. An ordinary relative clause like *what John ordered* denotes the set of all individuals that John ordered:

$$(46) \text{ 'what John ordered'} = \lambda X[\text{'ordered'}(X)(j) \ \& \ \forall Y(\text{'ordered'}(Y)(j) \rightarrow Y \leq X)]^{21}$$

²¹ Jacobson's idea can be traced back to Sharvy (1980). ' $Y \leq X$ ' reads as 'Y is included in X'. Jacobson explains that any two plural entities \underline{a} and \underline{b} may be joined to form another plural entity \underline{c} . If $\underline{c} = \underline{a} + \underline{b}$, then \underline{a} is included in \underline{c} (written $\underline{a} \leq \underline{c}$) (Jacobson 1995, p. 472).

The idea is that *what John ordered* characterizes the set of maximal plural entities that John ordered including both the atoms and the null set. Such a set is guaranteed to be a singleton which may be an atom or the null set. The meaning of this FR in (46), a predicative expression, is shifted to have the meaning of a NP via the iota type shifting rule proposed in Partee (1987).²² Applying this operation, we map a property onto the unique individual having that property. Thus, the shifted FR denotes the single individual characterized by the predicate--the maximal plural entity that John ordered. This entity can be singular (= the thing that John ordered), or plural (= the sum of all the things that John ordered). The denotation of the FR *what John ordered* is of type <e> translated as follows:

$$(47) [\text{NP what John ordered}]' = \iota X [\text{ordered}'(X)(j) \ \& \ \forall Y(\text{ordered}'(Y)(j) \rightarrow Y \leq X)]$$

The shifted constituent *what John ordered* has the meaning of a NP. It denotes the unique maximal individual, the maximal plural entity that John ordered. If John ordered only one thing, then this NP will have the meaning of a singular definite. If John ordered more than one thing, then the NP will denote the single entity consists of all other entities that John ordered and so will be like a universal (p. 468). Under Jacobson's analysis, definites are a kind of universal. The universal force comes from the fact that an FR denotes a complex individual that is composed of all atoms with the relevant property. The constituent, *what John ordered*, is a predicate true of only one thing: the maximal

²² This will be mentioned again in Section 2.2.4.

plural entity that John ordered. The universal force of FRs comes from their exhaustive characterization of the things that John ordered.

It is important to point out that Jacobson's analysis allows the null set to be a plural entity. Even if no atomic entity satisfies the FR constituent in the actual world, the FR will still be true of the null set. This accounts for examples such as the following where the FR does not entail existence (Jacobson's (59)):

(48) I read (exactly) what was on the reading list—namely nothing at all.

However, Jacobson admits that in some cases, an FR seems to strongly suggest the existence of something with the relevant property shown below (her (58a)):

(49) Whoever handed in the assignment late failed.

She notes that perhaps it is the context which determines the domain of atoms out of which is composed the plural entity. In contexts where an FR requires existence as with the example in (49), then we say that the null set is not included in the domain. Or, we may say, as pointed out to me by David Beaver (p.c.), that the existence implication arises with the meaning of certain verbs. For instance, the following FR seems to entail existence:

(50) ??What John bought is sitting here on the table--namely nothing at all.

It is rather strange to allow the FR constituent *what John bought* to be true of a null set. Examples such as (48) and (50) may be acceptable when used sarcastically (see also Tredinnick 2005, p. 29). At this point, I am unable to address what exactly is responsible for the existence implication associated with FRs. In any case, it should be quite uncontroversial that FRs do not assert existence when they occur in sentences describing events that have not yet occurred:

(51) Tomorrow, whoever arrives here first will receive a nice present.

Since Strawson (1950), many continue to observe that definite descriptions do not assert existence. For instance, the examples in (52) are felicitous in a context where the White Whale is not sighted (cf. Donnellan 1966; Cheng and Giannakidou 2006):²³

- (52) a. This golden coin belongs to the sailor that sights the White Whale.
b. This golden coin belongs to whichever sailor sights the White Whale.

In Roberts (2003), the analysis of definite descriptions is also based on the observation that the existence and uniqueness in question are not about referents in the actual world, not entailed as Russell had it.²⁴ It appears that existence can be dispensed with morphological definites. For this reason, I take the iota operator to be a maximality operator, not necessarily committed to existence just like in Jacobson's analysis.

²³ The idea here is that definite descriptions can be used attributively rather than referentially.

²⁴ Rather, they are about discourse referents in the common ground of the interlocutors.

2.2.3 Are *Wh*-phrases in Bare Conditionals *mei*-NPs ‘every-NPs’?

It is a commonly held view that *wh*-phrases in bare conditionals are universally quantified expressions equivalent to the *mei* ‘every’-NPs. However, a bare conditional is not always suitable for a paraphrase using *mei* ‘every’-NPs. In some cases, *wh*-phrases in a bare conditional demand a paraphrase using a singular definite. In other cases where a bare conditional has an apparent universal-like reading, substituting the universal with a plural definite does the job just as well. For instance, while the bare conditional in (53a) can be paraphrased using a universal or a plural definite as shown in (53b), the bare conditional in (54a) clearly prefers a paraphrase using a singular definite shown in (54b):

- (53) a. Natian didi henguai,
that day little brother very well-behaved
[mama shou shenme, ta jiu zuo shenme]_{Bare Conditional}²⁵
mother say what he then do what
‘That day little brother was very well-behaved. He did whatever his mother said.’

= b. Mama shou de mei-jian shi/naxie shi, ta dou zuo.
mother say Rel every-CL thing/those things he all do
‘He did everything/those things that his mother said.’

- (54) a. Li xiaojie hen xiang jiaren, bu zaiyi jiagei shei.
Li miss very want get married not care marry who
shuo [shei shuo ta piaoliang, ta jiu jiagei shei/ta]_{Bare Conditional}
say who say she pretty she then marry who/he
‘Miss Li wants to get married very badly and does not care whom she will marry. She said that she will marry whoever says she is pretty.’

²⁵ Chinese poses restrictions on the occurrence of inanimate *ta* ‘it’ in object position.

= b. Li xiaojie hui jiage nage/ ?naxie/ ??meige shuo ta piaoliang DE ren.
 Li miss will marry that-CL/those/every say she pretty Rel man
 ‘Miss Li will marry the man/?those men who say(s) that she is pretty.’

Considering that Miss Li cannot marry everyone who says that she is pretty in the society we live in, (54a) is better paraphrased with a singular definite *nage shuo ta piaoliang DE ren* ‘the man who says that she is pretty’. In cases where *wh*-phrases are anaphoric to a specific definite NP, using a universal *mei* ‘every’-NP to paraphrase a bare conditional becomes inappropriate:

(55) A: Ni gen wo laopuo shuo-le shenme? Ta hen shengqi.
 you with my wife say-LE what she very angry
 ‘What did you tell my wife? She is very angry.’

Shi bu shi gen wo zuo de na-jian shi you guan?
 be not be with I do Rel that-CL thing have relevance
 ‘Does it or does it not have something to do with the thing that I did?’

B: [Ni zuo shenme wo jiu shuo shenme] Bare Conditional. Guai niziji ba.
 you do what I then say what blame yourself BA
 ‘I told her whatever you did (not the ellipsis reading). Blame yourself.’

=B’: Wo ba ni zuo de najian shi/??meijian shi dou gaosu ta.
 I BA you do REL that-CL thing/everything all tell her
 ‘I told her the thing/everything that you did.’

The bare conditional in (55B) paraphrased with *meijian shi* ‘everything’ is inadequate as shown in (55B’), since the antecedent *wh*-phrase and its anaphoric *wh*-word clearly refer

to the thing that speaker A has done. The identity of the thing that speaker B said to speaker A's wife explicitly associates with a definite expression in the context of (55).

2.2.4 A Unified Treatment of *Wh*-words in Bare Conditionals

I believe we can capture the quantification in bare conditionals by borrowing the key ideas of Jacobson (1995). We may say that a Chinese *wh*-constituent as in English can characterize a set of individuals and then is shifted down to denote the single individual characterized by the predicate--the maximal plural entity that satisfies the description of the *wh*-constituent. According to Partee (1987), the way for a property to map into an individual is by what she calls the iota type-shifting rule. This operation maps a property onto one and only one individual. In this way, a predicative expression is shifted into an individual-denoting expression just in case the set characterized by the predicate is a singleton. Since a free relative characterizes a set which is guaranteed to be a singleton (as mentioned in Section 2.2.2 following Jacobson's analysis), it will always be shifted down to denote an individual. To reiterate this, we say that a free relative starts out as a predicative expression of type $\langle e, t \rangle$ (shown in (46)) and then is shifted down to denote an individual of type $\langle e \rangle$ (shown in (47)). Although Jacobson treats FRs as predicative expressions that type-shift to NP meaning, some do not take that extra type-shifting step but assume that FRs directly contributes a maximality operator to the semantics (cf. Rullmann 1995; Tredinnick 2005). In those approaches, the FR *what John ordered* is equivalent to the iota expression shown in (56):

$$(56) \iota x [\text{ordered}(x)(j) \ \& \ \forall y(\text{ordered}(y)(j) \rightarrow y \leq x)]$$

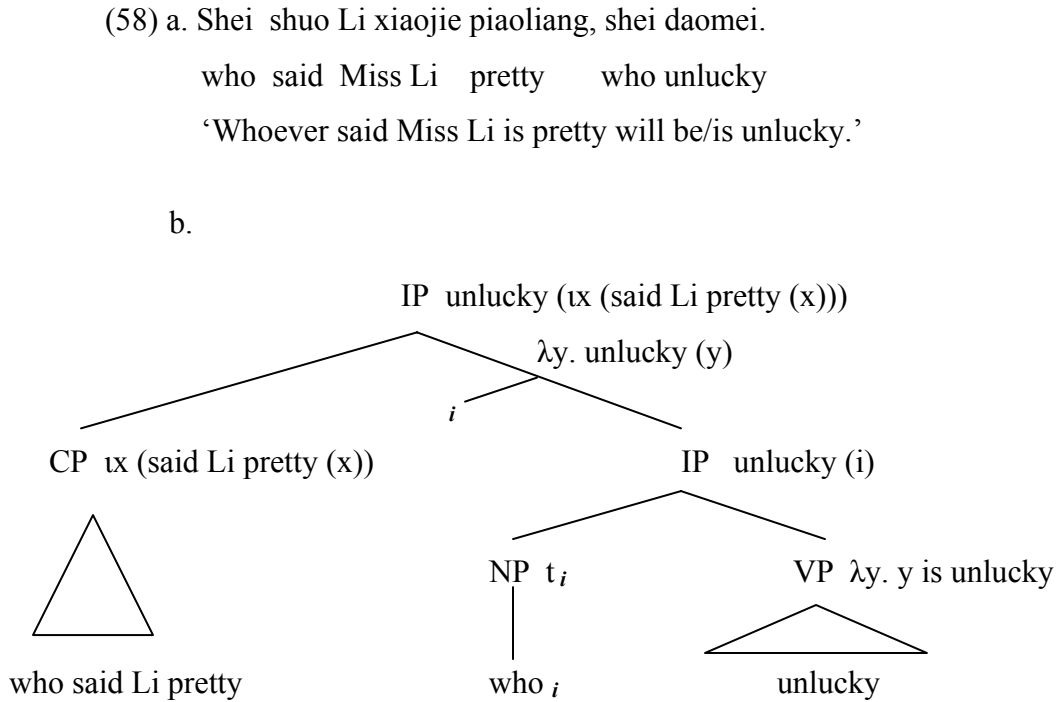
Suppose that we also do not take that extra type-shifting step and translate the first *wh*-clause directly into $\iota x.P(x)$, where x is the maximal plural entity x such that x has the property of P and the expression is denoted by the first *wh*-clause. Here the iota operator is used for both singulars and plurals and is also used as a maximality operator. The first *wh*-clause and its anaphoric element (which can be either a second occurrence of the same *wh*-word or a pronoun) of a bare conditional can be treated as a definite description. The bare conditional (54a) will then have the structure in (57a) and the expression formed by the first *wh*-clause, and together with its anaphoric element (be it a second *wh*-word or a pronoun) will denote (57b):

- (57) a. $[_{CP} \text{shei shuo Li xiaojie piaoliang}]_i [_{IP} \text{ta jiu jiagei shei}_i / \text{ta}_i]$
 who say Miss Li pretty she then marry who/he
- b. $\iota x [\text{say Miss Li is pretty } (x) \ \& \ \forall y (\text{say Miss Li is pretty } (y) \rightarrow y \leq x)]$

The first *wh*-clause and together with its anaphoric element are interpreted as the unique x such that x has the property of *say Miss Li is pretty*. The definite *wh*-expression $\iota x.P(x)$ in the case of (54a) is an atomic entity, a singular definite. Alternatively, $\iota x.P(x)$ can be an entity that consists of more than one atom and so it will be like a plural definite deriving a universal-like reading as in (53a).

The question now becomes how the pronoun/*wh*-word in the second clause is linked to the first *wh*-clause. We have said that a bare conditional is ambiguous between a singular definite and a plural definite (universal) reading. The first clause is a definite

expression $\iota x. P(x)$.²⁶ This iota expression can pick up either a unique singular (a singular definite reading) or a unique plural individual (a universal reading). So far, Jacobson's analysis works well in explaining the quantification in bare conditionals. We can consider that in a bare conditional the first clause is an iota expression and that the anaphoric *wh*-word (or a pronoun or an empty pronoun) in the second clause receives a bound variable interpretation.²⁷ For instance, the sentence in (58a) will have the LF in (58b):



In (58b), the first clause is an iota expression that has been raised and the *wh*-word/pronoun/empty pronoun in the second clause will be its trace. We get the effect of

²⁶ Note that this is also consistent with von Stechow's analysis (2000) in which an *-ever* phrase is interpreted as $\iota x. P(x)$.

²⁷ This is similar to the bound-variable treatment for the pronoun in *John hates his father* discussed in Heim and Kratzer (1998) in that *John* is quantifier raised and the pronoun carries the same index as the trace of *John*. I thank David Beaver for the discussion here. All faults are mine.

bound variable reading with the adjoined index being the variable binder that performs predicate/lambda abstraction. The denotation of the *wh*-word in the second clause varies in different contexts with different assignments. The whole sentence gets the meaning of “unlucky (λx (say Li pretty (x))).”

It is important to note that $\lambda x.P(x)$ denoted by the *wh*-constituent and its anaphoric element in a bare conditional does not commit to existence just like in Jacobson’s analysis for English FRs. In (54a) (also (57a)), even if there is no individual in the actual world who said Miss Li is pretty, the first *wh*-constituent and its anaphoric element will still be suitable for a paraphrase that takes the form *nei*-NP ‘that-NP’ referring to some hypothetical individual. This is to say that the first *wh*-constituent and its anaphoric element can be used to signal definiteness. Provided we take definite NPs in Chinese to be phrases of the form *nei*-NP ‘that-NP’ or *zhe*-NP ‘this-NP’ (Section 2.1), the first *wh*-constituent and its anaphoric element in a bare conditional will be definite even if no individual satisfies relevant descriptions in the actual world.

In Chapter 3 (Section 3.4.3) we will show that using relative clauses with a relativizer is not the most productive strategy for modifying nouns in Chinese. It will become clear that in the absence of a relativizer, the first clause of a bare conditional nevertheless has the meaning of a relativized NP. Chapter 3 will also show that bare conditionals differ from English FRs with respect to their structures and their default modal flavors. Then, in chapter 4, we will discuss the theoretical consequences of treating the pronoun *ta* ‘he/she’ in bare conditionals as a bound variable.

2.3 Predictions and Implications of the Present Account

This section discusses some advantages of the present account. First, *wh*-phrases used as anaphoric definites that previous accounts posited to be non-existing are found in naturally occurring data. Such uses of *wh*-phrases are completely predictable under our present account. Another advantage of the account proposed here is the implication it bares for the study of the distribution of *wh*-phrases in Chinese.

2.3.1 *Wh*-phrases as Anaphoric Definites in Naturally Occurring Examples

Previous analyses of *wh*-words in bare conditionals as indefinites bound by a universal-like operator are grounded on the firm belief that *wh*-phrases cannot be definite (Cheng and Huang 1996; Lin 1996). Lin (1996) ponders from which I quote liberally: “It is impossible to use another *wh*-phrase to refer back to the antecedent *wh*-phrase. This strongly indicates that *wh*-phrases cannot be used as anaphoric definite NPs.” Consider the example he provides (p. 237):

(59) A: Dagai shi shei you rer laoshi shengqi le.

Probably be who again make teacher angry PAR

‘Probably somebody made the teacher angry again.’

B: Wo kan bacheng na-ge ren/*shei shi Wang Da-zhong.

I see 80% that-CL man/who be Wang Da-zhong

‘I guess that that person is probably Wang Da-zhong.’

Lin explicates that in (59A), the *wh*-phrase is an existential polarity item meaning someone/somebody.²⁸ The referent denoted by that *wh*-phrase is referred back by a definite NP such as *na-ge ren* ‘that person’ as in (59B) but it is not possible to use another *wh*-phrase to refer back to the antecedent *wh*-phrase. From this Lin concludes that *wh*-phrases in Chinese cannot be used as anaphoric definite NPs.

What is missing in Lin’s discussion is the fact that *wh*-phrases in Chinese CAN be anaphoric definites. A *wh*-phrase in Chinese can be seen used as an anaphoric definite NP typically in contexts where the identity of its referent is unknown to a speaker.²⁹ A modification of Lin’s example in (59) above illustrates this point:

(60) A: Dagai shi shei you rer laoshi shengqi le.
 Probably be who again make teacher angry PAR
 ‘Probably somebody made the teacher angry again.’

B: Wo kan bacheng shi na-ge ren/shei, wo wang-le tade mingzi.
 I see 80% be that-CL ren/who, I forgot-LE his name
 ‘I guess it’s probably that person, I forgot his name.’

In (59) it is impossible to use another *wh*-phrase to refer back to the antecedent *wh*-phrase because the identity of the referent of the definite *wh*-phrase is revealed as *Wang Da-zhong*. Contrary to (59B), the identity of the referent expressed by the *wh*-phrase is unknown in (60B) and the use of a *wh*-phrase as an anaphoric definite NP is felicitous.

²⁸ The various interpretations of *wh*-words as non-interrogative existential indefinites are discussed in Chapter One of this dissertation (Section 1.4).

²⁹ Sometimes an anaphoric definite *wh*-phrase is used by a speaker when she does in fact know the identity of its referent but is not revealing it.

Let us term this use of *wh*-phrases as anaphoric definite NPs “the ignorance use of *wh*-words” just like the way von Stechow (2000) discusses ignorance FRs with *-ever*. When a speaker has a person in mind but is unable to properly identify the name of that person, she may use *shei* ‘who’ to signal just that:

- (61) Ni xihuan DE neige shei, gancai dadianhua lai-le.
you like DE that who minute ago call come-Perf
‘Whoever you like called a minute ago.’

Likewise, in (62) below, the use of *shei* ‘who’ is judged by native speakers as an indicator of a speaker’s inability to utter the person’s name for whatever reason:

- (62) Yuna xiang gen neige shei shuohua, keshi shei you bu li ta.³⁰
Yuna want with that who talk but who then not bother her
‘Whoever Yuna wanted to talk, he didn’t want to pay attention to her.’

In (61), *shei* ‘who’ is preceded by the determiner *neige* ‘that-CL’ but no determiner precedes *shei* ‘who’ in (62). In these examples, *shei* ‘who’ and *neige shei* ‘that-CL who’ are used to signal that the speaker does not know or cannot identify the individual in question. Below are more naturally occurring examples of the ignorance use of *wh*-phrases:

³⁰ I overheard this example from the conversation between two native speakers of Mandarin. This utterance is produced by Yijing Lai in Winter 2007.

(63) a. Tingshuo guo le wo shi na-ge shei de nuer,
 hear Perf ASP I be that-CL who Possessive daughter
 xianzai wo yizhuang bitingde zuo zai zheli, ni hai jide wo ma?³¹
 now I cloth straight sit at here you still remember I MA
 ‘You have heard that I am that person’s daughter, now I am sitting here in
 suit and tie. Do you still remember me?’

b. Wo ganggang zai xi yifu, Nagoya wen wo:
 I minute ago Prog wash clothes Nagoya ask I
 “Na-ge shei jiao shenme mingzi ya?”
 that-CL who call what name YA
 Wo gaosu ta: “wo buzhidao na-ge shei jiao shenme mingzi”³²
 I tell he/she I not know that-CL who call what name
 ‘A minute ago I was washing clothes, Nagoya asked me: “what’s that
 person’s name?” I told her: “I don’t know what that person’s name is.”’

Other examples of *wh*-phrases/words in CBCs besides *shei* ‘who’ and *shenme* ‘what’ as anaphoric definite NPs are added as follows:

(64) A: Ni qu nail?
 you go where
 ‘Where did you go?’

B: Ni qu nali, wo jiu qu nali/nali.³³
 you go where I then go where/there
 ‘I went wherever you went.’

³¹ <http://blog.roodo.com/lichen/archives/7325539.html>

³² <http://mypaper.pchome.com.tw/jenniferjeng/post/1320399507/>

³³ When *nali* ‘where’ is pronounced with the forth tone on *na*, it means *that place*.

(65) A: Ni bu gai he zheme zui!
 you not should drink this drunk
 ‘You shouldn’t get so drunk!’

B: Wo shenmeshiho xiang hejiu, wo jiu shenmeshiho/nageshihou hejiu.
 I when want drink I then when/that time drink
 ‘I drank whenever I felt like.’

(66) A: Ni zenme zuo de?
 We how do DE
 ‘How did you do it?’

B: Ni zenme shuo, wo jiu zenme/nayang zuo.
 you how say I then how/that way do
 ‘I did however you said to do.’

Although Lin does not find any independent evidence to show that *wh*-phrases/words can be anaphoric definites, we have naturally occurring examples to prove that *wh*-phrases/words can in fact be anaphoric definites. Under our present analysis, the use of *wh*-phrases/words as anaphoric definite NPs is completely predictable.

2.3.2 An Implication for the Study of *Wh*-phrases and Bare Nouns in Chinese

Non-interrogative existential *wh*-phrases in Chinese such as *shei* ‘who’ and *shenme* ‘what’ may receive an interpretation meaning *somebody* and *something*. They typically occur in environments such as negation, questions, *if*-clauses, etc. as shown in (67a-c) respectively (cf. Huang 1982; Cheng 1991, 1994; Li 1992; Lin 1998):

- (67) a. Mei you shei yuanyi bang ta.
 not have who willing help him
 ‘There is nobody who is willing to help him.’
- b. Shei you qifu ni le ma? (Yes-no Question)
 who again bully you Asp Q
 ‘Did somebody bully you again?’
- c. Ruguo ni you shenme haochi de dongxi, . . .
 if you have what tasty DE thing
 ‘If you have something good to eat, . . .’

In addition, non-interrogative existential *wh*-phrases may also appear in modality environments or “some sort of future environments” (cf. Lin 1998):

- (68) a. Keneng/xiangbi shei you qifu ta le
 possibly/most probably who again bully him Asp
 ‘Possibly/most probably, somebody bullied him again.’
- b. Wo mingtian hui qu mai ge shenme dongxi song ta de
 I tomorrow will go buy CL what thing give him Par
 ‘I will go to buy something for him.’

Although the range of environments where existential *wh*-phrases can be found is quite wide, Lin (1998) claims that their distribution can be described with the following generalization (his (34), where EPW stands for Existential Polarity *Wh*-phrases):

(69) Non-Entailment-of-Existence Condition on Existential Polarity *Wh*-phrases:

The use of an EPW is felicitous iff the proposition in which the EPW appears does not entail existence of a referent satisfying the description of the EPW.

While (69) predicts well that existential *wh*-phrases can be found in the environments listed in (67-68), it cannot cover the distribution of *wh*-phrases in bare conditionals. When used as a statement to describe a fact, a bare conditional may suggest the existence of some individual satisfying the description of the conjuncts as shown in (40B), (53a), and (55B), for instance. This is exactly what his generalization in (69) does not permit. Being aware of this fact, Lin concludes that “indefinite” *wh*-phrases in bare conditionals and existential *wh*-phrases might not be of the same kind. So the nature of *wh*-phrases in bare conditionals remained a mystery.

What has not been formally acknowledged in the literature is the use of non-interrogative definite *wh*-phrases such as those discussed in Section 2.2.4. If we convince ourselves that non-interrogative *wh*-phrases can be definites in bare conditionals (meaning *the thing(s)* or *the person(s)*, etc.) or indefinites in the environments listed in (67-68) (meaning *something*, *someone*, etc.), then we no longer expect (69) to be able to cover *wh*-phrases in bare conditionals. For (69) is made based solely on the distribution of indefinite *wh*-phrases. If any generalization is to be made, it must be made while keeping in mind that non-interrogative *wh*-phrases may also be definites.

Given that a question sentence is formed by replacing ordinary NPs with question words, it is reasonable to assume that *wh*-phrases such as *shenme* ‘what’, *shei* ‘who’ and

nali ‘where’ are pro-forms of ordinary NPs (Li and Thompson 1981; Lin 1999).³⁴

Consider again question sentences in Chinese (15) repeated here below in (70-71):

(70) Question: Ni qing shei chi fan?
you invite who eat food
‘Whom did you invite to eat?’

Answer: Wo qing Zhangsan chi fan.
I invite Zhangsan eat food
‘I invite Zhangsan to eat.’

(71) Question: Ni zai chi shenme?
you Prog eat what
‘What are you eating?’

Answer: Wo zai chi xiangjiao.
I Prog eat banana
‘I am eating a banana.’

If we assume that *wh*-phrases are pro-forms of ordinary NPs, then the fact that *wh*-phrases such as *shenme* ‘what’ and *shei* ‘who’ may have indefinite or definite interpretation depending on context will come at no surprise. A number of recent studies suggest that bare NPs in Chinese can receive either an indefinite or a definite interpretation depending on pragmatic factors. For instance, Yang (2001) shows that in a

³⁴ Lin (1999) still regards Mandarin *wh*-phrases as indefinites, although that study attempts to account for the double-quantification phenomenon exhibited by bare conditionals by assimilating *shenme* ‘what’ to kind-denoting NPs which are definites. Note that Lin evokes Krifka (1995) to support his claim that Mandarin bare NPs are kind-denoting predicates just like English bare NPs. However, some refute the view that English bare NPs are kind-denoting (see Krifka 2004 for an overview of those approaches).

context where it is pragmatically odd, the indefinite reading of bare NPs “peeks out” as the only possible interpretation as shown in the following example:

- (72) *Gou zai meigeren-de houyuan-li jiao.*
dog at everyone-DE backyard-inside bark
‘Dogs are barking in everyone’s backyard.’
#‘The dog is barking in everyone’s backyard.’

Given that it is pragmatically unsound that a particular dog can be barking in everyone’s backyard, the definite reading of *gou* ‘the dog’ is excluded. In the following examples the bare NP *gou* ‘dog’ and *jingcha* ‘police’ can also have either a definite or an indefinite interpretation (p. 31):

- (73) *Waimian/Yuanchu gou zai-jiao.*
Outside far-away dog be-barking
‘Outside, dogs/the dog(s) are/is barking.’
- (74) *Jintian jingcha zhua ren le.*
today cop arrest man Asp
‘Today cops/the cop(s) arrested some people.’

Like ordinary bare NPs, *wh*-phrases may be indefinite or definite. *Wh*-phrases may be indefinites and subject to a number of licensing conditions as discussed in the literature but clearly they may also exhibit properties of definites. *Wh*-phrases are compatible with the existential marker *you* ‘have’ in *ruguo* ‘if’-conditionals as indefinite (27) (repeated

here in (75)) but not in bare conditionals where they pattern with definites in (25) (repeated here in (76)):

(75) Ruguo *you* *shei* xian lai, ta (jiu) xian chi.
if have who first come, who then first eat
'If someone comes first, he then can eat first.'

(76) **You* shei xian lai, shei (jiu) xian chi.
have who first come, who then first eat
'Whoever comes first, eats first.'

A bare NP also has the option of being preceded by the existential marker *you* 'have':

- (77) a. Jintian jingcha zhua ren le.
today cop arrest man Asp
'Today cops/the cop(s) arrested some people.'
- b. Jintian *you* jingcha zhua ren le.
today have cop arrest man Asp
'Today there were/was cops/a cop arrested some people.'

Bare NPs may also be preceded by a determiner such as *nei*-NP 'that-NP' and *zhe*-NP 'this-NP' and receive a definite interpretation.

At this point it seems safe for us to conclude that the puzzle behind the distribution of *wh*-phrases can be solved based on two assumptions: (i) *wh*-phrases such as *shenme* 'what' and *shei* 'who' are pro-forms of bare NPs; (ii) *wh*-phrases like bare NPs can receive either an indefinite or a definite interpretation depending on contexts. Lin's

generalization in (69) is a generalization for non-interrogative indefinite *wh*-phrases. It is understandable that it will not cover non-interrogative definite *wh*-phrases.

2.4 Conclusion

In this chapter I argue that unlike indefinites that are known to pick up the quantificational force of whichever adverb of quantification they are in the scope of, *wh*-words in bare conditionals do not have a QV-reading in the presence of quantificational adverbs. In addition, *wh*-words in bare conditionals also possess the following properties of definites: (i) they cannot be preceded by the existential verb *you* ‘have’ unlike indefinite NPs; (ii) they are not subject to novelty condition while indefinites are; (iii) they can pick up old discourse referents, an ability exhibited by definites, not by indefinites. I propose a unified treatment based on the analysis of Jacobson (1995) for English FRs (see also Srivastav 1991 for Hindi left-adjoined correlatives) to capture the quantificational force of *wh*-phrases in bare conditionals. The antecedent *wh*-phrase and its anaphoric element, which may be a pronoun or a *wh*-word, are uniformly treated as definites denoting a maximal plural entity. This maximal plural entity can be an atomic entity resulting in a singular definite reading. Alternatively, it can be an entity that consists of more than one atom deriving a universal-like reading. Previous accounts of *wh*-phrases do not consider the fact that *wh*-phrases can be definites and leave behind pieces of puzzles as a result. The present account is able to predict the existence of anaphoric definite *wh*-phrases in naturally occurring data. It also bears an implication for the study of the distribution of Chinese *wh*-phrases for being able to provide an explanation to the puzzle raised in Lin (1998).

Chapter 3

Modal Implications in Chinese Bare Conditionals: A Comparison with English *Whatever*

3.1 Introduction

This chapter examines modal implications in Chinese Bare Conditionals, a topic that has not been discussed in previous accounts. It draws comparison with English FRs-*ever*. Von Fintel (2000) argues that the morpheme *-ever* presupposes ignorance (not knowing) or indifference (not caring).³⁵ The ignorance reading results from a variation over the denotation of the free relative across a speaker's epistemic worlds and the indifference reading results from a variation over the denotation of the free relative across counterfactual worlds. I show that like FRs-*ever*, Chinese Bare Conditionals may be used to signal ignorance and indifference. However, unlike FRs-*ever*, Chinese Bare Conditionals necessarily force a causal interpretation of the conjuncts and always contribute an indifference presupposition which is also an entailment in the presence of a counterfactual mood. In embedded contexts, the indifference reading enters the truth conditional content, while the ignorance reading of Chinese Bare Conditionals must be accommodated in the global context. In the absence of a morpheme that functions to signal indifference, Chinese Bare Conditionals rely on the mechanism of common sense

³⁵ The notion of “indifference” has several related meanings. In von Fintel's analysis, the “indifference” use of *whatever* mainly concerns an agent's indifferent attitude. It conveys a kind of indifference on the part of an agent signaling that he or she does not care. In 3.4 we will discuss instances where *whatever* conveys “indifference” without reference to an agent's/a speaker's attitude. This contrasts with the “indifference” use of bare conditionals which always implies an agent's or a speaker's indifference.

to derive a casual interpretation between two clauses that produces the indifference reading.

This chapter is structured as follows: Section 3.2 reviews the analysis of FRs-*ever* proposed in von Fintel (2000). Then, it shows that modal implication of ignorance associated with *whatever* is not a classic case of presupposition, but an implicature that is accommodated when certain conditions for the use of *whatever* are met in the common ground. Section 3.3 discusses modal implications in Chinese Bare Conditionals. It argues that this construction always entails indifference due to the obligatory presence of a causal interpretation between two conjuncts. Section 3.4 proposes to capture the agent's/speaker's indifference reading of bare conditionals with von Fintel's semantics of *whatever*, but suggests that his analysis may not be well-suited for *whatever* after all. Then, it addresses the problem with translation between *whatever*-sentences and bare conditionals.

3.2 Modal Implications of English FRs-*ever*

This section provides an overview of recent advancements in the study of the meaning of English FRs-*ever* focusing on their modal implications. It takes the contribution of Dayal (1997) and von Fintel (2000) as the basis of the discussion, while it attempts to make clear the point that modal implication of ignorance associated with *whatever* is not a classic case of presupposition. Rather, the implication of ignorance can only be accommodated when certain conditions for the use of *whatever* are met.

3.2.1 Dayal (1997) and von Fintel (2000)

FRs-*ever* are unlike their plain FRs counterpart because the morpheme *-ever* contributes an additional modal flavor to an utterance which otherwise is lacking with plain FRs without *-ever*. Dayal (1997) takes the role of the morpheme *-ever* as an indicator of a speaker's ignorance (see also Elliott 1971, Jacobson 1995, Dayal 1997, and among others). The sentence in (78a) but not the one in (78b) can have the following paraphrase: "I don't know what Arlo is cooking but the thing whatever it is that Arlo is cooking has a lot of garlic in it":

- (78) a. There's a lot of garlic in whatever Arlo is cooking.
- b. There's a lot of garlic in what Arlo is cooking.

The contrast between plain FRs and FRs-*ever* with respect to their association with a speaker's ignorance is highlighted using the *namely* test:

- (79) a. *Whatever Mary is cooking, namely ratatouille, uses onions.
- b. What Mary is cooking, namely ratatouille, uses onions.

According to Dayal, *whatever* asserts that the speaker cannot identify the referent of the FR that denotes the thing that Arlo is cooking. Nevertheless, von Stechow (2000) notices that *whatever* does not always make an epistemic assertion. In embedded contexts, *whatever* does not contribute "epistemic certainty to the assertion of the sentence" (p. 4):

- (80) Unless there's a lot of garlic in whatever Arlo is cooking, I will eat out tonight. [\neq Unless I'm sure that there's a lot of garlic in what Arlo is cooking, I will eat out tonight.]

It appears that there is no embedded epistemic assertion in (80) as von Fintel points out. Also, the “presupposition” of speaker ignorance as to the denotation of the FR projects to the matrix level (p.5). This motivates von Fintel to assume a presupposition of ignorance as to the denotation of the FR, thus replacing Dayal’s “assertion of ignorance.”³⁶ In addition, he identifies an indifference presupposition associated with *-ever* in the following example (his (17)):

(81) I grabbed whatever tool was handy.

The preferred reading in (81) signals that the speaker grabbed the tool that was handy and he did so indiscriminately. Similarly, the sentence in (82a) has the flavor of an indifference reading saying that Zack indiscriminately voted for the person at the top of the ballot. Its paraphrase can be derived in (82b):

- (82) a. Zack simply voted for whoever was at the top of the ballot.
b. Zack voted for the person that was at the top of the ballot, and if a different person had been at the top of the ballot, Zack would have voted for that person.

Von Fintel provides *whatever* with a semantics that takes the primary contribution of the morpheme *-ever* to be the presupposition of variation with respect to the referent expressed by the free relative. When the modal base is epistemic, variation results in the ignorance reading (concerns speaker’s epistemic uncertainty). When the modal base is

³⁶ This view, that *whatever* “presupposes” ignorance, is solely von Fintel’s. However, as we will soon clarify in 3.2.2, *whatever* neither entails ignorance nor presupposes ignorance.

counterfactual, the same variation results in the indifference reading. Just like the modal auxiliary *must* can take on epistemic readings and deontic readings (following Kratzer 1991), *whatever* can take on ignorance or indifference readings depending on the modal base supplied. Von Fintel provides the following analysis for *whatever*:

- (83) *whatever* (w) (F) (P) (Q)
presupposes: $\forall w' \in \min_w [F \cap (\lambda w'. \iota x. P(w')(x) \neq \iota x. P(w)(x))]$:
 $Q(w')(\iota x. P(w')(x)) = Q(w)(\iota x. P(w)(x))$
asserts: $Q(w)(\iota x. P(w)(x))$

The world of evaluation is w . F is the modal base.³⁷ P is the free relative expression and Q is the matrix clause expression. The **min**-operator triggers an existential presupposition that there are worlds in its argument and derives a presupposition of variation. It ensures that the domain of quantification is non-empty and that the worlds quantified over differ minimally from one another. *Whatever* presupposes that all of the worlds in the modal base F that are minimally different from the actual world where the FR is different from that in the actual world are such that the truth of the whole sentence is the same as in w . Put simply, *whatever* says that for all worlds w' in the modal base in which the identity of the FR referent is different from what it is in the actual world, the proposition has the same truth value in both w' and w . So, (83) simply says that regardless of what $\iota x. P(x)$ is in all w' minimally different from w with respect to F the

³⁷ The modal base F is assumed to be provided by context following Kratzer (1977, 1981, 1991).

modal base, the proposition $Q(P(x))$ will have the same truth value in both w and w' . At the level of assertion, an FR with *-ever* is identical to an FR without *-ever*.³⁸

Depending on the modal base provided by context, a counterfactual modal environment will give rise to an indifference reading.³⁹ The quantification is over counterfactual worlds which differ minimally from the actual world. In (82a), *whoever* presupposes the following: in all counterfactual worlds w' which differ minimally from the actual world w in which someone different is at the top of the ballot, Zack votes for that person iff in w he votes for the person at the top of the ballot in w . If a different person has been at the top of the ballot, Zack would have voted for that person. This captures the reading that Zack votes indifferently.

In a similar fashion, we can capture the ignorance reading in (78a). Given von Stechow's analysis, an ignorance reading will be derived in the presence of an epistemic modal supplied by the context and the quantification is over speaker's epistemic alternatives. If the identity of $\lambda x.P(x)$ differs across the epistemic modal base, then the speaker does not know (or is ignorant of) the identity of $\lambda x.P(x)$. On the other hand, if the identity of $\lambda x.P(x)$ remains the same across the epistemic modal base, then the speaker knows the identity of $\lambda x.P(x)$. *Whatever* in (78a) presupposes that in all of speaker's epistemic worlds minimally different from one another, where Arlo is cooking something different, there is a lot of garlic in what he is cooking.

³⁸ As shown in Chapter 2 (see Section 2.2.2), the denotation of the FR *what John ordered* is of type $\langle e \rangle$. Following Jacobson (1995), an FR denotes the single individual characterized by the predicate--the unique maximal individual, the maximal plural entity that John ordered. This entity can be singular (= the thing that John ordered), or plural (= the sum of all the things that John ordered).

³⁹ Just like the modal verb *must* can take on epistemic and deontic readings depending on the modal base supplied by the context, *whatever* can also have ignorance and indifference readings that are products of the context-dependency of modal expressions following Kratzer's research program (e.g. Kratzer, 1991).

3.2.2 The Ignorance Implication of FRs-*ever*: A Clarification

In this section I show that the so-called “ignorance presupposition” is unlike classic cases of presuppositions. It is not something taken for granted in advance as part of the felicity conditions under which a *whatever*-sentence can be meaningfully uttered. Rather, the ignorance implication is more like a Gricean implicature (1975), something that a hearer accommodates to make sense of a speaker’s intention.

Presuppositions are typically identifiable via a standard set of diagnostics.⁴⁰ They typically follow from sentences that contain the embeddings of the presupposed material. For instance, the evidence that (84a) presupposes (84b) comes from the fact that (84b) not only follows from utterances of (84a) but also follows from sentences in which (84a) is embedded:

- (84) a. Mary stopped smoking.
- b. Mary used to smoke.
- c. *Mary didn’t stop smoking.*
- d. *Did Mary stop smoking?*

Presuppositions typically follow from embeddings under negation as in (84c), from embeddings involving questions as in (84d), and from embeddings involving conditionals, etc. There are a great range of constructions that carry presuppositions (presupposition triggers) according to these standard diagnostics.⁴¹ In the case of (84a), the lexical item *stop* triggers the presupposition that *Mary used to smoke*.

⁴⁰ Projection tests are widely used in works on presuppositions like Beaver (1997) and Roberts (1999).

⁴¹ Constructions that carry presuppositions include factive verbs, definite descriptions, names, and demonstratives, etc.

Unlike classic cases of presuppositions (defined under the view of Strawson and Frege, for instance) that are necessary conditions on the meaningfulness of a particular expression, the so-called “speaker’s ignorance implication” is not what is taken for granted in advance as part of the felicity conditions under which a *whatever* sentence can be meaningfully uttered.⁴² For instance, while the use of *whatever* in (85a) below is compatible with a context where the speaker does in fact know the identity of the FR, the presupposition that Nick has a wife triggered by *his* in (85b) cannot be denied:

(85) a. I promised Arlo not to tell you what it is that he is cooking because he wants to surprise you. All I can say is that there is a lot of garlic in whatever Arlo is cooking over there. So be careful.

b. *Nick does not have a wife. His wife is pretty.

Dayal (1997) also observes that modal implications of ignorance and indifference of FRs-*ever* can disappear with plural FRs:

(86) a. I have already returned whatever books you have lent me.

b. John cooked ratatouille and goulash. They both have onions. Therefore, whatever John cooked had onions.

It appears that modal implication of ignorance associated with FRs-*ever* is not a classic case of presupposition. The piece of information that the speaker does not know the identity of the thing in question is not taken for granted as a necessary condition on the

⁴² If we follow Strawson (1950, 1952), then we say that unless Mary used to smoke is true, the question of the truth or falsity of Mary stopped smoking does not arise.

meaningfulness associated with the use of *whatever*. One question may be asked here. Namely, how and when does the ignorance reading arise?

Some may reason that the ignorance implication is more like a Gricean implicature derivable by an interpreter via the Maxim of Quantity. Grice's Maxim of Quantity (1975) includes two parts: (i) Say what is required (Be as informative as required); (ii) Do not say more than is required (Do not be more informative than required). Thus, when the modal base is epistemic, e.g., whenever the identity of the FR-expression is under discussion, any speaker who fails to identify $\iota x.P(x)$, is inviting her hearer to draw an implicature that the identity of $\iota x.P(x)$ is unknown to her. On the other hand, if she knows the identity of the thing in question, then, by the Maxim of Quantity, she should explicitly supply its identity so that the strongest statement can be made given what she knows.

However, as pointed out to me by David Beaver (p.c.), there are many ways for a speaker to fail to provide as much information as possible when the identity of $\iota x.P(x)$ is the question under discussion, for instance, when being asked such a question as "What is Arlo cooking?" As far as the amount of information supplied with regard to the identity of $\iota x.P(x)$ is concerned, there seems to be no difference between one's saying: "*Whatever* Arlo is cooking has a lot of onions," and one's saying: "That gnarly thing Arlo is cooking has a lot of onions." Both answers lead to the implication that the speaker does not know the identity of $\iota x.P(x)$ by the Maxim of Quantity. Clearly, *whatever* has an additional presupposition that other expressions lack.

Beaver (p.c.) suggests that the use of *whatever* requires that certain conditions must be met, or the ignorance implication will disappear. It is reasonable to say that

whatever P presupposes that the speaker cannot say what *P* is. From this, an implication is generated, i.e., the speaker does not know what *P* is. Thus, in normal cases, the ignorance implication is accommodated (as in (78a), for instance), but in special cases like (85a) where this condition is not met, this additional inference is blocked. Alternatively, we may posit that the use of *whatever P* requires for the identity of *P* to be undisclosed in the common ground and so *whatever P* presupposes that the identity of *P* is open in the conversational context. This helps us explain why in (86b), where the identity of *P* is revealed in the common ground, the ignorance implication ceases to arise. Both conditions for the use of *whatever P* just mentioned are weaker claims than von Stechow's presupposition of ignorance. Either *whatever P* presupposes that the speaker cannot say what *P* is, or it presupposes that the identity of *P* is open in the conversational context. Crucially, *whatever P* does not seem to presuppose the speaker doesn't know the identity of *p*. More work is needed in order to capture the invariant meaning of *whatever* and to account for the mechanism responsible for all possible inferences it produces. In any case, one is cautioned not to take the so-called "ignorance presupposition" as a semantic presupposition triggered by the morpheme *-ever*, but as a kind of inference accommodated only when certain conditions are met. The next section presents a brief overview of what we mean by "accommodation."

3.2.3 Accommodation: a Brief Overview

In conversation, speakers often take for granted pieces of information and embed them in various constructions known as the "presupposition triggers" without notifying the hearers. Even though a speaker does not explicitly make the presupposed material as

part of the background information prior to her utterance, a hearer must “accommodate” this missing piece of information, in Lewis’s term (1979).

Beaver and Zeevat (2007) observe that in discourse, where multiple contexts are involved in the interpretation of a complex sentence, accommodations of presupposed materials may take place in either the global or the local context. One of the examples the authors consider involves the presupposition that *Mary has an ex-husband* triggered by the possessive pronoun *her* (their (19)):

(87) If Mary is smart, then her ex-husband will get nothing.

- a. = Mary has an ex-husband. If Mary is smart then her ex-husband will get nothing.
- b. ≠ If Mary has an ex-husband and is smart then her ex-husband will get nothing.
- c. ≠ If Mary is smart then she has an ex-husband and her ex-husband will get nothing.

Even though the hearer may not have known that Mary has an ex-husband prior to the utterance, this missing piece of information must be accommodated to produce a felicitous discourse. In this particular example, global accommodation in (87a) is preferred over the intermediate and local accommodation as shown in (87b) and (87c).⁴³

⁴³ There are other cases where global accommodation is blocked when such a process would produce inconsistency as shown below (from Beaver and Zeevat’s (10)):

(9) I don’t know whether it is raining, but Fred thinks that...

Beaver and Zeevat consider a number of principles that might be used to account for where accommodations occur. For example, global accommodation is generally preferred, accommodation that maximizes logical strength is preferred, and accommodation that leads to the creation of redundancy is prohibited, etc. Readers are referred to their work for details and further references.

Following Beaver & Zeevat (2007), let us say that a presupposition that projects globally is identified with accommodation in the global context:

- (88) If Mary's carrying an umbrella, then she knows that it is raining.
= It is raining. If Mary's carrying an umbrella, then she knows that it is raining.

Here the factive verb "know" triggers a presupposition "it is raining" which projects globally. In the example below, the presupposition "it is raining" is accommodated locally and evaluated as part of the assertion:

- (89) I wonder if it is raining. If Mary's carrying an umbrella, then she knows that it is raining.
= I wonder if it is raining. If Mary's carrying an umbrella, then it is raining and she knows that it is raining.

Most cases of accommodation discussed in Beaver & Zeevat (2007) pertain to presuppositions that are identifiable via a standard set of diagnostics (as mentioned in Section 3.2.2 with the example in (84)). They also typically involve generalized implicatures that follow from general properties of language or the lexicon that are inferences which regularly occur whenever certain lexical items are used. We have mentioned that the ignorance reading conveyed by FRs-*ever* is only an inference not as strong as classic cases of presuppositions (Section 3.2.2). However, in so far as a hearer considers it necessary to take a speaker's use of *-ever* as signaling ignorance in order to make sense of the intention of the speaker, we will take the information that the speaker does not know the identity of the FR-referent to be a good candidate for accommodation.

This is more like a case of accommodation under the account of Thomason (1990). Under Thomason's view, successful accommodation requires that "we first recognize someone's intention to achieve a goal and then establish goals of our own that will assist in achieving this goal" (p. 334). We accommodate whatever is needed to make sense of the speaker's intention to help achieve the joint conversational goals of the interlocutors. Most of Grice's conversational implicatures, then, fall under Thomason's notion of accommodation. It makes sense for us to take modal implications of ignorance and indifference associated with FRs-*ever* to be implications accommodated by a hearer in order to make sense of the speaker's intentions and achieve the communicational goal.

3.2.4 The Projection Behavior of Ignorance and Indifference

While von Stechow pursues the idea that *whatever* is a presuppositional operator, he is aware of the fact that the presupposition of ignorance and indifference behave differently in embedded contexts. What he observed was that the agent indifference presupposition stays inside an *unless*-clause, while the so-called "presupposition of ignorance" projects out of it. This is illustrated in the examples in (90) and (91) below:

(90) Unless Zack simply voted for whoever was at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

= Unless Zack simply voted indifferently for the person at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

≠ Zack simply voted indifferently.⁴⁴ Unless Zack simply voted for the person at the top of the ballot, he must have spent at least 5 minutes in the voting booth.

(91) Unless there's a lot of garlic in whatever Arlo is cooking, I will eat out tonight.

= I'm not sure what Arlo is cooking, but unless there's a lot of garlic in what Arlo is cooking, I will eat out tonight.

≠ Unless I'm sure that there's a lot of garlic in what Arlo is cooking, I will eat out tonight.

In (90), the presupposition of agent's indifference enters the truth-conditions at the embedded level below the *unless*-clause. In (91), speaker's ignorance presupposition projects out to the matrix level. So there appears to be a difference between ignorance and indifference uses as far as their behavior in embedded contexts is concerned.

Taking the primary function of the morpheme *-ever* to be presupposing ignorance and indifference, the result of von Stechow's study is a unified account for the meaning of *whatever*. Though elegant, his analysis leaves one wondering why the so-called "presupposition" of ignorance and indifference behave differently in embedded contexts. In section 3.2.2 we suggested that *whatever* does not presuppose ignorance. Rather, *whatever* seems to presuppose that the speaker cannot say what *P* is, or that the identity of *P* is open in the conversational context. If the identity of *P* is already revealed in the common ground, then the implication of speaker's ignorance does not arise. In any case, a speaker's epistemic state with regard to the identity of *whatever P* belongs to the common ground. When it arises, or when a hearer has a reason to accommodate that the

⁴⁴ Perhaps the sentence *Zack simply voted indifferently* can be better paraphrased as *Zack was indifferent with regard to who he voted for* (David Beaver, p.c.)

speaker does not know the identity of *P*, it is always accommodated to the global context. A speaker's epistemic state is not part of the descriptive content of a sentence that contains *whatever*. It also does not affect the truth conditions of the sentence in which *whatever* appears. This can be shown with the following example where intermediate accommodation of a speaker's not knowing the identity of the thing is not available:

- (92) If there's a lot of garlic in whatever Arlo is cooking, I will eat out tonight.
 = I don't know what it is that Arlo is cooking. If there's a lot of garlic in what Arlo is cooking, I will eat out tonight.
- ≠ If I don't know what it is that Arlo is cooking and there's a lot of garlic in what Arlo is cooking, I will eat out tonight.

There certainly are other reasons for why speaker ignorance projects out of embedded contexts.⁴⁵ Nevertheless, recognizing that the ignorance implication does not appear to be a presupposition is a good starting point.

3.3 Modal Implications in Chinese Bare Conditionals

In this section I discuss modal implications in Chinese Bare Conditionals. I argue that although the ignorance and indifference readings are also available in Chinese Bare Conditionals, this construction always entails indifference. Due to the obligatory presence of a causal interpretation between two conjuncts, the modal base of Chinese

⁴⁵ Tredinnick (2005) elaborates on von Stechow's point and further questions why the presupposition of ignorance *-ever* must project globally. Following general observations made in the literature, she notes that ignorance *-ever* is an epistemic item and behaves differently from denotative and circumstantial modals by virtue of possessing the following properties. Epistemic items (i) contribute to the expressive/nonassertive content of the sentence in which they appear (not affecting the truth conditions of the sentence in which they appear); (ii) appear high in the syntax; (iii) can only be bound by attitude subjects.

Bare Conditionals is counterfactual by default. This is unlike the interpretation of English FRs-*ever* which may vary with contextually supplied modal bases.

3.3.1 Available Readings in Bare Conditionals

Like English *whatever*, Chinese Bare Conditionals may be used to signal ignorance or indifference:

(93) A: Dengyixia shei xian chi?
in a minute who first eat
'Who can eat first in a minute?'

B: *Shei xian lai, shei/ta (jiu) xian chi.*⁴⁶ (Ignorance)
who first come who/s(he) then first eat
'Whoever comes/came first, can eat first.'

(94) A: Didi jintian zenmeyang?
little brother today how
'How is little brother today?'

B: Ta hen guai. *Mama shou shenme, ta jiu zuo shenme.* (Indifference)
he very obedient mother say what he then do what
'He is very obedient. He did whatever his mother said.'

In (93), speaker B is being questioned about the identity of the person/people who can eat first. In response, she uttered a sentence that takes the form of a bare conditional without stating who the person is/who those people are. This makes the ignorance reading of the

⁴⁶ Note that a bare conditional always has an indifference reading. It just happens that in the context of (93), the ignorance reading is a more immediate one.

bare conditional in (93B) the most salient one. The speaker implies that she does not know who will be eating first and that whoever (the person) who comes first, can eat first. In (94), the context is set up in such a way that the bare conditional in B's utterance is used to signal indifference. It expresses the little brother's indifferent attitude towards doing what his mother said. The bare conditional in (94B) has a reading that says that the little brother did what his mother told him to do and he did so indiscriminately.

Although bare conditionals may be used to signal indifference and ignorance just like English FRs-*ever*, these two constructions differ in their default interpretations and their structural characteristics. The rest of this chapter is devoted to bringing out these differences.

3.3.2 The Primary Function of Bare Conditionals as Signaling Indifference

Recall that Dayal (1995) used the *namely*-test to highlight the function of English FRs-*ever* as signaling a speaker's ignorance shown in (79) repeated below in (95a). While *whatever* in (95a) is incompatible with a speaker's revealing the identity of the thing that Arlo is cooking as it flunks the *namely*-test, the bare conditional in (95b) can pass the *namely*-test:⁴⁷

⁴⁷ Just like the sentence containing a plain relative clause in (ib), the bare conditional in (95B) can pass the *namely*-test:

- (i) a. Shei xian lai, shei/ta (jiu) xian chi. Jiushi Dawei!
 who first come who/s(he) then first eat namely David
 'Whoever comes/came first, can eat first. Namely, David!'
- b. Xianlai de ren, xian chi. Jiushi Dawei!
 first come Rel person/people first eat namely David
 'The person/people who come(s)/came first, can eat first. Namely, David!'

Note that while the *namely*-phrase can be inserted in the middle of a sentence that contains a relative clause, it cannot occur in between two clauses in a bare conditional. This contrast between a bare conditional and its relative clause counterpart is shown in (ii) and (iii) below:

(95) a. *Whatever Mary is cooking, namely ratatouille, uses onions.

b. *Shei xian lai, shei/ta (jiu) xian chi.* Jiushi Dawei!
who first come who/s(he) then first eat namely David
'Whoever comes/came first, can eat first. Namely, David!'

The contrast between *whatever* and the bare conditional with respect to their compatibility with speaker's revealing the identity of the thing in question suggests that the primary function of a bare conditional is not to signal ignorance, unlike *whatever*.

In fact, the primary function of a bare conditional is to assert indifference. Consider first the example in (96) below:

(96) *Zuotian shei zai xuanpiao shang, Dawei jiu tou gei-le shei/ta.*
yesterday who is ballot on top David then vote to-Perf what/he
'Yesterday, David voted for whoever appeared on the ballot.'

The default reading in (96) is one that says David voted indifferently. If a different person had been on the ballot, he would have voted for him. The bare conditional in (96) entails that David voted indifferently. It cannot be immediately followed by an utterance

(ii) **Shei xian lai, jiushi Dawei, shei/ta (jiu) xian chi.*
who first come namely David who/s(he) then first eat
'*Whoever comes/came first, namely David, can eat first.'

(iii) *Xianlai de ren, jiushi Dawei, xian chi.*
first come Rel person/people namely David first eat
'The person/people who come(s)/came first, namely David, can eat first.'

The fact that the two clauses that form a bare conditional cannot be separated adds another unique aspect to the structural properties of this construction. A bare conditional simply does not permit two clauses to be separated. Adding any word between the two conjuncts will not produce a well-formed bare conditional:

(iv) **Shei xian lai, wo xiang, shei/ta (jiu) xian chi.*
who first come I think who/s(he) then first eat
'Whoever comes/came first, I think, can eat first.'

which expresses David's strong preference for wanting to vote for a specific candidate as shown in (96'):

- (96') #Shei zai xuanpiao shang Dawei jiu tou shei. Dawei xiang tuo Ma.
who be ballot top David then vote who David want voted Ma.
'He voted for whoever appeared on top of the ballot. David wanted to vote for Ma.'

That bare conditionals entail indifference is further illustrated in the following example:

- (97) A: Dengyixia ni xiang chi shenme?

In a minute you want eat what
'What would you like to eat in a minute?'

B: Ni zhu shenme, wo jiu chi shenme/[e]. Wo bu zaiyi.
you cook what I then eat what/[e] I not care
'I will eat whatever you cook. I don't care.'

B': #Ni zhu shenme, wo chi shenme/[e]. Wo jintian xiang chi xiongzhang.
you cook what I eat what/[e] I today want eat bear paws
'?I will eat whatever you cook. Today I want to eat bear paws.'

Again, the bare conditional in (97B) is not compatible with a speaker's wanting to eat a certain dish as shown in (97B').

3.3.3 The Obligatory Causal Interpretation of the Conjuncts

Lin (1996) notes that two clauses that do not have a causal dependence cannot form a bare conditional. He shows the following example taken from Lǚ (1980):

- (98) *Shei zhan zai nali, shei (jiu) hen gao.
who stand in there who then very tall
‘The person who is standing there, whoever he is, is tall.’

Assuming that there can be no causal link established between someone’s standing there and her being tall, Lin follows Lǚ (1980) and claims that (98) is ungrammatical. Although I agree with Lin that two clauses that do not have a causal dependence cannot form a bare conditional, I wish to emphasize that when a speaker chooses to say (98), she is committed to the existence of the causal link necessarily present in the bare conditional. Though it is hard to imagine a context where (98) can be appropriately uttered, this does not mean that the two clauses in (98) cannot form a bare conditional. In fact, native speakers consider the bare conditional in (98) to be well-formed and it has the interpretation in (98’):

- (98’) Shei zhan zai nali, shei (jiu) hen gao.
who stand in there who then very tall
‘Whoever stands there, (then) will become/became tall.’

A context where (98’) occurs would be the case in which a ‘magical transformer pad’ can turn someone into a tall person, or in which a ‘house of mirrors’ can make someone look like a tall person.⁴⁸ It is true that the same bare conditional cannot have the reading in

⁴⁸ I thank David Beaver for the example.

(98), a mere speaker's ignorance reading without implying causality. What we must emphasize here is that the two conjuncts in (98) can still form a bare conditional, and that (98) is grammatical on the reading in (98').

The causal interpretation between common real-world events such as the dropping of a glass causing it to break, results from a number of factors. Those factors include the fact that the events in question can be interpreted sequentially, or the fact that our world knowledge supports the interpretation where by dropping glass made objects causes them to break (cf. Dancygier 1998). It is unlikely that such a 'magical transformer pad' exists in the real world. What we are claiming here is simply that when someone utters (98'), the causal interpretation is there for us to grasp even though such a causal link does not seem justifiable at first given what we know about the world. While Lin observes that two clauses that do not stand in a causal relation cannot form a bare conditional, his study does not show that (98) is grammatical and that the causal interpretation is always present in a bare conditional. Whenever a speaker chooses to say (98), she is committed to the causal link between someone's standing there and her being tall.

A bare conditional necessarily forces a causal interpretation to exist between two clauses that form it. This is the case even when a bare conditional is used to signal ignorance as revealed in the English translation in A's response in (98'') below:

(98'') Q: Shei hen gao?

who very tall

'Who is tall?'

A: Wo bu zhidao. Shei zhan zai nali, shei (jiu) hen gao.

I not know who stand in there who then very tall

‘I don’t know. Whoever stands there, (then) is tall/is thus tall.’

That two conjuncts in a bare conditional must be interpreted as causally linked can be further illustrated with the following example:⁴⁹

(99) a. David: Nick mei(-le) shenme, wo jiu mai shenme/na xie dongxi.

Nick bought what I then bought what/those things.

‘I bought whatever Nick bought.’

b. David: Meiyang Nick mei de dongxi wo dou mai.

every-CL Nick buy DE thing I all buy

‘I bought everything Nick bought.’

c. *Context A*: Nick bought wine, pizza, and cigarettes. David also bought those things but didn’t know what Nick bought.

d. *Context B*: Nick bought wine, pizza, and cigarettes. David knew what Nick bought and to please Nick, David also bought the same things.

The bare conditional in (99a) cannot be used in context A in (99c) where there is no essential connection between Nick’s buying something and David’s buying the same thing, while the ordinary *mei* ‘every’-expression in (99b) can. Context B in (99d) suggests that there is a causal link between Nick’s buying something and David’s buying the same thing, and David’s utterance in (99a) is well-suited for this context. Bare conditionals can be associated with modal flavors of ignorance and indifference like English *whatever*-sentences. However, it is important to point out that bare conditionals

⁴⁹ This example is due to David Beaver (p.c.).

necessarily force a causal interpretation of the conjuncts, while English *whatever*-sentences do not. This is evidenced by the fact that the bare conditional in (99a) cannot be used in context A (99c) while the English *whatever*-sentence can.

One may wonder why the causal link is always present in bare conditionals. In Section 3.4 we will examine the structure of bare conditionals in detail and return to this question. Given that causation is commonly associated with counterfactual reasoning (cf. Lewis 2000), for now, it suffices to say that bare conditionals necessarily force a causal interpretation to exist between two conjuncts and they have a default counterfactual modal base.

3.3.4 The Indifference Entailment

The requirement of a causal interpretation imposed by bare conditionals is further revealed in embedded contexts where the indifference presupposition enters the truth content of the *unless*-clause:

- (100) Chufei mama shou-le shenme, ta jiu zuo shenme, ta baba hui ma ta.
 unless mother say-Perf what he then do what his father will scold him
 ‘Unless he did whatever (his) mother said, his father will scold him.’

= Chufei didi guaiguai zuo mama shou de, ta baba hui ma ta.
 unless little brother obediently do mother say DE his father will scold him
 ‘Unless little brother did indifferently what his mother told him to do irrespective of what the thing was (those things were), his father will scold him.’

The bare conditional in (100) says that unless the little brother indifferently did the thing(s) that his mother told him to do irrespective of what the thing was (those things were), his father will scold him. The default interpretation of a bare conditional always concerns an agent's/a speaker's indifferent attitude towards. The modal implication of indifference is part of the assertive content of a bare conditional. In (100), the indifference implication is accommodated below the *chufei*-‘unless’ clause. The ignorance implication, on the other hand, projects out of the *chufei*-‘unless’ clause:

(100') Chufei mama shou shenme, ta jiu zuo shenme, ta baba hui ma ta.
 unless mother say what he then do what his father will scold him
 ‘Unless he did whatever (his) mother said, his father will scold him.’

a. ≠ Chufei wo bu zhidao didi zuo shenme,
 unless I not know little brother do what
 didi guaiguai zuo mama shou de, ta baba hui ma ta.
 little brother obediently do mother say DE his father will scold him
 ‘Unless I don’t know what little brother did and he did indifferently what
 his mother told him to do, his father will scold him.’

b. = Wo bu zhidao didi zuo shenme, chufei
 I not know little brother do what unless
 didi guaiguai zuo mama shou de, ta baba hui ma ta.
 little brother obediently do mother say DE his father will scold him
 ‘I don’t know what little brother did but unless he did indifferently what
 his mother told him to do, his father will scold him.’

In (100'a), the ignorance proposition taken under the scope of "unless" is ruled out.

3.3.5 The Ignorance Implication

A Chinese bare conditional can be used to signal ignorance when the context supplies an epistemic modal base. The ignorance reading is not presupposed. In (101), speaker B's utterance is compatible with a situation where the speaker does in fact know which person will be eating first:

(101) A: Ni zhi bu zhidao dengyixia shei xian chi?
you know not know in a minute who first eat
'Do you know who can eat first in a minute?'

B: Shei laile, shei/ta jiu xian chi. Jiu shi Dawei!
who come-completive who/he then first eat namely be David
'Whoever came first can eat first. Namely, David!'

Likewise in the example below, the bare conditional in speaker B's utterance is compatible with a context where the speaker does in fact know what it was that her *didi* 'younger brother' did:

(102) A: Natian didi zuo-le shenme?
that day little brother do-Perf what
'What did little brother do that day?'

B: Mama shou-le shenme, ta jiu (shi) zuo-le shenme,
mother say-Perf what he then be do-Perf what
ta bangmang dasao fangzi.
he help clean house
'He did whatever mother said, he helped (her) clean the house.'

When the speaker's epistemic state is the question under discussion, the bare conditional alone in speaker B's utterance in (102) has an ignorance reading. It implies that the speaker does not know, or is uncertain as to what her *didi* 'younger brother' did. Again, the ignorance reading is only implicated.

3.4 On the Indifference Implication in Chinese Bare Conditionals: A Comparison with English *Whatever*

In this section, I capture the agent's/speaker's indifference reading of Chinese Bare Conditionals with von Fintel's semantics of *whatever*. The counterfactual modal base in von Fintel's analysis implies causality and is best suited for bare conditionals. A bare conditional differs from *whatever* in that the former necessarily implies causality while the latter does not. Two clauses must be temporally ordered in bare conditionals but not in *-ever* sentences. The first *wh*-clause in a bare conditional is left adjoined to the second clause, while an *-ever* clause occurs in an argument position. These facts contribute to the problem with translations between the two constructions.

3.4.1 A Counterfactual Modal Base for Bare Conditionals

In von Fintel's analysis, the indifference reading of *whatever* involves a counterfactual modal base. When the modal base F is counterfactual, *whatever* presupposes that a minimal change in the identity of the FR referent would not make a difference to the truth of the sentence. Consider again his semantics for *whatever*:

(83) *whatever* (w) (F) (P) (Q):

presupposes: $\forall w' \in \min_w [F \cap (\lambda w'. \text{ix. } P(w')(x) \neq \text{ix. } P(w)(x))]$:

$Q(w') (\text{ix. } P(w')(x)) = Q(w) (\text{ix. } P(w)(x))$

asserts: $Q(w) (\text{ix. } P(w)(x))$

In von Fintel's analysis, the “indifference” uses of *whatever* mainly concern an agent's indifferent attitude and convey a kind of indifference on the part of an agent (signaling that he or she does not care). When we apply the semantics of (83) to (103a), we get the presupposition of indifference saying that Zack voted for the person on top of the ballot irrespective of who the person was as shown in (103b):

(103) a. Zack simply voted for whoever was at the top of the ballot.

b. *Presupposition*:

In all worlds w' minimally different from the actual world w in which someone different is at the top of the ballot, Zack votes for that person iff in w Zack votes for the person at the top of the ballot in w .

The quantification is over counterfactual alternatives which differ from the actual world in who is at the top of the ballot. The *whatever*-FRs say that in worlds that differ in the identity of the FR-referent, the truth of the sentence is still the same. The presence of a counterfactual modal base implies that there is an essential connection between someone's being at the top of the ballot and his voting for that person. Zack's indifferent attitude is easily inferred when we begin to wonder why the counterfactual entailment is

as it is, i.e., *if a different person had been at the top of the ballot, Zack would have voted for that person.*

Counterfactual thinking is closely linked to causal beliefs. Typically, when we engage in counterfactual thinking, we imagine alternatives to the real world. We engage in the thinking process, wondering that had *A* never happened, *B* would not have occurred. *A* causes *B* is commonly taken to mean that “if *A* had not occurred, *B* would not have occurred” (cf. Lewis 1973b).⁵⁰ Counterfactual thinking can produce a heightening of affect brought about by realizing that an outcome was not inevitable because it easily could have been undone.⁵¹ Counterfactual thinking can amplify feelings of regret, distress, shame and guilt, as well as satisfaction and happiness. By telling ourselves that *if Obama had reacted sooner to the oil-spill, the gulf would not have been so badly polluted*, we ascribe causal status to our president for the environmental disaster. Von Fintel’s analysis aims to capture the indifference reading of *whatever* with reference to an agent’s/speaker’s indifferent attitude. The agent’s/speaker’s indifference reading of *whatever* can be easily inferred in the presence of a counterfactual modal base when we look for an agent that is responsible for creating a causal link between the FR-clause and the matrix clause.⁵² We will discuss shortly in Section 3.4.2, however, that the indifference uses of *whatever* can also convey a sense of “indifference” without referencing an agent’s/a speaker’s attitude and without construing a causal link between the FR-clause and the matrix clause.

⁵⁰ I thank David Beaver for the discussion on the causal link (p.c.) and take sole responsibility for any wrong assumption.

⁵¹ See Kahneman and Miller (1986) via Spellman and Mandel (1999).

⁵² Tredinnick (2005) also makes the observation that the agent’s indifference reading of *whatever* can be easily inferred when we look for an agent that is responsible for creating a causal link between the FR-clause and the matrix clause.

Still, a counterfactual modal base in von Stechow's analysis that predicts a causal link between the FR-clause and the matrix clause is exactly what we need for the interpretation of bare conditionals. As just discussed in Section 3.3.3, a causal interpretation is necessarily present in a bare conditional. When an agent is present, the agent's indifference reading is hard to negate. The counterfactual entailment in the example in (97B) (repeated here in (104a)) is (104b):

(104) a. Ni zhu shenme, wo (jiu) chi shenme.

you cook what I then eat what

'I will eat whatever you cook.'

b. *Counterfactual Entailment:*

If you cooked a different thing, I would eat that thing.

c. #Ni zhu shenme, wo chi shenme. Wo jintian xiang chi xiongzhang.

you cook what I eat what I today want eat bear paws

'?I will eat whatever you cook. Today I want to eat bear paws.'

This indifference reading in the case of (104a) has an agent, an attitude holder as part of the interpretation and the agent's attitude is held responsible for making this counterfactual entailment valid. At the same time, the causal link between the conjuncts forces us to think of something that is responsible for the causal link to hold, i.e., the link between the addressee's cooking something and the speaker's eating that thing. From that we infer that the speaker does not care. This is why the bare conditional in (104a) cannot be followed by a speaker's wanting a certain dish as shown in (104c). We can

capture the indifference reading of bare conditionals with von Fintel's semantics for *whatever* providing it with a counterfactual modal base:

$$(105) \text{ bare conditional } (w) (F_{\text{counterfactual}}) (P) (Q)$$

Presupposes and entails:

$$\forall w' \in \min_w [F \cap (\lambda w'. \iota x. P(w')(x) \neq \iota x. P(w)(x))]:$$

$$Q(w') (\iota x. P(w')(x)) = Q(w) (\iota x. P(w)(x))$$

The causal link between the two clauses implied by the counterfactual modal base in (105) is signaled by the default connective *jiu* 'then' in a bare conditional. In Chinese two clauses that are linked by the morpheme *jiu* 'then' are presented as causally dependent or sequentially ordered. A bare conditional contains an optional *jiu* 'then' by default and always implies that there is an essential connection, a causal link between the two clauses. As mentioned in Chapter 1, a bare conditional can receive a conditional interpretation or it can be used to describe a fact (Section 1.1). When describing a future event and $\iota x.P(w)(x)$ is not yet defined, a bare conditional appears like a conditional statement saying that if there is a thing such that it satisfies P , then it will have the property of Q as shown in (105'):

$$(105') \text{ Bare conditional describing future events } (w)(P)(Q)$$

$$\text{Asserts: } \exists !x.P(w)(x) \rightarrow Q(w) (\iota x.P(w)(x))$$

Regardless of whether $\iota x.P(w)(x)$ is defined in the actual world, a bare conditional has the modal implication in (105). For instance, the modal implication in (104a) says that in all of the minimally different counterfactual worlds in which the addressee cooks something

different, the speaker will eat that thing in the actual world (by (105)). In other words, if the addressee had cooked something different, then the speaker would have eaten that thing. From that we infer that an agent (if present) has an indifferent attitude. If no agent is present, then we infer that some other force is making the causal link hold. This explains why the example in (98') forces us to imagine that some supernatural power is responsible for the counterfactual entailment and for the existence of a causal link between someone's standing there and her being tall.

The link between counterfactual reasoning and causal beliefs is still a hotly debated topic. It suffices to say that the agent's/speaker's indifference implication in a bare conditional can be adequately captured with von Steinhilber's analysis that employs a counterfactual modal base. Though not stated in (105), let us simply note that if the context supplies an epistemic modal base (when **F** is epistemic), then bare conditionals implicate ignorance just like *whatever*.

3.4.2 Chinese Bare Conditionals are not just *Whatever*: Temporal Order, Causal Link, and the Problem of Translation

As mentioned in Chapter 1 (Section 1.3), a *whatever*-sentence cannot always be translated using a bare conditional. Consider the example in (14) repeated here in (106):

(106) a. David will say whatever you say.

b. ≠ Dawei shuo shenme, ni jiu shou shenme.

David say what you then say what

'You will say whatever David says.'

c. = Ni shou shenme, Dawei jiu shuo shenme.
 you say what David then say what
 ‘David will say whatever you say.’

To properly translate (106a), we must place the clause expressing “you tell David something” before the clause that expresses “David will say the thing” as shown in (106c). Similarly (107a) cannot be translated into (107b) for the same reason.

(107) a. David danced with whoever asked him to dance.

≠ b. Dawei gen shei tiaowu, shei jiu qing-le Dawei tiaowu.
 David with who dance who then ask-PRF David dance
 ‘Whoever asked David to dance, (again) danced with David.’

= c. Shei qing-le Dawei tiaowu, Dawei (jiu) gen shei/ta tiaowu.
 who ask-PRF David dance David then with who/she dance
 ‘David danced with whoever asked him to dance.’

In (107b), it is pragmatically unsound to perceive the event of someone’s asking David to dance as occurring after David’s dancing with her. The examples in (106) and (107) suggest that two clauses that form a bare conditional are required to stand in a temporal order. The event described by the first clause must precede the event described by the second clause on a temporal scale.

That two clauses that form a bare conditional must be temporally ordered also follows from the fact that bare conditionals may contain the morpheme *jiu* ‘then’.⁵³ In

⁵³ There is another morpheme in Mandarin that is often translated as *then* in English. Chu (1998) suggests that *jiu* ‘then’ and *cai* ‘then’ (termed “modality adverbs”) display different discourse functions in Mandarin

Chinese, when the morpheme *jiu* ‘then’ connects two clauses, the clause precedes *jiu* ‘then’ must be interpreted as preceding the clause that follows *jiu* ‘then’. The fact that bare conditionals may contain an optional *jiu* ‘then’ indicates that the two clauses that form the construction are temporally ordered and that the first clause occurs prior to the second. This explains why (106c) and (107c) are well-formed bare conditionals while (106b) and (107b) are not. When an event precedes another event, we naturally take the first event as one of the causes of the second event (again, see Lewis 2000). The causal interpretation necessarily forced by bare conditionals correlates closely with the temporal order of the conjuncts, the nature of the morpheme *jiu* ‘then’, and the nature of common reasoning that we typically think of causation. Again, the causal interpretation between the two clauses is necessarily present in a bare conditional. Bare conditionals entail indifference and the agent’s indifference reading is hard to cancel (see for instance, the examples in (96’) and (97)). Although the indifference uses of *whatever* can also convey “indifference” without reference to an agent’s/a speaker’s attitude and without construing a causal link between the FR-clause and the matrix clause, a causal link and a counterfactual modal base are needed for the interpretation of bare conditionals.

Chinese (p.101). While *jiu* ‘then’ indicates a sufficient condition, *cai* ‘then’ is used to show a necessary condition:

- (i) Chabuduo chile ershi nian de ku, cai ba tamen daidao zheme da.
almost eat-LE 20 year DE suffering, CAI BA they Bring-to this big
‘Only through nearly 20 years’ suffering, did (I) bring them (i.e. the children) up.’
- (ii) Ta biyele, jiu dao biede difang qu gongzuo.
he/she graduate-LE JIU to other place go work
‘He/she will leave for work after graduation.’

The *cai* in (i) indicates that only after nearly 20 years of suffering did the speaker of (i) bring them up--a necessary condition, while the *jiu* in (ii) indicates that upon graduation he/she will leave for work--a sufficient condition (p. 99). Our discussion focuses on *jiu* ‘then’ and its sequential usage.

The requirement of a causal interpretation between the two conjuncts that form a bare conditional poses a strong restriction on the translation between a bare conditional and a *whatever*-sentence. Specifically, a sentence containing an FRs-*ever* cannot always be translated into a bare conditional. Translating an FR-*ever* sentence that apparently lacks a causal interpretation into a bare conditional is barred. The meaning of the FR-*ever* sentence in (108) cannot be preserved when the sentence is translated into the bare conditional in (109). For the person's drinking with Nick does not need to be a cause of her becoming a good looking girl in (108):

(108) Whoever drank with Nick that night was pretty.

(109) Nawan shei gen Nick hejiu, shei (jiu) piaoliang.

that night who with Nick drink who then pretty

‘Whoever drank with Nick that night became/will become pretty.’

Lin claims that “a bare conditional is ill-formed, if its left and right clauses do not involve a causal dependence” and argues that the example in (98’), repeated in (110), is ill-formed “because the property of being tall is only an accidental property for the person who is standing there” (p. 274):

(110) Shei zhan zai nali, shei (jiu) hen gao.

who stand in there who then very tall

‘Whoever stands there, (then) will become/became tall.’

Once again, I emphasize that the bare conditional in (110) is grammatical on the reading that someone's standing there described by the first clause will cause that person's being tall described by the second clause. Even though such casual link may be strange, it is necessary for the interpretation of the bare conditional. The ignorance reading is available in (110) but crucially the bare conditional asserts indifference. The problem of translation is due to the fact that the temporal order of the clauses is required in a bare conditional but not in *whatever*-sentences. The strict temporal order of the conjuncts that form a bare conditional produces a causal link necessarily present in the construction.

While two clauses that form a bare conditional are required to stand in a temporal order, English *whatever*-sentences do not have this requirement. English *whatever*-sentences do not require the FR-clause and the matrix clause to be temporally ordered:⁵⁴

(111) Whatever John ate that's what his mother cooked. If John had been eating something else, that is because his mother would have prepared that other thing.

In Chinese, it would be impossible to express (111) using a bare conditional because two clauses that form a bare conditional are required to stand in a temporal order such that the first precedes the second. As noted by David Lewis (2000), almost everything that precedes an event will be counted as among its causes (P. 187). This structural requirement contributes to the presence of the causal interpretation of the conjuncts that is responsible for the agent's indifference entailment in a bare conditional (Section 3.4.1).

⁵⁴ The example here is due to David Beaver (p.c.). He points out that there is a difference between conditionals and FR-*ever*. It is odd to say: *If John hadn't had his umbrella with him, then it wouldn't have been raining*. However, it is fine to say: *Whatever John ate that's what Mary cooked*.

Whenever an agent is present in a bare conditional, her indifferent attitude is hard to negate:

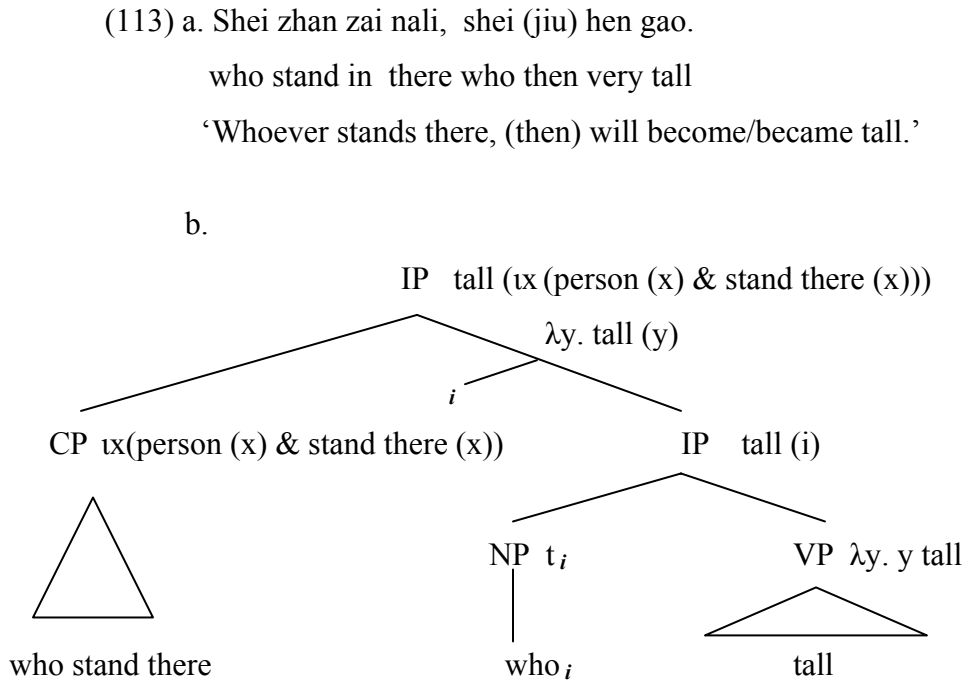
- (112) Mali jian shei, (jiu) ai shei. #Ta hen tiaoti.
Mary see who then love who she very picky
'Mary falls/fell in love with whoever she saw. She is very picky.'

In (112), it is hard for the bare conditional to be followed by a proposition saying that Mary is a picky person. Mary's indifferent attitude is responsible for the causal connection between her seeing someone and her falling in love with them. Unlike bare conditionals, the agent's indifference reading is not necessarily needed for the interpretation of *whatever*. In *Mary fell in love with whoever she saw*, Mary's decision to fall in love with the people she sees can be anything but indifferent.

The indifference reading in von Fintel's analysis is interpreted against a counterfactual modal base which implies temporality. The counterfactual modal base also predicts causal link. While adopting his semantics for bare conditionals seems plausible, applying a counterfactual semantics directly to English *-ever* may not be entirely correct. The problem of translation is due to the fact that the temporal order of the clauses is required in a bare conditional but not in *whatever*-sentences. The consequence of the strict temporal order of the conjuncts that form a bare conditional is the causal link necessarily present in the construction. English *whatever*-sentences do not have this requirement and there does not need to be a causal connection. It turns out that von Fintel's analysis can adequately capture the indifference reading of bare conditionals but it may not be entirely correct for *whatever*.

3.4.3 A Diagram for the Form and Interpretation of Bare conditionals in Comparison with *Whatever*

Let us illustrate the structural requirement that gives rise to the causal interpretation between the two clauses with the tree diagram in (113b) for the example in (110) shown again in (113a):



Based on what we have argued in Chapter 2, the first *wh*-clause is an iota expression and the pro-form (*wh*-word/pronoun) in the main clause has the interpretation of a bound variable with the adjoined index being the binder. The iota can pick up either a unique singular (a singular definite reading) or a unique plural individual (a universal reading). If only one person stands there then the CP has a singular definite reading; if multiple people stand there, then the CP has a universal reading.

In Chinese, using relative clauses with a relativizer is not the most productive strategy for modifying nouns. Specifically, what is the background of the first event may

not be the content of a relative clause to modify the head noun. Consider the following example (cf. Chu 1998):

- (114) a. I checked out a book from the library which turned out to be boring.
b. *Wo cong tushuguan jie-le yiben jieguo buhaokan de shu.
I from library borrow-LE a-CL turn out not interesting REL book.

A direct translation in Chinese of (114a) is not available because the first event is not *jieguo buhaokan* ‘turn out not interesting’. In other words, the content of the relativized clause in (114b) *jieguo buhaokan* ‘turn out not interesting’ is not the background information, hence the unacceptability. The appropriate rendering of (114a) in Chinese must not contain a relative clause but should be expressed with two independent clauses instead:

- (115) wo cong tushuguan jie-le yiben shu. (e) jieguo buhaokan.
I from library borrow-LE a-CL book e turn out not interesting
‘I checked out a book from the library (and it) turned out to be boring.’

Chinese relative clauses have a background function that “reduces weight to a piece of information to make it serve as the background” (Chu 1998). The restriction on the formation of relative clauses in Chinese makes the utilization of independent clauses a more common strategy for noun modification. Though the first clause of a bare conditional appears to have a structure of a normal sentence without relativization, it can have the meaning of a relativized NP by virtue of being picked up by the pro-form in the main clause. This is like the empty pronoun in the second clause of the example in (115). It picks up the book checked out from the library.

While the first *wh*-clause in a bare conditional is adjoined to the left of the main clause, a *whatever*-clause is generated in an argument position. Given that a free relative has quantificational force (a definite), following Srivastav (1991) we can assume that it is subject to Quantifier Raising and the *–ever* sentence in (116a) will have the LF in (116b):

- (116) a. SS: I will do whatever she tells me.
 b. LF: [_{IP} [_{CP} whatever she tells me]] [_{IP} I will do t_i]

As Srivastav (1991) suggests, English free relatives are dominated by NPs and can occur in case and theta marked positions. If they are NPs, they will be predicted to freely occur in either subject or an object position. The first clause in Chinese bare conditionals, although it has the meaning of a relative clause, is nevertheless a CP, and must always be adjoined to IP and barred from argument positions. To express the English *–ever* sentence in (116a), the first clause of the bare conditional in (116'a) must be left adjoined to IP and cannot occur inside the argument position of the VP (116'b):

- (116') a. [_{IP} [_{CP} Ta gen wo shuo shenme], [_{IP} wo jiu zuo shenme]].
 she with me say what I then do what
 'I will do whatever she tells me.'
- b. * [_{IP} Wo [_{VP} zuo [ta gen wo shuo shenme].
 I do she with me say what
- c. * [_{IP} Wo jiu zuo shenme], [_{CP} ta gen wo shuo shenme].
 I then do what she with me say what
 'I will do whatever she tells me.'

A bare conditional requires the main clause to occur after the subordinate clause. When we try to switch the order between the first clause and the main clause, we get an ill-formed sentence (116'c). Such a requirement in turn forces a temporal order and produces a causal link between the two clauses. In contrast, English *whatever*-sentences do not have these requirements and a causal link is not necessary for the interpretation of *whatever*.

Note that in this dissertation, I separate quantification from modal implications to discuss the meaning of bare conditionals. Quantification in bare conditionals is presented using the trees in (113b) and in (58) (Chapter 2), while modal implications are summed up using the formula in (105). Here we assume a constructional account rather than a lexical rule approach. If we take the traditional lexical rule approach, then the meaning of a bare conditional would be analyzed as part of the meaning of the verb or *wh*-word. However, the meaning of the first clause does not mean the same thing as the first clause standing alone—the first clause is not interpreted as a question sentence. So there must be a rule deriving the NP meaning of the first clause in the construction of bare conditionals. However, no relativizer is present in bare conditionals. The first clause is interpreted as if relativized as soon as the second clause appears. The meaning of the first clause is particular to the bare conditional construction. Moreover, a *wh*-word in the second clause of bare conditionals is analyzed not as a question word, nor as a *wh*-indefinite meaning ‘something/someone’ (commonly assumed in the literature of Chinese linguistics), but as an anaphoric definite. The causal relation between the two conjuncts is conveyed by the default linking element, i.e. the morpheme *jiu* ‘then’ whose function is discussed in the previous section (Section 3.4.2). For these reasons, we take Chinese bare

conditionals as a construction and as an independently represented syntactic unit in their own right, and possess their own semantics as well as syntax.

3.5 Conclusion

In this chapter, I examined modal implications associated with Chinese bare conditionals drawing comparison with English FRs-*ever*. I adopted von Fintel's semantics for *whatever* to capture the modal flavor of Chinese bare conditionals with some modifications. I emphasized that modal implication of ignorance associated with *whatever* is not a classic case of presupposition, but an implicature that is accommodated when certain conditions for the use of *whatever* are met in the common ground. I showed that Chinese bare conditionals have characteristics that are not found with English FRs-*ever* and explained why sometimes they cannot be translated from one into the other. Two conjuncts that form a bare conditional are temporally ordered and must occur in a temporal order so that the antecedent clause describes an event that occurs prior to the event expressed by the consequent clause. Chinese bare conditionals necessarily force a causal interpretation to exist between two conjuncts. Given that causation is commonly associated with counterfactual reasoning (Lewis 2000), Chinese bare conditionals have a default counterfactual modal base. FRs-*ever* sentences, on the other hand, do not have a default modal base. At the level of assertion, the indifference reading is always part of the truth conditional content of a bare conditional, while this reading may be absent with *whatever*. Indifference reading in von Fintel's analysis is interpreted against a counterfactual modal base which implies temporality and predicts causal link. While we have evidence from bare conditionals that a counterfactual semantics is adequate in

capturing the agent's indifference reading, it may not be applied directly to *whatever*. For a bare conditional requires two clauses to be temporally ordered and the causal link necessarily present in the construction. English *whatever*-sentences do not have this requirement and there need not be a causal connection. While the first *wh*-clause in a bare conditional is adjoined to the left of the main clause, a *whatever*-clause is generated in an argument position. These differences between bare conditionals and *whatever*-sentences contribute to the problem of translation between these two constructions.

Chapter 4

Pronoun Occurrence in Chinese Bare Conditionals

Pronoun occurrence has been a central issue in the debate over the syntax and semantics of Chinese Bare Conditionals. Cheng and Huang (1996) argue that a pronoun cannot be directly bound by an operator in an \bar{A} -position and cannot occur in a bare conditional whose interpretation involves unselective binding over variables introduced by *wh*-words. Lin (1996) claims that a pronoun can occur in a bare conditional if it can pick up a unique individual in the actual world. He posits different logical forms to separate bare conditionals with a pronoun from those with two identical *wh*-words. Neither is correct.

This chapter provides the theoretical background for donkey sentences by introducing E-type pronouns and donkey sentences in relation to conditional donkey sentences in Chinese (Section 4.1). It reviews and summarizes two important analyses from Cheng and Huang (1996) and Lin (1996) (Section 4.2). We will see that a pronoun in a bare conditional does not display characteristics of E-type pronouns and that Lin's constraint on the use of pronoun does not hold within or outside bare conditionals. Under our account, the antecedent *wh*-phrase in a bare conditional is a definite description and its anaphoric element in the second clause (which may be a pronoun or a second *wh*-word) has the interpretation of a bound variable. Our analysis is able to cover quantification in all cases of bare conditionals (Section 4.3). Possible explanations for pronoun occurrence in bare conditionals will be suggested as well (Section 4.4).

4.1 Background: Characteristics of E-type Pronouns

There are different types of personal pronouns. Referential pronouns inherit their referents from other referring expressions. Pronouns that function as bound variables do not refer to a particular individual. Consider the pronouns in the following examples:

- (117) a. David left the meeting. He was mad.
b. Every student loves his professor.

The pronoun “he” in (117a) is a referential pronoun. It refers to the individual “David” or to some other contextually understood individual (e.g., by pointing to Nick when uttering “he”). On one reading of the sentence in (117b), the pronoun is a variable and has a quantifier as its antecedent. E-type pronouns are neither referential picking up a reference from a referring expression, nor variables bound by a quantified antecedent. Consider the pronoun in the following example:

- (118) Few congressmen admire Kennedy and they are very junior.

The pronoun in the second clause cannot be bound by *few congressmen*. As discussed in Evans (1977), we may not treat the pronoun in (118) as a bound variable because *few congressmen* and *they* are in separate sentences and no possible landing site is high enough for *few congressmen* to c-command *they*. Moreover, even if this c-command relation can be established, the pronoun *they* interpreted as a bound pronoun will provide a reading that is obviously not available to this sentence: *Few congressmen are such that they both admire Kennedy and are very junior*. This is equivalent to (118’):

(118') Few congressmen: x (x admire Kennedy, and x are very junior)

The sentence in (118) entails that few congressmen admire Kennedy, whereas (118') would be true if many congressmen admire Kennedy. Clearly, (118') may be used to imply that there are many congressmen who admire Kennedy, even though only a few of them are junior. This is a reading that is unavailable for (118). The available reading for (118) is one that requires the pronoun *they* be treated as an E-type pronoun as the sentence entails first that few congressmen admire Kennedy period, and second that *all* the congressmen who admire Kennedy are very junior.

E-type pronouns can also be found in conditional sentences. Conditional sentences with E-type pronouns or donkey anaphora are commonly referred to as conditional donkey sentences. Below is a classic example of such sentences:

(119) If a man owns a donkey, he beats it.

According to Evans, the pronouns *he* and *it* have status which is more on a par with definite descriptions than true variables. Under such an analysis, the donkey sentence in (119) is interpreted as *if a man owns a donkey, the man who owns the donkey will beat the donkey he owns* (see also Cooper 1979). Another characteristic of an E-type pronoun is that it must take the plural form if its antecedent is a universal quantifier or plural:

(120) a. If a farmer owns every donkey, he will beat them/*it.

b. Few congressmen admire Kennedy and they are/*he (*she) is very junior.

In sum, a donkey pronoun is neither referential picking up a reference from a referring expression, nor a bound variable. It must be plural in form when its antecedent is plural.

4.2 Previous Analyses of Bare Conditionals: Their Views on Pronoun Occurrence

4.2.1 Cheng and Huang (1996)

In Mandarin Chinese, donkey sentences typically take the form of conditional sentences which may involve a *wh*-word in the antecedent clause and an element anaphoric to it in the consequent clause. Cheng and Huang (1996) declare the existence of two paradigms of conditionals. They term one type “Bare Conditionals” and the other type “*Ruguo* ‘if’-conditionals” as shown in (121) and (122) below respectively:⁵⁵

- (121) a. Shei xian lai, shei/*ta (jiu) xian chi.
who first come, who/(s)he then first eat
‘If x comes first, x eats first.’

- b. Ni xihuan shei, shei/*ta jiu daomei.
you like who who/(s)he then unlucky
‘If you like x, x is unlucky.’

⁵⁵ Cheng and Huang also include *dou* ‘all’-conditionals in their study. The authors group *dou* ‘all’-conditionals and *ruguo* ‘if’-conditionals together to contrast with bare conditionals with respect to their syntactic distributions. They claim that in *dou*-conditionals as in *ruguo* ‘if’-conditionals, there is no *ruguo* ‘if’, but an overt quantifier-like element *dou* ‘all’ is found in the main clause instead. They also believe that in *dou*-conditionals as in *ruguo* ‘if’-conditionals, a second *wh*-word is not allowed in the consequent clause. They provide the following example to illustrate these properties of *dou*-conditionals:

- (i) Ni jiao shei jin-lai, wo dou jian ta/*shei.
you ask who enter I all see him(her)/who
‘Whoever you ask to come in, I’ll see him/her.’

To simplify the matter, we will not discuss *dou* ‘all’-conditionals here but focus on bare conditionals and *ruguo* ‘if’-conditionals instead.

- (122) a. Ruguo you shei qiaomen, ni jiu jiao ta/*shei jin-lai.
 if have who knock door you then ask him(her)/who come in.
 ‘If someone knocks on the door, you’ll ask him/her to come in.’
- b. Ruguo ni kandao shei, qing jiao ta/*shei lai jian wo.
 if you see who please tell him(her)/who come see me
 ‘If you see someone, please ask him/her to come see me.’

Cheng and Huang define these two types of conditionals based on the following structural properties: *ruguo* ‘if’-conditionals contain an overt leading element *ruguo* ‘if’, while bare conditionals cannot be lead by it; *ruguo* ‘if’-conditionals allow the presence of a consequent pronoun whereas bare conditionals prohibit it.

Following standard DRT (Discourse Representation Theory), Cheng and Huang provide the unselective binding treatment in (121) for the bare conditionals in (123a):

- (123) a. $NEC_x [x \text{ come first}] [x \text{ eat first}]$ ⁵⁶
 Q_x restriction nuclear scope
- b. $\forall x (x \text{ come first} \rightarrow x \text{ eat first})$

The universal force of *wh*-words in bare conditionals comes from the covert necessity operator. A quantificational element is assumed to create a tripartite structure: $Q [A] [B]$, where A is the restriction of Q and B is the nuclear scope of Q (cf. Heim 1982). Assuming that quantifier Q must bind an occurrence of x in its restrictive clause and its nuclear scope (Kratzer 1989), the necessity operator must bind two occurrences of the

⁵⁶ The covert necessity operator is abbreviated as “NEC” here.

same *wh*-word. Otherwise, the constraint against vacuous quantification will be violated. Cheng and Huang argue that a pronoun cannot occur in the consequent clause of a bare conditional. For the Chinese pronoun *ta* ‘he/she’ cannot be directly bound by an operator in an \bar{A} -position. If it appears in the consequent clause of a bare conditional, it would have to be bound by such an operator (the necessity operator). That *ta* ‘he/she’ cannot pick up its reference from an operator in an \bar{A} -position is evident from the following data (cf. Aoun and Li 1989, 1990):⁵⁷

- (124) a. Meigeren_i dou shuo ta_{*i/j} bu xihuan pijiu.
 everyone all say he not like beer
 ‘Everyone said that he does not like beer.’
- b. Meigeren_i dou xihuan ta_{*i/j} de baba.
 everyone all like he DE father
 ‘Everyone likes his father.’

Chinese *ta* ‘he/she’ differs from its English counterpart in that the former cannot be bound by *meige ren* ‘everyone’ while the latter can be treated as a bound variable. While the Chinese sentence in (124b) cannot have a bound reading that says everyone likes his own father, its English counterpart can. Cheng and Huang’s analysis has the assumption that a Chinese pronoun is referential in nature as its basis.

⁵⁷ Note that many informants disagree on this point (see example (129) and footnote 64 of this chapter).

While Cheng and Huang interpret bare conditionals as involving universal quantification over variables introduced by *wh*-words, they treat *ruguo* ‘if’-conditionals with an E-type pronoun strategy.⁵⁸

- (125) a. If someone knocks, then tell the person who knocks to come in.
b. If you see someone, please ask the one you see to come see me.

Assuming that Chinese *wh*-words are polarity items and need a licenser, if a *wh*-word occurs in the consequent clause of a *ruguo* ‘if’-conditional, it will also need a licenser.⁵⁹ The first *wh*-word in the antecedent clause of a *ruguo* ‘if’-conditional does not have a licensing problem because it can be licensed by the leading element *ruguo* ‘if’. Once licensed, the *wh*-word is an existential quantifier subject to Quantifier Raising. It is then adjoined to the antecedent clause IP with its determiner mapped onto an operator position and its N’ mapped onto a restrictive clause. The raised *wh*-word leaves a trace in the nuclear scope. Thus, within the antecedent clause, the relevant tripartite structure is already “complete.” If a *wh*-word occurs in the consequent clause, it will not be licensed.

⁵⁸ Note that Cheng and Huang provide a total of three representations for (8b) repeated here:

- (i) If (for some *x*, (*x* a person) (*x* knocks)), then tell him/her to come see me.
(ii) For every situation (*s*), if you see someone in (*s*), please ask him/her to come see me in (*s*).
(iii) If you see someone, please ask the one you see to come see me.

The first two representations do not provide representations for the E-type pronoun. Here we adopt only the third representation since the E-type pronoun is properly paraphrased.

⁵⁹ This follows Cheng (1991, 1995) and Li (1992).

Below is the representation of the *ruguo* ‘if’-conditional in (122b) under Cheng and Huang’s account (their (40b)).⁶⁰

- (126) *Ruguo* [**shei_i** [ni kan-jian **t_i**], [qing jiao ta/*shei lai jian wo].
 if who you see please tell her/who come see me
 ‘If you see someone, please ask him/her to come see me.’

4.2.2 Lin (1996)

Contrary to Cheng and Huang’s claim, Lin (1996) presents the examples in (19), repeated here in (127) to show that bare conditionals can occur with a consequent pronoun (p. 248-249):

- (127) a. *Shang ci shei mei jiang-wan, jintian jiu you shei/ta xian kaishi.*
 last time who not talk-finish today then with who/him first begin
 ‘Today let’s begin with whoever did not finish his talk last time.’
- b. *Shei shang xueqi na di-yi-ming,*
 who last semester get top-one
shei/ta zhe xueqi jiu keyi dan banzhang.
 who/he this semester then may serve leader
 ‘Whoever’s performance was the best last semester may/must serve as the class leader this semester.’

⁶⁰ Note that the authors do not provide a detailed LF-representation to show how exactly the *wh*-word in the antecedent clause of a *ruguo* ‘if’-conditional is “mapped on to an operator position and its N’ mapped onto a restrictive clause.” I take it that they mean the following:

- (i) [_{IP} *Ruguo* [_{DP} *shei_i*] [ni kan-jian **t_i**], [_{IP} qing jiao ta/*shei lai jian wo]
 if who you see please tell her/who come see me
 RESTRICTION SCOPE
 ‘If you see someone, please ask him/her to come see me.’

Lin terms Cheng and Huang's bare conditionals in (121) that disallow the presence of a consequent pronoun "multi-case" bare conditionals and his examples in (127) that permit the alternation between a pronoun and a *wh*-word in the consequent clause "one-case" bare conditionals.

According to Lin, multi-case bare conditionals allow multiple possible individuals to satisfy the antecedent clause while one-case bare conditionals can only have a reading involving one individual whenever *ta* 'he/she' appears in the consequent clause. The terms "multi-case" and "one-case" come from Kadmon (1987) who distinguishes between "one-case" and "multi-case" *if*-conditionals. In one-case *if*-conditionals such as *If there is a doctor in London, he is Welsh*, the donkey pronoun is absolutely unique which gives rise to a one-case reading. However, in a multi-case *if*-conditional as in *If a man is in Athens, he is not in Rhodes*, the conditional has a multi-case reading. In a similar fashion, Lin claims that multi-case bare conditionals such as (121a) is about possible instances of a man coming first and states a universal generalization about such instances, whereas his one-case bare conditional in (127a), for instance, is about a particular instance of a man not having finished his talk last time. Under Lin's account, the truth conditions for bare conditionals with two *wh*-words involve unselective binding, regardless of whether they belong to multi-case or one-case. For one-case bare conditionals that contain a consequent pronoun, Lin suggests several solutions to account for the uniqueness implication associated with the pronoun including the E-type approach and the type-shifting approach. All are based on the assumption that a consequent pronoun in a bare conditional can only refer to a unique (singular) individual. In the end, he does not rest on a particular approach and leaves the status of the anaphoric pronoun in

bare conditionals for further research. I will not review those approaches in detail in this section because as we will soon see that his typology for bare conditionals based on pronoun occurrence is not adequate. Nevertheless, it is important to point out that we have employed a variant of his type-shifting approach based on Jacobson (1995) to account for all cases of bare conditionals (Chapter 2).

Lin attempts to show us that one-case bare conditionals are compatible with the presence of a consequent pronoun and when the anaphoric *wh*-phrase is replaced by a pronoun, the antecedent *wh*-phrase must refer to a unique referent and the “more than one person” reading disappears (1996, p. 250). He then proposes a “Condition on Donkey Pronouns in Bare Conditionals” (p.251).⁶¹

- (20) A donkey pronoun in a bare conditional is felicitous only if it picks out a unique referent.

Lin’s approach to donkey pronouns in bare conditionals follows from Bertrand Russell’s classic analysis of definite descriptions which commits to both existence and uniqueness.⁶² Multi-case bare conditionals in (121) disallow a consequent pronoun because the first *wh*-clause allows multiple possible individuals to satisfy its description and the quantificational force is “similar to that of *any*”. On the contrary, one-case bare conditionals in (127) are compatible with a consequent pronoun because the context supplies a unique referent that has the relevant property in the actual world.

⁶¹ We have mentioned this in Chapter 1.

⁶² Note that Lin’s discussion does not include definites outscored by other quantificational or modal operators. Such definites do not commit to either uniqueness or existence under Russell’s theory. I thank David Beaver for reminding me of this point (p.c.).

4.2.3 Summary of Previous Accounts

The tables below summarize the central points of previous accounts:⁶³

Table1. Cheng and Huang (1996): Two types of Conditional Sentences:

	Bare conditionals	<i>Ruguo</i> ‘if’-conditionals
Example	(121a) Shei xian lai, shei /*ta (jiu) xian chi. who first come, who/he then first eat ‘If x comes first, x eats first.’	(122a) Ruguo you shei qiaomen, if have who knock door ni jiu jiao ta jin-lai. you then ask him/her come in ‘If someone knocks on the door, you’ll ask him/her to come in.’
Meaning	(121a) $\forall x (x \text{ come first} \rightarrow x \text{ eat first})$	(122a) If (for some x, (x a person) (you see x)), then tell him/her to come in.
Form	presence of pronouns <i>no</i> presence of <i>ruguo</i> ‘if’ <i>no</i> presence of <i>you</i> ‘exist’ <i>no</i>	presence of pronouns <i>yes</i> presence of <i>ruguo</i> ‘if’ <i>yes</i> presence of <i>you</i> ‘exist’ <i>yes</i>

Table2. Lin (1996): Two types of Bare Conditionals

	Multi-case Bare Conditionals	One-case Bare Conditionals
Example	(121a) Shei xian lai, shei /*ta (jiu) xian chi. who first come, who/he then first eat 'If x comes first, x eats first.'	(127b) Shei shangxueqi na di-yi-ming, who last semester get top-one ta/shei zhexueqi jiu dang banzhang. he/who this semester then serve leader 'Whoever had the best score last semester can serve as the class leader this semester.'
Meaning	(121a) $\forall x (x \text{ come first} \rightarrow x \text{ eat first})$ The first <i>wh</i> -clause describes a <u>possibility</u> .	(i) When two <i>wh</i> -words occur: $\forall x (x \text{ has the best score last semester} \rightarrow x \text{ can serve as the class leader this semester})$ (ii) When a pronoun occurs: Lin suggests three possible analyses but concludes that further study on the quantification of CBCs is needed.
Form	presence of pronouns <i>no</i> overt leading element <i>ruguo</i> 'if' <i>no</i> presence of <i>you</i> 'exist' <i>no</i> episodic tense/aspect <i>no</i>	presence of pronouns <i>yes</i> overt leading element <i>ruguo</i> 'if' <i>no</i> presence of <i>you</i> 'exist' <i>no</i> episodic tense/aspect <i>yes</i>

4.3 Problems with Previous Accounts on Pronoun Occurrence

4.3.1 The Status of Pronoun in Bare Conditionals: Not an E-type Pronoun

As argued in Chapter 2, Cheng and Huang's unselective binding analysis is not adequate to capture the distribution of *wh*-words in bare conditionals. We have analyzed the antecedent *wh*-phrase in a bare conditional as a definite description and its anaphoric element in the second clause (a pronoun or a second *wh*-word) as a variable. So could a pronoun in a bare conditional be a donkey pronoun? The answer to this question appears to be a negative one.

An E-type pronoun is plural in form if its antecedent is plural (as shown in (120)). However, a pronoun in a bare conditional must be singular even when the discourse makes it clear that its antecedent has a plural reading:

(128) A: Zuowan you hen duo xuesheng zai waimian dajia.
last night there be very many student at outside fight.
Tamen dou bei fa-le ma?
they all Passive punish-Perf question particle
‘There were many students in a fight outside last night. Were they all punished?’

B: *Shei da-le-jia, shei/ta/*tamen (jiu) bei fa.*
who fight-Perfect who/(s)he/*they (then) Passive punish
Naxie xuesheng dajia bushi diyici.
those student fight not first time
‘Whoever fought was punished. It was not the first time that those students were in a fight.’

The speaker in (128B) explicitly states that multiple students were punished and the anaphoric element in the bare conditional can only be a singular pronoun. This suggests that the pronoun in a bare conditional is not the same as an E-type pronoun that allows plural.

Although Cheng and Huang claim that a Chinese pronoun cannot be directly bound by an operator in an \bar{A} -position (see the examples in (124) taken from Aoun and Li

(1989, 1990)), this does not mean that a pronoun can never be a bound variable in Chinese. In fact, a pronoun can be a bound variable as the following examples show:⁶⁴

(129) a. Meigeren_i dou shuo Lisi xihuan ta_i.
 everyone all say Lisi like him
 ‘Everyone said Lisi likes him.’

b. Meige_i bei ta_i mama da de ren dou shuo ta_i pigu hen tong.
 every Passive his mother hit Rel person all say his butt very hurt
 ‘Everyone who was beaten by his mother says his butt hurts.’

Chinese permits a pronoun to be a bound variable after all. Our account that treats a pronoun as a variable in the consequent clause of a bare conditional is in accord with the nature of *ta* ‘he/she’.

4.3.2 Problems with Lin’s Assumptions on Pronoun Occurrence: Data against Lin’s Constraint on Pronoun Occurrence

Based on Lin’s study, a pronoun in a bare conditional cannot be felicitous in the following situations: (i) when they do not have actual unique referents; (ii) when they are used to refer to an NP whose determiner is *renhe* ‘any’ or *mei* ‘every’; (iii) when their

⁶⁴ The example in (129a) is taken from Aoun and Li (1989) (their (30a)). According to their study, a Chinese pronoun can be bound by a quantifier as long as it is \bar{A} -free in its domain. The pronoun in the example in (129a) is \bar{A} -free in the embedded clause and so it can be \bar{A} -bound by *meigeren* ‘everyone’ which occurs outside of this domain. Chinese lacks Agr (following Huang 1982), the pronoun is not free in the examples in (124), hence cannot be interpreted as a bound variable. Unlike Chinese, Agr is present in English, hence the acceptability of (i) (p. 154):

(i) Everyone_i [_{x_i} said [_{he_i} Agr is a fool]].

However, many native speakers (monolinguals) consider (124) to be acceptable on the pronoun-as-bound-variable reading. All consider (129) to be acceptable. The important thing to be pointed out here is that a pronoun can be a bound variable in Chinese, even though speakers have different intuition with regard to what its legitimate binder may be. This is an interesting topic for future research.

antecedents are plural. In what follows, we show that Lin's generalizations for the use of pronoun in bare conditionals are not tenable within or outside bare conditionals.

4.3.2.1 The Referent of *ta* 'she/he' Can be a Possible Individual

While it is true that bare conditionals can admit consequent pronouns as Lin claims provided examples such as (127) (same as (19)), we have reasons to suspect that his "Condition on Donkey Pronouns in Bare Conditionals" (in (20)) may not be adequate. If we understand the motivation and the basis of Lin's constraint correctly, it rules out all cases of bare conditionals that contain a pronoun whose antecedent fails to refer to a unique individual that satisfies relevant properties in the actual world.

Unnoticed in Lin's study, a pronoun can occur in a bare conditional even when it fails to pick out a unique individual that exists in the real world. Compare his example in (127b) repeated here in (130a) with the example in (130b) below:

- (130) a. Shei shang xueqi na di-yi-ming,
 who last semester get top-one
 shei/ta zhe xueqi jiu keyi/bixu dan banzhang.
 who/he this semester then may/must serve leader
 'Whoever's performance was the best last semester may/must serve as the
 class leader this semester.'
- b. (Genju xuixiao de guiding), shei shangxueqi na di-yi-ming,
 according school DE rule who last semester get top-one
 ta/shei zhexueqi jiu keyi dang banzhang.
 he/who this semester then can serve leader

‘(According to the rule of the school) whoever had the best score last semester can serve as the class leader this semester.

According to Lin, the bare conditional in (130a) has episodic tense/aspect and the set of individuals characterized by the first *wh*-clause are actual individuals. Whenever the anaphoric *wh*-word is replaced by a pronoun in the consequent clause, the antecedent *wh*-phrase must refer to a unique referent and the “more than one person” reading disappears (p. 250). However, the same bare conditional with a consequent pronoun uttered in a context by a school-principal, for instance, the donkey pronoun *ta* ‘he/she’ does not pick out a single actual unique individual that has the relevant property. The added adverbial phrase *gen ju xuixiao de guiding* ‘according to the rules of the school’ helps to set up this generic context. Precisely, (130b) states that *according to the rules of the school, whoever has the best score in the first semester can serve as the class-leader in the second semester*. The antecedent *wh*-phrase in (130b) does not refer to a particular individual who satisfies the relevant description in the actual world. However, the bare conditional is well-formed. Though one-case bare conditionals have episodic tense/aspect, they can be placed in a generic context. As a generic statement, the pronoun in (130b) does not have an antecedent that corresponds to an actual single unique individual. It appears to be the case that Lin’s constraint in (20) is too strong. It incorrectly predicts that a pronoun in a bare conditional always picks up an actual unique individual.

We find that a pronoun can occur in a bare conditional even when no individual in the actual world satisfies the conjuncts. This is true not only for a pronoun in a bare

conditional used as a generic statement as shown in (130b), but also for the pronoun in the following example has episodic tense/aspect:

- (131) Dengyixia shei mei jiang-wan, mingtian jiu you shei/ta xian kaishi.
later who not talk-finish tomorrow then let who/him first begin
'Tomorrow let's begin with whoever does not finish his talk later.'

The pronoun in (131) does not pick up an actual individual that satisfies the description of the conjuncts, and the bare conditional is well-formed.

That the use of the pronoun *ta* 'he/she' does not require its referent to be an actual and unique individual also finds evidence in naturally occurring data. Consider the following examples retrieved from the web:⁶⁵

- (132) a. Jintian shei yao keqituituo, women jiu fa ta liangbei.
today who want polite we then punish him/her two cup
'Today we will punish with two more drinks whoever wants to be polite.'

- b. Fu qi zhijian chuangtou da chuangwei he,
husband wife between bed head fight bed end reconcile
neng you shenme en cho ne?
can have what mercy hatred question particle
zai buxing, jiu yue fa san zhang,
again not able then make law three chapter
shei yao renbuzhu dapo le guiju, jiu fa ta tuo di
who want endure not break PERF rule then fine him/her mop floor
san tian!
three days

⁶⁵ Retrieved August 13, 2009, from 小说之家->书库首页->围城

‘It is usually the case between a husband and a wife that they will fight and reconcile. How can there be any hatred? If this does not work, then simply make up a rule. Whoever cannot endure and breaks the rule will mop the floor for three days!’

In the contexts of (132), pronouns do not pick up individuals that actually satisfy relevant descriptions in the actual world. Likewise, the following examples show that a pronoun in a bare conditional can be felicitous even if the context does not supply an individual that satisfies the relevant description in the actual world:⁶⁶

(133) a. 誰要遊戲人生，他就一事無成。

Shei yao youxi rensheng, ta jiu yishi wo cheng.
who want play life (s)he then one thing no achieve
‘Whoever wants to squander his life will achieve nothing.’

b. 誰有本事把一堆垃圾搬進美術館展覽，他就被稱為藝術家？

Shei you benshi ba yi-dui lese banjin meishuguan zhanlan,
who have guts BA a pile trash move into art museum display
ta jiu bei chengwei yishujia?
(s)he then Passive call artist
‘Whoever has the courage to bring a pile of trash to be displayed in a museum will be called an artist?’

Worst of all, Lin’s constraint cannot be extended to account for pronoun occurrence in ordinary *ruguo* ‘if’-conditionals where *ta* ‘he/she/it’ refers to a hypothetical non-actual individual:

⁶⁶ The naturally occurring examples in (133) were originally written in Chinese orthography.

- (134) Ruguo you shei qifu ni, wo jiu qu da ta.
 if have who bully you I then go hit he/she
 ‘If someone bullies you, I’ll go hit him/her.’

It is safe to conclude that if there is a constraint on pronoun occurrence in bare conditionals, it has nothing to do with whether or not a pronoun can refer to an actual individual that satisfies relevant properties.

4.3.2.2 *Ta* ‘he/she’ Can be Anaphoric to *Renhe* ‘any’ NPs

Lin claims that bare conditionals that disallow a consequent pronoun or other anaphoric elements as in (121) have the quantificational force “similar to that of *any*” while those that contain a pronoun do not. However, bare conditionals with a pronoun can also have a *renhe* ‘any’-reading. The bare conditional in (133a) can have the following paraphrase where the *wh*-phrase has a reading similar to *any*:

- (135) Renheren yao youxi rensheng, ta jiu yishi wo cheng.
 anyone want play life he then one thing no achieve
 ‘Anyone who squanders her/his life will achieve nothing.’

Even in ordinary discourse outside bare conditionals, *ta* ‘he/she’ can take a *renhe* ‘any’-NP as its antecedent as shown in the following examples:⁶⁷

- (136) a. 任何一個男人的優點，都是以他的缺點作為代價。
 Rehhe yige nanren de youdian dou shi yi tade quedian zuowei daijia.
 any one man DE virtue all be use his shortcoming as price

⁶⁷ Retrieved July 13, 2009, from <http://tw.myblog.yahoo.com/jo-a/article>

‘Any man’s strong points use his shortcomings as the price.’

b. 任何一個銷售員他唯一的一個任務是銷售。

Rehhe yige xiaoshouyuan, ta weiyi de yige renwu shi xiaoshou.

any one salesman his only one DE one mission be sell

‘Any salesman, his only mission is to sell.’

Once again, Lin’s generalizations for the use of pronoun do not hold within or outside bare conditionals.

4.3.2.3 *Ta* ‘he/she’ can have Plural Antecedents

Another implication of Lin’s generalization for the use of pronoun in bare conditionals is that when a pronoun occurs in a bare conditional, its *wh*-antecedent cannot be plural. He claims that when a pronoun occurs in a bare conditional, the antecedent *wh*-phrase must refer to a unique referent and the “more than one person” reading disappears (1996, p. 250). However, contrary to Lin’s observation, the presence of *ta* ‘he/she’ does not rule out a “more than one person” reading in the following bare conditionals:

(137) a. 誰敢說雷鋒故事是編的就找他拼命。⁶⁸

Shei gan shuo Leifeng gushi shi biande jiu zhao ta pinming.

who dare say Leifeng story be fabricated then seek (s)he defy death

‘We will defy with our might whoever dared to/dares to say Leifeng’s story is fabricated.’

⁶⁸ <http://www.cns.hk:89/cul/news/2010/03-05/2152725.shtml>

b. 谁想让我死，我就先让他死。⁶⁹

Shei xiang rang wo si, wo jiu xian rang ta si.
who want let I die I then first let (s)he die
'I will let whoever wants/wanted me to die, die first.'

While it is likely that only one individual says/said Leifeng's story is fabricated in (137a), it is also possible, that more than one person has this property. Likewise, the presence of the pronoun in (137b) does not rule out the "more than one person reading," contrary to Lin's claim. Our account analyzes the antecedent *wh*-phrase and its anaphoric element as definites denoting a maximal plural entity (Chapter 2). This maximal plural entity can be an atomic entity resulting in a singular definite reading, or, it can be an entity that consists of more than one atom deriving a universal-like ("more than one person") reading. Regardless of how many individuals have the relevant property, quantification in bare conditionals can be covered under our account.

Outside bare conditionals, the pronoun *ta* 'he/she' can also be anaphoric to a plural NP (cf. Zhang 2005; Xu 1999). In each of the following examples, *ta* 'he/she' has a plural antecedent (from Xu 1999):

- (138) a. Zhaxie jiahuo, zhineng dui ta bukeqi.
these chap cannot but to 3SG impolite
'As for these chaps, (we) cannot but be impolite to them.'
- b. Zhe bang xiaotou, jingcha hengude sha le ta.
this gang thieves, police would-rather kill ASP him
'This gang of thieves, the police would rather kill them.'

⁶⁹ <http://www.sslou.com/sslouinfo/0/584/1358108.shtml>

These sentences are acceptable with the singular pronoun taking a plural antecedent. Again, Lin's constraint on pronoun occurrence does not find support within or outside of Chinese bare conditionals.

4.4 Explanations for the (In)compatibility of Bare Conditionals with Pronouns

In this section we approach the problem of pronoun occurrence in bare conditionals by dividing the discussion into two sub-sections. First, we show that the occurrence of inanimate *ta* 'it' in bare conditionals follows from a general principle of the language in that the inanimate *ta* 'it' is rarely used to refer to inanimate entities. In the second part of the discussion, we consider two possibilities to explain the (in)compatibility of bare conditionals with the animate pronoun *ta* 'he/she'. Though bare conditionals typically contain two identical *wh*-words, they may occur naturally with *ta* 'he/she' when *ta* 'he/she' is able to serve its function as a discourse chaining device. It is also possible that bare conditionals with two identical *wh*-words have a parallel structure that may not be interrupted by the presence of a pronoun.

4.4.1 Constraints on the Use of Inanimate *ta* 'it'

We can rule out the use of inanimate *ta* 'it' in bare conditionals by appealing to a general constraint that Chinese imposes on its uses. In Mandarin, the pronoun *ta* 'it' is rarely used to refer to inanimate entities. As a response to speaker A's question in (139), the answer in B without the pronoun *ta* 'it' is appropriate, while the one in B' with the pronoun

	is	not:
--	----	------

(139) A: Ni xihuan nei-ben shu ma?
 You like that-CL book Q-Particle
 ‘Do you like that book?’

B: Wo xihuan.
 I like
 ‘I like it.’

B’: ?? Wo xihuan ta.
 I like it
 ‘I like it.’ (cf. Li and Thompson 1981)

Similarly, we can rule out bare conditionals with *wh*-words standing for inanimate NPs.⁷⁰

(140) Ni kanjian shenme, ni jiu hui dedao shenme/*ta.
 you see what you then will get what/it
 ‘You will get whatever you see.’

(141) Gege you shenme, wo jiu ye yao you shenme/*ta.
 brother have what I then also want have what/*it
 ‘I want to have whatever my brother has.’

It turns out that the use of third person inanimate pronoun is generally excluded in the language, not just in bare conditionals.

4.4.2 The Discourse Function of Animate *ta* ‘he/she’

⁷⁰ The example in (140) is taken from Cheng and Huang (1996) and (141) from Lin (1996, 1998).

Third person pronouns have an important role to play in promoting discourse coherence by linking separate utterances into a model of discourse (Gordon, Grosz & Gilliom 1993; Grosz, Joshi & Weinstein 1995). Whether or not a speaker will use a pronoun to pick up a discourse entity often depends on how the speaker intends for the discourse to be structured in a certain way. Chinese third person pronouns, null or overt, serve to link sentences into a coherent chunk of discourse and tend to pick up the most salient entity under discussion. Bare conditionals allow the alternation between a *wh*-word and the pronoun *ta* ‘he/she’ in the second clause, particularly when its intended antecedent is the most salient thing under discussion (or a topic).⁷¹ Compare Cheng and Huang’s bare conditional in (121b) detached from context (repeated here in (142a)) to the one in (142b) that does not occur in isolation:

(142) a. Ni xihuan shei, shei/*ta (jiu) daomei.
 you like who who/(s)he then unlucky
 ‘Whoever you like will be/is unlucky.’

b. Wo bu shidao shei daomei. Ni xihuan shei, shei/ta (jiu) daomei!
 I not know who unlucky you like who who/(s)he then unlucky
 ‘I don’t know who will be/is unlucky. Whoever you like will
 be/is unlucky.’

⁷¹ Pronouns that indicate topics are formal devices that link clauses together to form a discourse unit—a topic chain. Tsao (1988) characterizes topic chain as sentences under the domain of a topic (what the discourse is about). According to Li and Thompson (1981), a topic chain is “where a referent is referred to in the first clause and then there follow several more clauses talking about the same referent (p. 659). Here I do not wish to discuss topic and topic chain in detail and focus only on making known that the use of pronoun in bare conditionals can be felicitous if the discourse is structured in a certain way.

Cheng and Huang's bare conditional in (142a) is not compatible with a pronoun. However, the pronoun can occur naturally in the same bare conditional in (142b). It links the bare conditional and the sentence preceding it into a coherent piece of discourse. Note that the bare conditional in (142b) has an ignorance reading as the most prominent reading. It is very tempting to make a clear distinction between ignorance and indifference bare conditionals based on the presence of a pronoun and to claim that bare conditionals that occur with a pronoun always have an ignorance reading and those that occur with two identical *wh*-words always have an indifference reading. Unfortunately, this claim does not hold since the indifference reading is also available in (142b) and does not disappear because of the presence of *ta* 'he/she'.

What we can be certain of is the fact that a pronoun in a bare conditional can be felicitous if the context is set up in a way that its function as a discourse chaining device can be served. It is beyond the scope of this dissertation to examine the exact constraints that govern the use of pronouns in Mandarin. In the next section, we only ask why Cheng and Huang's bare conditionals (cf. (142a) and (121)) dislike the presence of a pronoun. I suspect that there may be a general tendency among speakers to preserve the parallel structure in bare conditionals that make the occurrence of a pronoun difficult.

4.4.3 Speaker's Preference for Parallel Construction

The use of parallel sequences is a well-known stylistic feature in Western literature. In the West, the notion of parallelism is primarily associated with the rhetoric of classical antiquity.⁷² In Chinese, however, parallelism appears more frequently and

⁷² In the Greek and Latin classics, Hebrew poetry and classical Arabic texts (Koranic and post-Koranic), the type of parallelism is limited to the function of rhetorical ornamentation.

rigorously. In fact, parallelism in Chinese is a natural mode of utterance rather than the objective of rhetorical manipulation. Roughly, we can define parallelism in Chinese quoting Gustave Schlegel (following Plaks 1988):

In two parallel phrases the rules of Chinese style demand that all the parts correspond to each other: the subject to the subject, the verb to the verb, the noun to the noun, the adjective to the adjective, the adverb to the adverb, the place name to the place name, the sign of the genitive to the sign of the genitive, the object to the object, etc.

More concretely, we may say that clause X and clause Y are parallel when they are involved in the following way (cf. Needham 1998):

- (143) a. X and Y are the opposite to each other.
b. X and Y are identical and have the same meaning.
c. X and Y are synonymous.
d. X and Y are in alliteration, reduplication, and rhyme.
e. X and Y are the same/similar in length.

An example of parallelism can be found in the following passage from the *Analects*:

(144) 不亦悅乎，不亦樂乎

Bu yi yue hu, bu yi le hu.
not also joyful question not also happy question
'Is it also not joyful, is it also not happy?'

In (144), the first and the second clause are the same length. There are four words in each clause. Phonetic recurrence is also observed. The first and the second clause are in alliteration and in rhyme. Moreover, the predicate *yue* ‘joyful’ in the first clause corresponds to *le* ‘happy’ in the second clause. They are synonymous to each other.

A similar pattern is also observed in the structure of bare conditionals that do not occur naturally with a pronoun. Cheng and Huang’s examples in (121) repeated here in (145) display the features of parallelism just defined in (143):

- (145) a. *Shei xian lai, shei /?ta (jiu) xian chi.*
who first come, who/(s)he then first eat
‘If x comes first, x eats first.’
- b. *Ni xihuan shei, shei /?ta jiu daomei.*
you like who who/(s)he then unlucky
‘If you like x, x is unlucky.’

Not only are the first and the second clause in the bare conditionals above are the same in length, they also have verb phrases that correspond to each other. In (145a), *xian lai* ‘first come’ is parallel to *xian chi* ‘first eat’. In (145b), *xihuan* ‘like’ is paired with *daomei* ‘unlucky’. Two identical *wh*-words in bare conditionals produce a pattern of phonetic recurrence--alliteration, reduplication, and rhyme. They also shape the two clauses into balanced coordinates, self-contained single unit. If a pronoun occurs in the second clause in these bare conditionals, it will disrupt the pattern of phonetic recurrence and destroy the parallelism. Naturally occurring examples of bare conditionals that have a parallel structure are shown in (146) below:

(146) a. 馬英九誰碰到誰倒楣.⁷³

Ma Yingjiu *shei pengdao shei daomei*.

Ma Yingjiu who run into who unlucky

‘Ma Yingjiu, whoever ran into him will become/is unlucky.’

b. 神要怜悯谁就怜悯谁⁷⁴

Shen yao *lianming shei jiu lianming shei*,

God want pity who then pity who

‘God will pity/pities whoever he wishes to pity.’

c. 誰先愛了，誰就輸了⁷⁵

Shei xian ai-le, shei jiu shu-le.

who first love-PERF who then lose-PERF

‘Whoever fell in love first loses/lost.’

d. 誰做假誰負責⁷⁶

Shei zuojia shei fuze.

who counterfeit who responsible

‘Whoever counterfeited takes the responsibility.’

e. 妳愛嫁誰就嫁誰⁷⁷

Ni ai jia shei jiu jia shei.

you love marry who then marry who

‘Marry whoever you are in love with.’

⁷³ taiwanheart.ning.com/video/ma-ying-jiu-shui-peng-dao

⁷⁴ holybible.com.cn/romans/9-18.htm

⁷⁵ hi.baidu.com/.../blog/item/84c482f10b4d2bc87831aa71.html

⁷⁶ big5.xinhuanet.com/gate/big5/news...03/.../content_13153739.htm

⁷⁷ www.atlaspost.com/landmark-4406480.htm - Taiwan

Parallelism in the bare conditionals in (146) all display the features of parallelism in Chinese defined in (143) illustrated in the following table:

Table 3 Parallelism in Bare Conditionals

Bare Conditionals (146) <i>X...Y</i>	Matched <i>wh</i> -words in <i>X...Y</i>	Paired VPs in <i>X...Y</i>	Matched numbers of morphemes	Phonetic recurrence
(a)	<i>shei... shei</i> 'who...who'	<i>pengdao...daomei</i> 'meet...unlucky'	3 vs. 3	alliteration
(b)	<i>shei... shei</i> 'who...who'	<i>lianmin...lianmin</i> 'pity...pity'	4 vs. 4	final rhyme
(c)	<i>shei... shei</i> 'who...who'	<i>Ai... shu</i> 'love...loose'	4 vs. 4	alliteration end rhyme
(d)	<i>shei... shei</i> 'who...who'	<i>zuojia...fuze</i> 'counterfeit...responsible'	3 vs. 3	alliteration
(e)	<i>shei... shei</i> 'who...who'	<i>aijia... jia</i> 'love to marry...marry'	3 vs. 3	end rhyme

Parallelism pervades most compositions in literary Chinese and affects any level of the text (Nienhauser & Hartman 1998, p. 96-97). In *Baguwen* 八股文 'Eight-part Essay', it is a major principle ordering the presentation of the entire themes and arguments.⁷⁸ In *p'ien-wen* or 'parallel prose' parallelism orders the syntax of each distich in the composition. In *Lǜ-shi* 'regulated verse', it orders the rhythmic alternation of contrasting tone values for each graph in the couplet. In the Chinese literary medium, we find strict matching, word for word, syllable for syllable, parallel clauses and parallel lines, as well as patterns of phonetic recurrence (alliteration, reduplication, and rhyme). The use of strictly parallel sequences is a pervasive pattern in Chinese writing, a natural

⁷⁸ *Baguwen* 'Eight-part Essay' is a style of Chinese traditional writings specifically for imperial examinations in the Ming and Qing dynasties.

mode of utterance, and a fundamental feature of the Chinese spoken language itself. Vernacular works also manifest a wide array of rhetorical effects based on parallelism (cf. Nienhauser & Harman 1998).

It is very likely that speakers prefer paired *wh*-words in bare conditionals with paired verb phrases and matching numbers of morphemes because there is a general tendency to create and preserve the parallel structure as a central principle of composition in Chinese literary tradition and a fundamental feature of the Chinese spoken language itself. The presence of a pronoun is not desired because it can disrupt the parallel structure of bare conditionals that contain paired verb phrases, matching numbers of morphemes, and phonetic recurrences. From this we predict that when two clauses do not have a parallel structure, a bare conditional should occur naturally with a pronoun. The examples in (133) and (137) appear to support this point. The bare conditionals in those examples contain a pronoun and they do not have the parallel structure we just saw with the examples in (146).

While it is possible that speakers prefer a parallel structure, further work must examine whether utterances containing bare conditionals with identical *wh*-words produce a certain rhetorical effect that is not found in those that contain a pronoun.

4.5 Conclusion

In the beginning of this chapter, I provided the theoretical background for donkey sentences by introducing E-type pronouns and donkey sentences in relation to conditional donkey sentences in Chinese. Then, I reviewed two important analyses from Cheng and Huang (1996) and Lin (1996) and showed that a pronoun in a bare conditional does not

display characteristics of E-type pronouns. I provided possible explanations to the puzzle of pronoun occurrence in bare conditionals and showed that pronoun occurrence in Chinese in general (within or outside of bare conditionals) is not subject to Lin's uniqueness and existence constraint. I suggested that although bare conditionals typically contain two identical *wh*-words, they may occur naturally with *ta* 'he/she'. This happens when *ta* 'he/she' is able to serve its function as a discourse chaining device linking the bare conditional with other sentences into a coherent discourse. It is also possible that bare conditionals that do not occur naturally with a pronoun have a parallel structure. The occurrence of two identical *wh*-words preserves the parallel pattern. If a pronoun occurs, it will disrupt the parallel structure and is not desired.

Chapter 5

Conclusion

At first glance, the structure of bare conditionals struck us as something as alien as Tribbles, the extraterrestrial furry creatures in *Star Trek*.⁷⁹ Or worse, we may consider bare conditionals as lesser a creature than a Tribble. As strange as Tribbles look, they are identifiable to say the least. No Treky would mistake a Tribble with an Ewok from *Star Wars*, though both creatures are furry. On the contrary, everything we knew about bare conditionals was confusing and no consensus could be reached as to how to best characterize them. The literature on Chinese bare conditionals is full of conflict, controversy, and mystery. Cheng and Huang (1996) treat their meaning as the same as that of ordinary hypothetical conditionals. Lin (1996) suspects that bare conditionals may not be “conditionals” at all and calls for more research on their quantification. Most scholars translate bare conditionals into English using sentences with *whatever*, *whoever*, etc., but are often times troubled by the fact that the translation between the two does not go both ways. For the first time, this dissertation investigates the form and meaning of Chinese bare conditionals from several aspects of linguistics (syntactic, pragmatic, semantic, historical) and inquires into the nature of the Chinese language to describe the nature of this construction. By doing so, we discovered that the structure of Chinese bare conditionals belongs to a part of a general phenomenon in Chinese. The form of Chinese bare conditionals reflects a paratactic sentence pattern that sentences in ordinary discourse exhibit in the Chinese language. Although bare conditionals occur with no overt linking element, the default relationship between the two clauses is that of a causal

⁷⁹ See *Star Trek* “The Trouble with Tribbles” (1967).

one. Although bare conditionals do not involve relativization, their quantification is similar to that of Hindi left-adjoined correlatives and English *-ever* clauses. This contrasts sharply with Cheng and Huang's study where bare conditionals are treated as unrelated to correlatives/free relatives. By placing bare conditionals back in context, we saw a sharp contrast between the use of bare conditionals and ordinary hypothetical *ruguo* 'if'-conditionals.

Reflecting on previous works on Chinese bare conditionals, I showed that although bare conditionals appear similar to ordinary *ruguo* 'if'-conditionals in the forms that they exhibit, they actually differ greatly in that a hypothetical *ruguo* 'if'-conditional is typically used to make a hypothetical assumption, while this is not the case with a bare conditional. The antecedent clause of a hypothetical conditional expresses a proposition, while the first clause of a bare conditional has the meaning of a NP ambiguous between a singular definite and plural definite reading. Bare conditionals also differ from hypothetical *ruguo* 'if'-conditionals with respect to the distribution of *wh*-words. While *wh*-words behave like definites in bare conditionals, they are like indefinites in *ruguo* 'if'-conditionals. This contrasts sharply with previous works including Cheng and Huang (1996) and Lin (1996) that claim that bare conditionals with two identical *wh*-words are genuine *if p, q* conditionals.

Concerning quantification, I proposed a unified treatment similar to the analysis of Jacobson (1995) for English FRs to capture the quantificational force of *wh*-phrases in bare conditionals. The antecedent *wh*-phrase is an iota expression and the pronoun/*wh*-word in the second clause has the interpretation of a bound variable. The antecedent *wh*-phrase and its anaphoric element are uniformly treated as definites denoting a maximal

plural entity. This maximal plural entity can be an atomic entity resulting in a singular definite reading. Alternatively, it can be an entity that consists of more than one atom deriving a universal-like reading. Previous accounts of *wh*-phrases including works such as Lin (1996, 1998) and Chierchia (2000) do not consider the fact that *wh*-phrases can be definites and leave behind pieces of puzzles as a result. While Chierchia (2000) (following Cheng and Huang (1996)) has a difficult time trying to explain why *wh*-phrases as “indefinites” in bare conditionals are not subject to the novelty condition, the present account that considers *wh*-phrases in bare conditionals as definites can spare any theorist from such postulation. While the nature of *wh*-phrases in bare conditionals remained a mystery in Lin (1998) in displaying uncharacteristic properties that his proposal cannot explain, the present account is able to predict the existence of anaphoric definite *wh*-phrases in bare conditionals as well as in naturally occurring data. It also bears an implication for the study of the distribution of Chinese *wh*-phrases in being able to provide an explanation to the puzzle raised in Lin (1998).

With regard to modal implication, a topic that has not been discussed in previous works, I pointed out that although bare conditionals can also have ignorance or indifference readings like *whatever*, the primary function of bare conditionals is not to signal ignorance but to assert indifference. I proposed to capture the agent’s/speaker’s indifference reading of bare conditionals with von Stechow’s semantics of *whatever*, but suggested that his analysis may not be well-suited for *whatever* after all. The indifference reading in von Stechow’s analysis is interpreted against a counterfactual modal base which implies temporality and predicts a causal link. While we have evidence from bare conditionals that a counterfactual semantics is adequate in capturing the agent’s

indifference reading, it may not be applied directly to *whatever*. This is because a causal link is necessarily present in a bare conditional, but not required in an English *whatever*-sentence. While the first *wh*-clause in a bare conditional is adjoined to the left of the main clause, a *whatever*-clause is generated in an argument position. These differences between bare conditionals and *whatever*-sentences contribute to the problem of translation between these two constructions.

In addressing the problem of pronoun occurrence, I claimed that a pronoun in a bare conditional does not display the characteristics of a donkey pronoun. I also showed that though bare conditionals typically contain two identical *wh*-words, they may occur naturally with *ta* ‘he/she’. This happens when *ta* ‘he/she’ is able to link bare conditionals with other sentences into a piece of coherent discourse. Then, I entertained the possibility that bare conditionals with two identical *wh*-words have a parallel structure that may not be interrupted by the presence of a pronoun. Whether bare conditionals with parallel structure (which contain two identical *wh*-words) differ from those that do not (which occur with a pronoun) in producing a certain rhetorical effect remains to be seen. Future research must also examine the exact constraints that govern the use of pronouns in Mandarin.

To sum up, let us restate the questions that came up in the present study:

1. What is the full spectrum of properties that *wh*-phrases display? In this dissertation, we saw that *wh*-phrases can behave like anaphoric definites. I suspect that there may be other uses of *wh*-phrases that are not documented in the literature simply because they do not fit in the prototypical description of indefinites *wh*-phrases meaning ‘something, someone’.

2. What is the nature of the Chinese third person pronoun *ta* ‘he/she/it’? While some scholars argue that *ta* ‘he/she/it’ cannot be bound, others claim that it can. Why do native speakers show different intuitions about this? What are the exact constraints that govern the use of *ta* ‘he/she/it’?
3. What is the invariant meaning of English *whatever*? The so-called “ignorance presupposition” in von Stechow (2000) turned out to be a kind of inference accommodated only when certain conditions are met, but what is the mechanism responsible for all possible inferences that *-ever* produces?

In the process of investigating the meaning and form of Chinese bare conditionals I found a certain gap that exists between the different fields of Chinese linguistics. Works on formal syntax are typically produced by extracting patterns from sentences that are detached from contexts without noticing that the use of certain elements such as that of pronouns cannot be analyzed without considering their role in discourse. Studies on formal semantics are often conducted with no reference to pragmatic factors. The presence of the gap between the field of Chinese syntax, semantics/pragmatics, and other areas of linguistics is also due to the fact that the majority of papers submitted to conferences on Chinese linguistics are syntax-oriented, according to the statistics of Huang, Li, and Li (2009). This is unsurprising since Chinese is a language that does not have a long tradition of linguistic scholarship like English and many other Indo-European languages. Very little was known about the linguistics of Modern Chinese. In fact, not until the past quarter of a century have we started to see works on Modern Chinese appear in academic journals published in the west. The study of syntax alone cannot give us a full picture of the state of the language. In this dissertation, I explained the meaning and form of Chinese bare conditionals including quantification, presupposition,

entailment, and pronoun occurrence not confined to a particular viewpoint. Though the outcome of my arguments remains to be seen, and they leave questions for future research, I hope to have shown the urgency of presenting a coherent view that bridges the various gaps in Chinese linguistics.

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